HISTORY OF CARGILL'S WORK WITH SOYBEANS AND SOY INGREDIENTS (1940-2020):

EXTENSIVELY ANNOTATED BIBLIOGRAPHY AND SOURCEBOOK

Compiled

by

William Shurtleff & Akiko Aoyagi



2020

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DEDICATION AND ACKNOWLEDGMENTS

This book is dedicated to Cargill, Inc.

Part of the enjoyment of writing a book lies in meeting people from around the world who share a common interest, and in learning from them what is often the knowledge or skills acquired during a lifetime of devoted research or practice. We wish to give deepest thanks...

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■ Finally our deepest thanks to Tony Cooper of San Ramon, California, who has kept our computers up and running since Sept. 1983. Without Tony, this series of books on the Web would not have been possible.

This book, no doubt and alas, has its share of errors. These, of course, are solely the responsibility of William Shurtleff.

■ This bibliography and sourcebook was written with the hope that someone will write a detailed and well-documented history of this subject.

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INTRODUCTION

Brief Chronology/Timeline of Cargill's Work with Soy

1865 – Cargill is founded by William Wallace Cargill when he buys a grain flat house in Conover, Iowa. In 1865 Cargill has 1 employee and operates in 1 country.



1930 – **New logo**. Cargill has 400 employees in 4 countries.



1943 Jan. – This month Cargill's Feed Department announces the purchase of the soybean crushing mill and feed plant of the Iowa Milling Co. in Cedar Rapids, Iowa (*Cargill News*, p. 2). The mill is in operation by the end of January.

1943 Oct. 11 – Cargill announces the purchase from the Illinois Soy Products Company of their soybean plant, elevator, and office building at Springfield, Illinois (*Cargill News*, Oct. p. 16). Cargill started operating this plant on Oct. 13 (*Cargill News*, Nov. p. 3-6). The plant uses expellers to crush the soybeans.

Note: *The Decatur Daily Review* (Associated Press) says this plant was sold to Cargill on **Oct. 26**. The sale "was announced last night by I.D. Sinaiko, president and manager of the local firm since it was established in 1935. Details of the transaction were not disclosed. The plant has a processing capacity of a million bushels of soybeans a year."

1943 Oct. 13 – Effective today, Cargill, Inc., purchases the Plymouth Processing Mills of Fort Dodge, Iowa (*Cargill News*, p. 16).

1943 – Cargill acquires Plymouth Processing Company's plant and grain elevator at Ft. Dodge, Iowa (sold in 1971 [to Land O'Lakes]).

1945 – Cargill acquires from Honeymead solvent extraction plants in Spencer and Cedar Rapids (west), Iowa. The solvent-extraction process is used in modern plants today. Dwayne Andreas, later of ADM fame, resigned as vice-president of Honeymead to become general manager of Cargill's Cedar Rapids operations; Soon Andreas was promoted to a vice-president of Cargill and moved to Cargill's main office in Minneapolis, Minnesota. Cargill's president, John H. MacMillan Jr., offered him a 4 percent stock interest. Andreas remained for seven years, making a $400,000 after-tax profit when he sold his stock back to the company. In the process he traveled widely and learned how a global company works.

1945 – **New logo.** 3320 employees - 4 countries.



1947 – Cargill opens a soybean crushing plant at Savage, Minnesota (Lauser).

1949 – Cargill now publishes a periodical titled *Cargill Crop Bulletin.*

1950 – Cargill builds its first plant specifically designed to crush soybeans in Chicago to serve domestic oil and meal markets. In 1956, a refinery was built adjacent to the crushing plant that produces industrial refined non-edible oil used in paints and other protective coatings and in vinyl products (Lauser).

1953 – **New logo**. 4108 employees - 6 countries.



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1954 – Cargill establishes a new research department at Wayzata, Minnesota (*JAOCS* 1960, Aug.).

1955 – **New logo**. 4390 employees - 11 countries.

1957 – Cargill opens a soybean processing plant in Memphis, Tennessee. A second plant is added adjacent to the first in 1970.

1959 – Cargill expands the scope of its soybean crushing activities to the Southeast by opening a facility in Norfolk, Virginia, and acquired a plant in Sioux City, Iowa, from Sioux Industries.

1960 – **New logo**. 4646 employees - 17 countries. Orange logo

1960 – The Wichita, Kansas soybean crushing plant is acquired from the Soy Rich Company.

1961 – The company acquired the Des Moines, Iowa soybean crushing plant from Spencer-Kellogg Co. In 1967, Cargill opened its first domestic salad oil refinery adjacent to this crushing plant.

1964 Dec. – Cargill [dba Proteinas y Grasas S.A.] first begins crushing soybeans overseas at its new plant in Reus,Tarragona, Spain.

1967 – Cargill opens a soybean crushing plant in Gainesville, Georgia. A refinery, Cargill's first to produce hydrogenated or "hardened" oil for the Southeastern food manufacturing industry, was built adjacent to it in 1979.

1968 – The company opens a second overseas plant in Amsterdam, the Netherlands.

1969 Nov. – Cargill CEO Erwin E. Kelm discloses, for the first time, a great deal about its finances and operations – in a speech before the Harvard Business School Club of the Twin Cities. In accepting the club's 'honored company' citation, he told more about the 104-year-old company than had ever been reported in public. He also discounted any thought that Cargill might become a publicly-owned corporation.

Cargill's sales exceeded $2 billion during each of the past four years. Company earnings averaged better than $14 million in each of those years. Cargill's sales of $2 billion would place it alongside the top 30 or 40 U.S. industrial corporations which are publicly held.

1970 – Cargill opens its 3rd major overseas soybean crushing plant at St. Nazaire, France. The plant is operated by Soja France S.A. – a partnership of Industrie du Soja, S.A., in which Cargill has controlling interest, and Eurosoya, S.A., a French firm. The new plant with a daily input capacity of 1,200 metric tons, is processing U.S. grown soybeans.

1970 – Cargill opens its 4thd major overseas soybean crushing plant at Reus, Spain.

1970 – Cargill builds the Fayetteville, North Carolina, crushing plant, and a refinery was added in 1976.

1971 – Soybean crushing plant at Fort Dodge, Iowa, sold to Land O'Lakes.

1973 – Soybean processing complex began operations at Ponta Grossa, Brazil. Other plants at Ponta Grossa are Anderson Clayton and Irmaus Pereira.

1973 Nov. – According to a study by Lehman Brothers of the Ralston Purina Co. and of the soybean crushing business, Cargill is now the largest U.S. soybean processor with 18.0% of the market and 130 million bushels crushed lst year. No. 2 is ADM with 16.6% followed by Central Soya with 12.5%.

1975 – Cargill acquires a soybean crushing plant in Osceola, Arkansas.

1976 – A soybean crushing plant is built at Barcelona, Spain (Lauser).

1977 – **New logo**. 23,535 employees - 5 countries. Green circle.

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1977 – Soybean plant is constructed and operations began at Brest, France.

1978 – The company opens a soybean processing plant in Sidney, Ohio, to serve domestic meal and oil markets. This facility is the company's first soybean processing plant designed to burn coal as its source of power.

1980 – Construction began on vegetable oil refinery adjacent to Wichita soybean crushing plant; operations started in late 1981.

1981 – Cargill acquires a crushing plant in Antwerp, Belgium.

1981 – Cargill acquires a soybean crushing and vegetable oil refinery complex in Hartsville, South Carolina.

1982 – Cargill acquires a soybean crushing plant in Monte Alto, Brazil.

1982 – Summary and Update: Soybean Crushing: The company now operates soybean processing plants in the United States, the Netherlands, Belgium, France, Spain, Brazil. The plants range in capacity from 20,000 to nearly 120,000 bushels a day. In the U.S., the company operates 15 plants in Iowa, Illinois, Minnesota, Kansas, Virginia, North Carolina, South Carolina, Tennessee, Georgia, Arkansas and Ohio. It operates 6 U.S. refineries located in Gainesville, Georgia; Fayetteville, North Carolina; Des Moines, Iowa; Hartsville, South Carolina; Chicago, Illinois and Wichita (Lauser, personal communication, 1982).

1984 Oct. – Cargill buys six soybean crushing plants from Ralston Purina. The move is part of Ralston's attempt to move away from commodity-based business. Cargill now owns 20 soybean crushing plants in the Midwest and Southeast. With this transaction Cargill passes ADM to become America's largest soybean crusher.

1984 – Cargill is now ranked as the largest privately-held company in the USA. It has sales of $30 billion and 40,000 employees.

1985 – Cargill is widely considered to be the largest soybean crusher in Europe. Their capacity is 9,500 tonnes per day at 5 plants; 2 in France, and one each in Belgium, Netherlands, and Spain.

No. 2 is Unilever with approximately 7,100 tonnes/day capacity (Leysen 1985).

1986 March – Cargill acquires (from Continental Grain Co.) a soybean crushing mill (2,000 tonnes per day capacity), oil refinery and bulk handling facility in Liverpool, England (*Feedstuffs*, Jan. 6, 1986). This is Cargill's first soybean crushing plant in England, although the company presently operates a multi-seed plant in Hull.
The Liverpool mill was first built by Continental in 1975-77 (Anderson 1985).

1986 Nov. – Cargill leads *Forbes* list of largest private firms for the second year in a row. The company has $32 billion in sales – twice that of second-place Koch Industries.

1986 Dec. 8 – Central Soya purchases 7 of 9 Bunge's soybean crushing plants. ADM is now estimated to control 30% of U.S. crushing capacity followed by Cargill (25%), Central Soya (20%), and other (25%).

1987 – Cargill is now in the seed business with Cargill Hybrid Seeds (*Soybean Digest*, Aug/Sept, p. 4).

1987 – Cargill B.V. (affiliate of Cargill Inc.) makes textured soy flour in Amsterdam, The Netherlands (*Soya Bluebook*, 1987, p. 78)

1990 – ConAgra recently passed Cargill to become the largest U.S. meat packer (*Wall Street Journal*. 1990 June 13, p. A1, A4).

1992 spring – Cargill plc relocates its European headquarters from Hammersmith, London to Knowle Hill Park Fairmile Lane, Cobham, Surrey KT11 2PD, UK (*SoyaFoods*, ASA, Europe).

1994 – Cargill, which is one of only 3 members of the Soy Protein Council, makes only three soy protein products / ingredients: defatted soy flour, textured soy flour, and flavored textured soy flour, which are all produced at one plant in Cedar Rapids, Iowa. These products end up as ingredients in consumer products (sold by Shilling, McCormack, etc.), Cargill (like ADM) does not sell any consumer products (*Bill Limpert, personal commnication*).

1997 – America's top ten seed companies (based on 1996 sales of all crops): (1) Pioneer Hi-Bred International $1,721 million. (2) Novartis Seeds $959 million. (3) Limagrain $552 million. (4) ELM / Seminis $525 million (5) DeKalb Genetics $388 million. (6) Asgrow Seed Co. $175 million* (* = estimate). (7) Garst Seed Co. $165 million*. (8) Mycogen Seeds $156 million. (9) Cargill Hybrid Seeds $155 million*. (10) Delta & Pine Land $153 million (*Farm Chemicals* (Willoughby, Ohio), Dec., p. 48)

1998 June 30 – Monsanto Company agrees to pay $1.4 billion for Cargill's international seed operations. In fiscal 1997 Cargill rang up $56 billion in sales. It rarely sells its businesses, but Monsanto made an offer it couldn't refuse

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(*Wall Street Journal*).

2000 Jan. 11 – Cargill and Dow Chemical announce they are ready for full-scale production of "natural plastic" made from plants (such as corn or wheat) instead of petroleum. They have committed to spend $300 million over the next 2 years on the business, brand-named NatureWorks. This includes construction of a manufacturing plant in Blair, Nebraska, that will make 300 million lb/year of the new plastic named polyactide, or PLA. It will be biodegradable – but within what time period is not given (*Wall Street Journal*).

2000 Jan. – Cargill, Inc. purchases an interest in the body of intellectual property created by Michael Richards during his previous 9 years of research and development of soybean oil candles. Mr. Richards' soy wax formulas are marketed under the trade name "Phytowax" (personal communication, Michael Richards).

2000 Aug. – Cargill set to enter the soy protein isolate market by June, but they will not begin full-scale production for about 2 years (*Bluebook Update*, Bar Harbor, Maine, July/Sept. p. 1; see also April/June issue).

2001 summer – Cargill Nutraceuticals officially launches AdvantaSoy isoflavones, which is available in regular and non-GMO versions, is not produced using solvent extraction, and keeps the isoflavones in their natural state (*Nutrition Business Journal*, Oct.)

2001 Oct. – Cargill has a new division named "Cargill Nutraceuticals" (*Nutrition Business Journal*, p. 18-20)

2002 Sept. – Cargill's new AdvantaSoy Clear, a source of concentrated soy isoflavones, is given GRAS status (*Prepared Foods*, p. NS13).

2002 Dec. – Cargill Soy Protein Solutions announces the commercial availability of Prolísse, their new soy protein isolate, made at their new plant in Sidney, Ohio. The product, which is said to have a bland taste and good solubility, was not successful.

2003 – **New logo**. 99181 employees - 58 countries. Thrive logo.

2015 – **New logo.** 143,000 employees - 67 countries. Thrive logo.

2019 – The six largest agricultural commodity traders, ADM, Bunge, Cargill, LDC, COFCO Int. and Glencore Agri, commit themselves to monitoring their soy supply chains in Brazil's Cerrado (*wikipedia.org/wiki/cargill*).

2020 July – Cargill at a glance today. 160,000 employees. Working in 70 countries. More than 150 years experience.

"Our purpose is to nourish the world in a safe, responsible and sustainable way. Every day, we connect farmers with markets, customers with ingredients, and people and animals with the food they need to thrive. We combine our experience with new technologies and insights to serve as a trusted partner for food, agriculture, financial and industrial customers in more than 125 countries" (www.cargill.com/about/cargill-at-a-glance)

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Julius Hendel, PhD

ABOUT THIS BOOK

This is the most comprehensive book ever published about the history of Cargill's work with soy. It has been compiled, one record at a time over a period of 42 years, in an attempt to document the history of this interesting subject. It is also the single most current and useful source of information on this subject.

This is one of more than 100 books compiled by William Shurtleff and Akiko Aoyagi, and published by the Soyinfo Center. It is based on historical principles, listing all known documents and commercial products in chronological order. It features detailed information on:

- 45 different document types, both published and unpublished.
- 522 published documents - extensively annotated bibliography. Every known publication on the subject in every language.
- 38 unpublished archival documents.
- 69 original Soyinfo Center interviews and overviews never before published, except perhaps in our books.
- 38 commercial soy products.

Thus, it is a powerful tool for understanding the development of this subject from its earliest beginnings to the present.

Each bibliographic record in this book contains (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English language publications together with an English translation of the title, month and issue of publication, and the first author's first name (if given). For most books, we state if it is illustrated, whether or not it has an index, and the height in centimeters.

All of the graphics (labels, ads, leaflets, etc) displayed in this book are on file, organized by subject, chronologically, in the Soyinfo Center's Graphics Collection.

For commercial soy products (CSP), each record includes (if possible) the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as advertisements, articles, patents, etc.) are also given.

A complete subject/geographical index is also included.

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ABBREVIATIONS USED IN THIS BOOK

A&M = Agricultural and Mechanical
Agric. = Agricultural or Agriculture
Agric. Exp. Station = Agricultural Experiment Station
ARS = Agricultural Research Service
ASA = American Soybean Association
Assoc. = Association, Associate
Asst. = Assistant
Aug. = August
Ave. = Avenue
Blvd. = Boulevard
bu = bushel(s)
ca. = about (circa)
cc = cubic centimeter(s)
Chap. = Chapter
cm = centimeter(s)
Co. = company
Corp. = Corporation
Dec. = December
Dep. or Dept. = Department
Depts. = Departments
Div. = Division
Dr. = Drive
E. = East
ed. = edition or editor
e.g. = for example
Exp. = Experiment
Feb. = February
fl oz = fluid ounce(s)
ft = foot or feet
gm = gram(s)
ha = hectare(s)
i.e. = in other words
Inc. = Incorporated
incl. = including
Illust. = Illustrated or Illustration(s)
Inst. = Institute
J. = Journal
J. of the American Oil Chemists' Soc. = Journal of the American Oil Chemists' Society
Jan. = January
kg = kilogram(s)
km = kilometer(s)
Lab. = Laboratory
Labs. = Laboratories
lb = pound(s)
Ltd. = Limited
mcg = microgram(s)
mg = milligram(s)
ml = milliliter(s)
mm = millimeter(s)
N. = North
No. = number or North
Nov. = November
Oct. = October
oz = ounce(s)
p. = page(s)
photo(s) = photograph(s)
P.O. Box = Post Office Box
Prof. = Professor
psi = pounds per square inch
R&D = Research and Development
Rd. = Road
Rev. = Revised
RPM = revolutions per minute
S. = South
SANA = Soyfoods Association of North America
Sept. = September
St. = Street
tonnes = metric tons
trans. = translator(s)
Univ. = University
USB = United Soybean Board
USDA = United States Department of Agriculture
Vol. = volume
V.P. = Vice President
vs. = versus
W. = West
°C = degrees Celsius (Centigrade)
°F = degrees Fahrenheit
> = greater than, more than
< = less than

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HOW TO MAKE THE BEST USE OF THIS DIGITAL BOOK - THREE KEYS

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Click on the link to this book and wait for the book to load completely and the hourglass by the cursor to disappear (4-6 minutes).

Type [Ctrl+F] to "Find." A white search box will appear near the top right of your screen.
Type in your search term, such as Lauser or protein isolate.
You will be told how many times this term appears, then the first one will be highlighted.
To go to the next occurrence, click the down arrow, etc.

3. Use the indexes, located at the end of the book. Suppose you are looking for all records about tofu. These can appear in the text under a variety of different names: bean curd, tahu, doufu, to-fu, etc. Yet all of these will appear (by record number) under the word "Tofu" in the index. See "**How to Use the Index**," below. Also:

Chronological Order: The publications and products in this book are listed with the earliest first and the most recent last. Within each year, references are sorted alphabetically by author. If you are interested in only current information, start reading at the back, just before the indexes.

A Reference Book: Like an encyclopedia or any other reference book, this work is meant to be searched first - to find exactly the information you are looking for - and then to be read.

How to Use the Index: A subject and country index is located at the back of this book. It will help you to go directly to the specific information that interests you. Browse through it briefly to familiarize yourself with its contents and format.

Each record in the book has been assigned a sequential number, starting with 1 for the first/earliest reference. It is this number, not the page number, to which the indexes refer. A publication will typically be listed in each index in more than one place, and major documents may have 30-40 subject index entries. Thus a publication about the nutritional value of tofu and soymilk in India would be indexed under at least four headings in the subject and country index: Nutrition, Tofu, Soymilk, and Asia, South: India.

Note the extensive use of cross references to help you: e.g. "Bean curd. See Tofu."

Countries and States/Provinces: Every record contains a country keyword. Most USA and Canadian records also contain a state or province keyword, indexed at "U.S. States" or "Canadian Provinces and Territories" respectively. All countries are indexed under their region or continent. Thus for Egypt, look under Africa: Egypt, and not under Egypt. For Brazil, see the entry at Latin America, South America: Brazil. For India, see Asia, South: India. For Australia see Oceania: Australia.

Most Important Documents: Look in the Index under "Important Documents -."

Organizations: Many of the larger, more innovative, or pioneering soy-related companies appear in the subject index – companies like ADM / Archer Daniels Midland Co., AGP, Cargill, DuPont, Kikkoman, Monsanto, Tofutti, etc. Worldwide, we index many major soybean crushers, tofu makers, soymilk and soymilk equipment manufacturers, soyfoods companies with various products, Seventh-day Adventist food companies, soy protein makers (including pioneers), soy sauce manufacturers, soy ice cream, tempeh, soynut, soy flour companies, etc.

Other key organizations include Society for Acclimatization (from 1855 in France), American Soybean Association, National Oilseed/Soybean Processors Association, Research & Development Centers (Peoria, Cornell), Meals for Millions Foundation, and International Soybean Programs (INTSOY, AVRDC, IITA, International Inst. of Agriculture, and United Nations). Pioneer soy protein companies include Borden, Drackett, Glidden, Griffith Labs., Gunther, Laucks, Protein Technologies International, and Rich Products.

Soyfoods: Look under the most common name: Tofu, Miso, Soymilk, Soy Ice Cream, Soy Cheese, Soy Yogurt, Soy Flour, Green Vegetable Soybeans, or Whole Dry Soybeans. But note: Soy Proteins: Isolates, Soy Proteins: Textured Products, etc.

Industrial (Non-Food) Uses of Soybeans: Look under "Industrial Uses ..." for more than 17 subject headings.

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Pioneers - Individuals: Laszlo Berczeller, Henry Ford, Friedrich Haberlandt, Artemy A. Horvath, Englebert Kaempfer, Mildred Lager, William J. Morse, etc. Soy-Related Movements: Soyfoods Movement, Vegetarianism, Health and Dietary Reform Movements (esp. 1830-1930s), Health Foods Movement (1920s-1960s), Animal Welfare/ Rights. These are indexed under the person's last name or movement name.

Nutrition: All subjects related to soybean nutrition (protein quality, minerals, antinutritional factors, etc.) are indexed under Nutrition, in one of more than 70 subcategories.

Soybean Production: All subjects related to growing, marketing, and trading soybeans are indexed under Soybean Production, e.g., Soybean Production: Nitrogen Fixation, or Soybean Production: Plant Protection, or Soybean Production: Variety Development.

Other Special Index Headings: Browsing through the subject index will show you many more interesting subject headings, such as Industry and Market Statistics, Information (incl. computers, databases, libraries), Standards, Bibliographies (works containing more than 50 references), and History (soy-related).

Commercial Soy Products (CSP): See "About This Book."

SoyaScan Notes: This is a term we have created exclusively for use with this database. A SoyaScan Notes Interview contains all the important material in short interviews conducted and transcribed by William Shurtleff. This material has not been published in any other source. Longer interviews are designated as such, and listed as unpublished manuscripts. A transcript of each can be ordered from Soyinfo Center Library. A SoyaScan Notes Summary is a summary by William Shurtleff of existing information on one subject.

"**Note**:" When this term is used in a record's summary, it indicates that the information which follows it has been added by the producer of this database.

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3. An asterisk in a listing of the number of references [23* ref] means that most of these references are **not** about soybeans or soyfoods.

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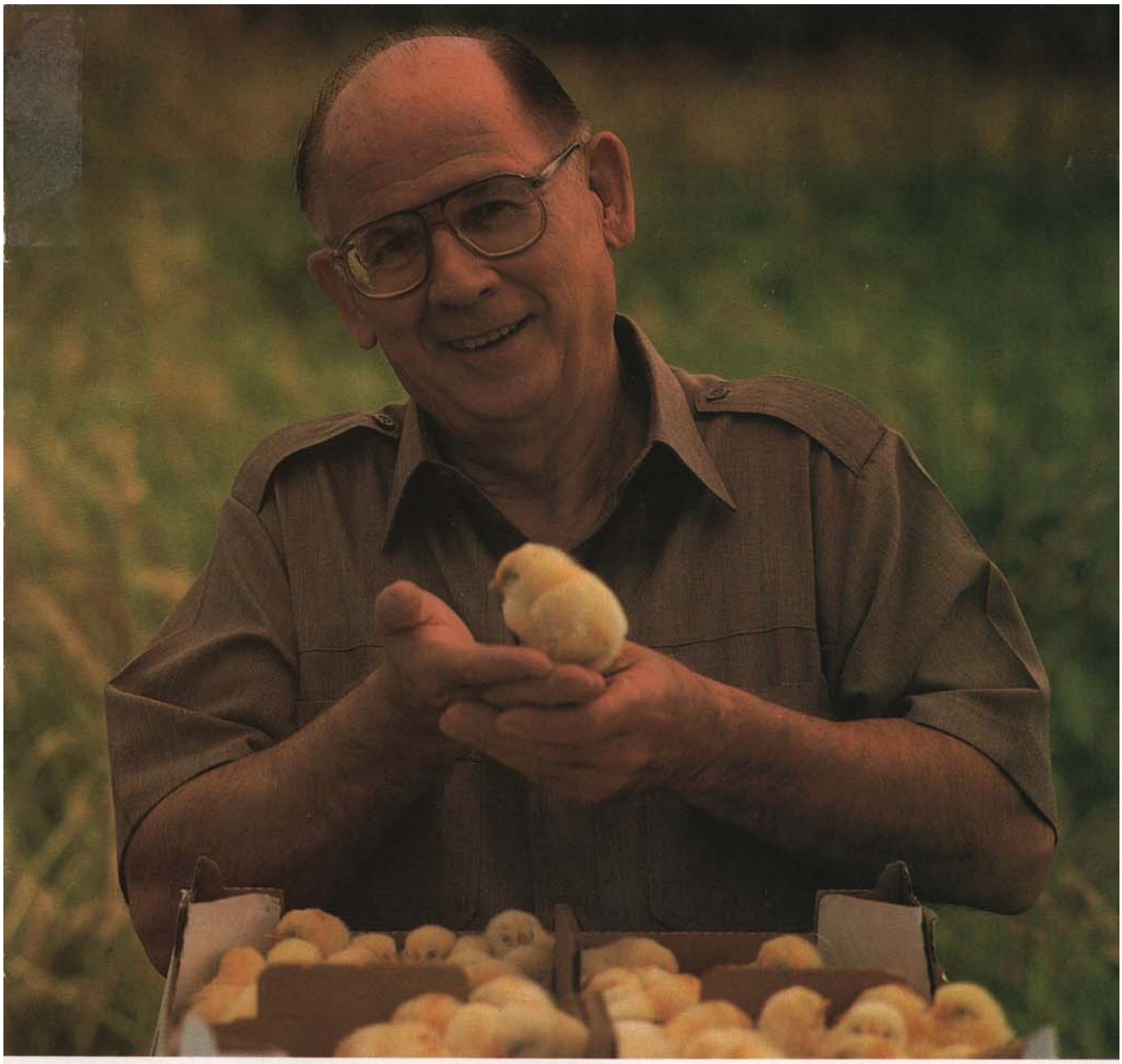
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How Cargill built a foreign market for U.S. soybeans by starting a chicken business from scratch.

Several years ago, Cargill saw a way to create a new market for soybean meal in Indonesia. Cargill sent one of its managers, Parky Parkinson, there to build a facility for raising chickens. It started out small, but today Cargill raises 4 million chickens a year in Indonesia. And they eat a lot of soybean meal. Where's Parky now? He's gone to Thailand to open up another market for U.S. soybeans by starting another chicken business…from scratch.

CARGILL

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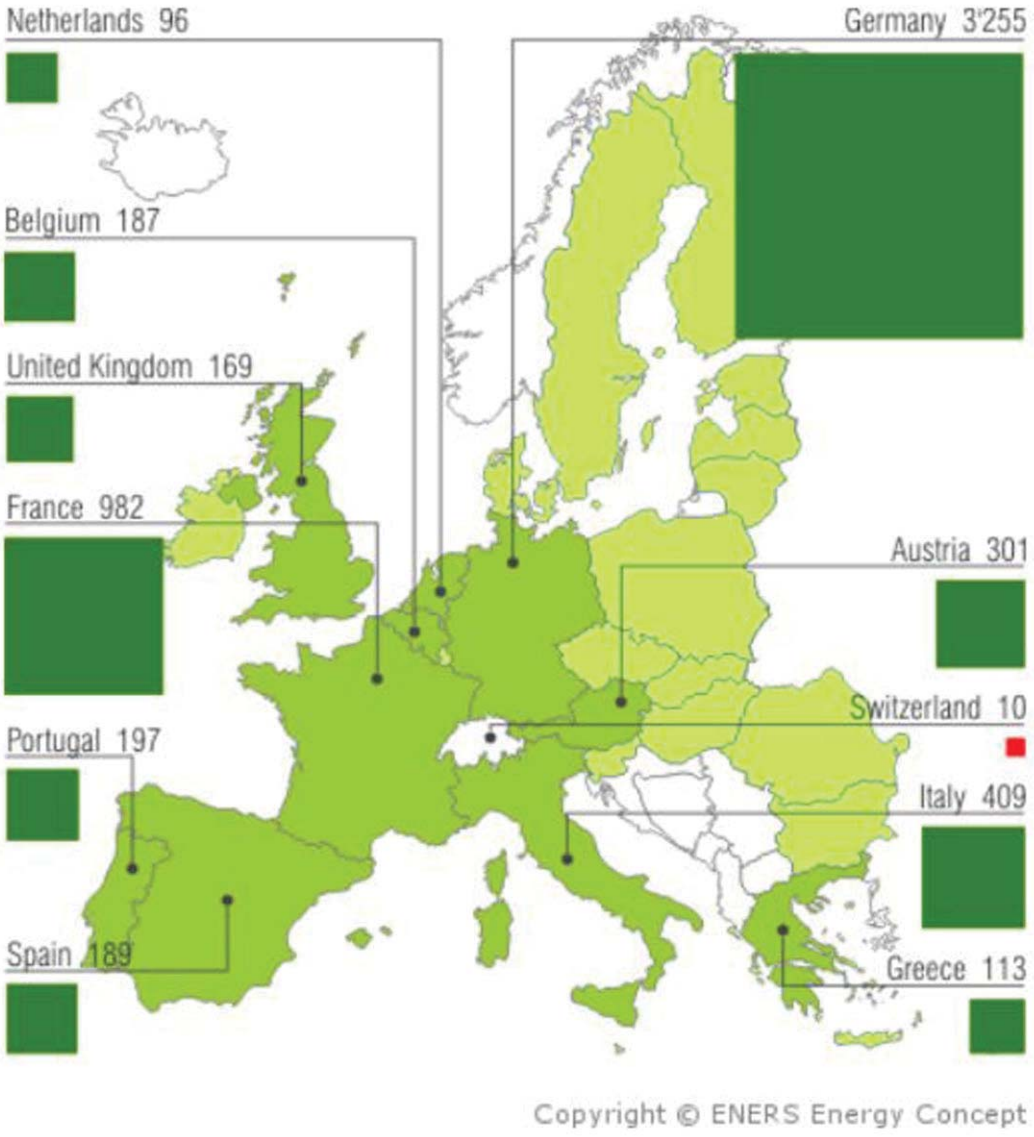


How Cargill is helping develop a huge market for U.S. soybean oil.

What better place to market soybean oil than a country with 742,000,000 hungry mouths? That's exactly what prompted Cargill to send a representative to India. We're trying to convince government leaders that soybean oil is an inexpensive way to add needed calories to the nation's diet. If we're successful in raising India's oil consumption, it could open up a market for nearly 40 billion pounds. One more way Cargill keeps working to find more markets for your products.

CARGILL

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Biodiesel Production in Europe - Location of Plants

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SOYINFO CENTER

World's Most Complete Collection of Soy Information

Founded 1976 SoyaScan Databases Publishing Consulting Research Library

INTRODUCING SOYINFO CENTER

Mission: To be the world's leading source of information about soyfoods and utilization of soybeans in both printed and electronic formats. Much of our information is **free**!

Founding: In October 1972 William Shurtleff and Akiko Aoyagi began full-time research on soyfoods in Japan while writing *The Book of Tofu*. In August 1976 they founded Soyinfo Center (named Soyfoods Center until 2006) in California.

Books in Print: 100+ books on soyfoods and soybeans by Shurtleff and Aoyagi are presently in print. These include three popular books, market studies, and 70 comprehensive histories & bibliographies.

Book Sales: These books have presently sold more than 830,000 copies. Our best-selling book is *The Book of Tofu*.

SoyaScan Database: SoyaScan is the world's most comprehensive computerized database on soybeans and soyfoods. It presently contains 108,700+ records from 1100 B.C. to the present. These include four basic types of records providing detailed information on: 92,300+ published documents, 16,700+ commercial soy products, 6,300+ original interviews and overviews, and 8,300+ unpublished archival documents. These records are unique, and have been added one at a time over many years; none have been downloaded from other databases. A *Thesaurus* of our database is available.

Free Books on Google Books: At least 80+ of our history books and biographies are available free in digital PDF format on Google Books. The same books are also available on our website (see dropdown upper right).

Focus of SoyaScan Database: In descending order of importance: Soybean utilization (for both food and industrial uses), history, market statistics, processing, nutrition, technology, marketing, and soybean production (agriculture).

How to Use the SoyaScan Database: This database is very easy to use. You do not need a computer or any special skills. Simply call the Soyinfo Center and discuss the information you need with our specialists.

Website: At www.soyinfocenter.com you will find basic information about us, entire free online reference books, a photo gallery, 1,500 pages of our manuscript history of soybeans and soyfoods (free), a thesaurus to subject headings in our database, information on ordering of all our popular printed books, etc.

Research Library: The Soyinfo Center Library owns about 98,500 documents, almost all of which have a record in the SoyaScan database. Available for use by researchers with an appointment.

Consulting Services: William Shurtleff has been serving as a consultant to the soyfoods industry for more than 25 years. He probably has more personal contacts in this field, worldwide, than anyone else in the world. He has helped to start more than 450 new companies.

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HISTORY OF CARGILL'S WORK WITH SOYBEANS AND SOY INGREDIENTS (1940-2020)

1. McCoy's Cedar Rapids city directory. 1934. Cedar Rapids, Iowa. See p. 52.
• ***Summary:*** The personal listing for Cargill (p. 52) states: "Cargill Commission Co., J.E. Zednichek mgr., 525 Merch Nat Bk Bldg [Merchants National Bank Building].

Note 1. This is the earliest listing seen for Cargill in Cedar Rapids.

The next year, in the 1935 directory, the entry has changed slightly (p. 55). "Cargill Grain Co., J.E. Zednichek repr., 520 Merch Nat Bk Bldg [Merchant's National Bank Building].

In 1936 (p. 65), the entry is the same as in 1935. Address: Cedar Rapids, Iowa.

2. Jaccard, R.B. 1940. History and development of soybeans. *Cargill Crop Bulletin* 15(1):32-35. Jan. 24.
• ***Summary:*** Contents: Introduction. American introduction (in 1804). Distribution. Climatic adaptations. Utilization (a chart shows all known uses of the soybean plant, the meal, oil, green bean, and dried bean). 1939 soybean production. Table of soybean acreage for all purposes (by state, 1928-37, 1938, 1939; grown alone, interplanted, equivalent solid). Table of soybeans grown for beans (by state, 1928-37, 1938, 1939; acreage harvested, yield per acre, production).

"In the Civil War, with England in control of the seas, coffee was limited by the blockade and Union soldiers were fed a coffee substitute made from soybeans smuggled in. This tasted like coffee but did not stimulate or keep soldiers awake."

"Utilization.–Perhaps some of the rapid increases in popularity of the soybean is due to recent discoveries of industrial uses and as a source of food. Oil products are increasingly in demand for industrial uses. Meal is rapidly becoming popular in feeding operations and extract are used in human consumption in many forms." A diagram (p. 33) by R.B. Jaccard shows soybean utilization.

Note: This is the earliest document seen (July 2020) that mentions Cargill in connection with soybeans. Cargill first began crushing soybeans in 1943. Address: Field Representative, Cargill Crop Bulletin.

3. Walsh, R.M. 1940. Soybeans–New problem: Increasing the supply of food fats and oils. *Cargill Crop Bulletin* 15(4):34-35. April 24.
• ***Summary:*** The rapid increase in soybean production during the past six years has materially increased the domestic surplus of edible fats and oils, and has been an important factor depressing prices of lard and cottonseed oil. Between 1924 and 1933 soybean acreage doubled, from 2 million to 4 million acres, increasing to about 10 million acres harvested in 1939. But the volume of soybeans harvested increased from 5 million bushels in 1924, to 13 million bushels in 1933, jumping to 87 million bushels in 1939.

"Although the soybean is a legume, it is considered under the Agricultural Conservation Program to be soil-depleting in the North Central and Western States when the beans or seeds are allowed to ripen and are harvested. The plant is considered nondepleting when used for other purposes. It has distinct soil-building characteristics when plowed under as a green-manure crop. Beginning in 1936, the Agricultural Adjustment Administration [AAA] has encouraged this practice by including it as one basis for making conservation payments to farmers..." Address: Agricultural Statistician.

4. *Year Book and Trading Rules.* 1941-1988. Serial/periodical. National Soybean Processors Association. Annual. First volume titled Year Book, 1947-48. 68 pages. Published in Chicago. Later published in Washington, DC.
• ***Summary:*** Succeeded by Yearbook and Trading Rules. The first issue of this periodical, for 1941-42, was titled "Year Book." Issued annually to all members of the association in about October of each year. The 1981-82 Yearbook, for example, was spiral bound and 23 cm high. Address: 1800 M. St., N.W., Washington, DC 20036.

5. Hayward, J.W.; Hayward, Mrs. J.W. 1942. Soy bean serenade. *Cargill News* (*Minneapolis, Minnesota*). June. p. 32.
• ***Summary:*** This poem, well known by now, begins: "Little Soy Bean who are you / From far off China where you grew." Cargill reprinted it from the *Wall Street Journal.* It first appeared in Aug. 1940 in the *Proceedings of the American Soybean Assoc.* (p. 6).

6. *Cargill News* (*Minneapolis, Minnesota*). 1943. Cargill buys soybean mill and feed plant. Jan. p. 2.
• ***Summary:*** This month Cargill's Feed Department announced the purchase of the soybean crushing mill and feed plant of the Iowa Milling Co. in Cedar Rapids, Iowa.

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The complex contains the crushing mill, feed mill, elevator storage, and warehouse space. Because of wartime needs, Cargill's feed business is expanding rapidly; this step was taken to insure the reliable flow of raw materials.

Note: The Iowa Milling Co. had been started and run by Joe Sinaiko and relatives.

7. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Cedar Rapids, Iowa.
Date of Introduction: 1943 March.
Ingredients: Soybeans.
New Product–Documentation: Smith, W.D. 1943. "Cedar Rapids, Iowa." *Cargill News* (Minneapolis, Minnesota). Jan. p. 13-14. "As was announced in the January *News* we [Cargill] now own and operate the soybean crushing and mixing feed plant formerly owned and operated by the Iowa Milling Co.," at Cedar Rapids. "Elmer Engberg is manager of operations, ably assisted by Lawrence (Larry) Hauskins."

8. Smith, W.D. 1943. Cedar Rapids, Iowa. *Cargill News* (*Minneapolis, Minnesota*). Jan. p. 13-14.
• ***Summary:*** "As was announced in the January *News* we [Cargill] now own and operate the soybean crushing and mixing feed plant formerly owned and operated by the Iowa Milling Co.," at Cedar Rapids. Elmer Engberg is manager of operations, ably assisted by Lawrence (Larry) Hauskins." Others at the mill include Harvey Maxhausen, Alice Speveck, Mary Jane Gordon, Goldena Greenblatt, Selma Berg, and Bill Mackey, Superintendent of the mill. Peter Schmelz is in charge of feed sales, assisted by Virgil Haight.

In Cargill's "uptown grain office" are W.D. Smith, Betty Kinkead, Maxine Wagner Sell and Jessie Benson.

"During the past month we were pleased to welcome as visitors from Minneapolis Messrs. J.H. MacMillan, Jr., Cargill MacMillan, Ralph Golseth, Art Lundgren, Jim Hayhoe and Fred Seed. Previous visitors during negotiations for the mill were Julius Hendel, Rudy Semsch, Lee Canterbury, John Rockwell, Erling Mostue, John Sorensen and Joe Bailey, as well as a former visit by Lundgren, Hayhoe and Seed..."

9. Cargill, Inc. 1943. We salute members of the American Soybean Association who attended the annual convention in Cedar Rapids, Iowa, September 5, 6, 7 (Ad). *Soybean Digest.* Sept. p. 4.
• ***Summary:*** A ¼ page ad. Address: Minneapolis, Minnesota.

10. *Soybean Digest.* 1943. 250 attend the War Conference: Cedar Rapids, Iowa, Sept. 5-7. Sept. p. 6-7, 34.
• ***Summary:*** "Resolutions on soy flour and margarine. Announcement of government's marketing programs. Speeches by Miller, Spry, Morse, Schultz, Kishlar, Iftner, Lloyd, Klein, Goss, Hollett, Rhoades and Berger in this issue. Food and Drug Administration not represented.

"The War Conference or 23rd annual convention of the American Soybean Association, at Cedar Rapids, Iowa, September 5-7, brought 250 growers handlers, processors, governmental agents and other representatives of the soybean industry together for sessions that were highlighted by announcement of governmental soybean marketing and oil meal distribution programs, by resolutions condemning the Pure Food and Drug Administration's soy flour ruling and urging the repeal of federal taxes on margarine, and by thorough discussions of many other aspects of wartime problems confronting soybeaners.

"The annual dinner held the evening of September 6 featured delicious soy foods in addition to old-fashioned Iowa cornfed beef. A large share of the crowd stayed over until the next days for the tours of Cedar Rapids processing plants, which included the soybean mills of Honeymead Products Co. and Cargill, Inc., and in addition the Quaker Oats Co. mill and the corn processing plant of Penick & Ford [see photos of mills, Honeymeade p, 8 and Cargill p. 9].

"As suggested by speaker Walter Berger, all of us hope that the day is not far distant when the soybean get-together will be filled with jovial stories, laughter and the hilarity of old times. But not this year. This is war. The conference was a serious occasion.

"For president, J.E. Johnson, Champaign, Illinois, succeeded David G. Wing, Mechanicsburg, Ohio, who has headed the organization efficiently for the past two years, while Johnson has served as vice-president. Howard Roach, Plainfield, Iowa, was elected vice-president. George M. Strayer, Hudson, Iowa, and J.B. Edmondson, Clayton, Indiana, were reelected secretary and treasurer respectively.

"John Dries, Saukville, Wisconsin; Jacob Hartz, Stuttgart, Arkansas; and Ersel Walley, Fort Wayne, Indiana were reelected directors. New members to the board were Wing, the retiring president; Walter McLaughlin, Decatur, Illinois; John Sand, Marcus, Iowa; and Roy Monier, Carrollton, Missouri.

"G.H. Banks, Osceola, Arkansas was chairman of the committee on nominations, Howard Roach on resolutions.

"The *Digest* is fortunate in being able to carry all formal speeches given at the Conference, many of them virtually complete, in this issue. Report of Secretary, 1942-43 Fiscal Year:

"I will not attempt this evening to give you a detailed report of the operations of the American Soybean Association during the past year. Those of you who are readers of the Soybean Digest are familiar with what has taken place. I would like to review the main projects which have been carried on during the year and to give my evaluation of them.

"There has been greatly renewed interest in the food uses of soybeans and soybean products during the past year. Many new products have been offered on the commercial

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market. Because of the curtailment of supplies of many products, manufacturers have been looking for new lines. A large amount of attention has been focused on soybeans and soybean products by popular magazine articles. The inquiries received in the central office as a result of these have required a large amount of time for replies. Hectic Year

"The past marketing year has probably been the most hectic in the history of the American Soybean Association. The acreage of beans was the largest, by almost twice, ever produced in this country. The. extremely early frost created problems never before experienced. That frost together with operation under the governmental purchase programs taxed the ingenuity of the entire industry.

"One of the most important jobs confronting the American Soybean Association during the year was that of urging Commodity Credit Corporation and governmental grading officials to make adjustments in their grading program to allow for frost or green damage and enable the producer to receive the actual valuation of the bean, rather than the valuation established by previously determined irrelevant standards. One the editorial pages of *Soybean Digest* we consistently pointed out the necessity of adjusting the CCC program to allow for current developments. In the year which has intervened most all of our suggestions have been followed, in all or in part. Soybean growers have been consulted in the planning councils and have had a part in the development of the 1943 marketing program for soybeans.

"During the winter and early spring months we consistently expressed the importance of proper inoculation of soybeans in order that we might produce the greatest number of bushels on limited acreage with the limited labor supplies available. AAA officials and inoculation manufacturers tell us that the demand for soybean inoculation in 1943 was far above that of any previous year. The yields should be likewise.

"Severe Standards:

"Feeling that the standards which were established for the marketing of the 1942 crop of beans were still too severe on matters of green damage and field damage, we advocated revision of those standards. The 1943 program which will be announced here at this meeting includes the revision of discounts for both green damage and field damage. We feel this to be one of our outstanding accomplishments of the year and this was possible only through the cooperation of such agencies as the Illinois Agricultural Association, the various state extension services and agronomy departments and CCC.

"At the present time we have on our hands one of the most serious battles with which we have ever been confronted. For some unknown reason the Food and Drug Administration of the Federal Security Agency has ruled that soy flour can not be used in bread in excess of ½ of 1 percent. Many bakeries have been using greater percentages than this with marked success. Many industries, because of the emphasis upon balanced foods and the shortage of protein supplies, have been considering the use of soy flour.

"This field is one which is just now opening up and which shows promise of providing huge markets for soy flour both during and after the war. *However, the Food and Drug Administration must be prevailed upon to change their ruling or we may as well cross this major market for soybeans off our list.* The fight has only begun, and it may demand the assistance of the entire American Soybean Association membership before it is finished. The members of the board of directors have been extremely busy contacting members of Congress and governmental agencies concerning this ruling.

"A year ago I informed you that we had turned our advertising solicitation over to the Ewing Hutchison Company in Chicago. The lineage of advertising carried during 1943 has been greater in every issue than during the previous year. The September issue, carrying the reports of this convention, will have twice as many pages of advertising and will be twice as large as any issue of the *Digest* we have ever published. It appears that if governmental curtailment of paper supplies does not hit us too hard we should be in a position to continue during 1943-44 with increasingly large schedules. We have been very pleased with our relationships with the Ewing Hutchison Company.

"The Problem

"The big problem confronting the American Soybean Association is the same as that which has confronted it in each of the last several years–adequate membership. To truly represent the soybean growers of America we should have the major proportion of them among our membership. Last year I told you that an active paid membership of 25,000 growers was not an impossibility. If we are to be an effective organization we must work out some plan to increase the membership solicitation plan which will enable the American Soybean Association to represent all soybean growers and thus be influential in its accomplishments. We must provide sufficient members to finance that type of program. The 1943-44 year is the one in which that plan should he formulated and carried through.

"Respectfully submitted, Geo. M. Strayer, Sec'y American Soybean Ass'n.

"Business Meeting:

"Minutes, of the Annual Business Meeting of the American Soybean Association, September 5, 1943

"The meeting was called to order in the Ballroom of Hotel Montrose at Cedar Rapids, Iowa, at 9:15 p. m. by President Wing. Secretary, Geo. M. Strayer, introduced by the president, made series of announcements concerning the next day's convention activities, read his annual report and the financial statement. The minutes of the last annual meeting, held at Purdue University on September 16, 1942 were read and approved.

"President Wing complimented Mr. Strayer upon his

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handling of the Association's affairs during the year just ended, including his editorship of the *Soybean Digest.*

Mr. Banks, chairman of the nominating committee, submitted a slate of officers for the next year as follows: President, J.E. Johnson; Vice President, Howard Roach. Secretary, Geo. M. Strayer; Treasurer, J.B. Edmondson. (Continued).

11. *Fort Dodge Messenger and Chronicle* (*Iowa*). 1943. Plymouth mill sold today to Minneapolis co. Oct. 13. p. 1. Evening.
• ***Summary:*** "Sale of the Plymouth Processing Mills of Fort Dodge to Cargill, Incorporated, of Minneapolis [Minnesota], was announced here late this afternoon by L.E. Armstrong, vice president of the Plymouth company. The deal involves all the Plymouth properties, including the soybean mill, elevator, feed plant, office building, and includes property recently purchased by the Plymouth company from the Quaker Oats company." Cargill will continue to operate the plant and retain all present Plymouth employees, including C.J. Simmons, Plymouth manager.

The sale severs Mr. Armstrong's ties to the company, which his father, the late L.E. Armstrong, established some years ago. "The consideration [amount of money] involved in the sale of the Plymouth plant was not made public."

12. *Fort Dodge Messenger and Chronicle* (*Iowa*). 1943. New Plymouth owners operate in a wide field. Oct. 14. p. 6. Evening.
• ***Summary:*** Cargill's enterprises range from "stock feed manufacture to construction of tankers for the government. The Plymouth plant here engaged in the processing of soybean oil, manufacture of stock feed, and a brokerage business in grains, all of which will be continued by the new owners..."

Plymouth Processing mills "was established in 1936 by the late L.E. Armstrong and continued by his family after his death. The new owners, the Cargill company, own two soybean plants, 11 feed mills, 29 large grain elevators, as well as a number of smaller ones, and other enterprises spread through the east and midwest. They also build tankers in a shipyard on the Minnesota river at Savage, Minn., now under government contract."

Plymouth mill is located on about 3 acres of land at the west end of Central avenue. Its elevators have a capacity of several hundred thousand bushels of grain. L.E. Armstrong began processing "soybeans in 1936 in a plant formerly housing the Plymouth Gypsum company at the southeast outskirts of Fort Dodge. It was moved to its present location following a fire in 1939."

"C.J. Simmons, manager of the mill under Plymouth ownership, will continue in that capacity for Cargill, Inc..."

Note: Savage, Minnesota, is a village in Scott Co., about 9 miles (14 km) south of Minneapolis, near the Minnesota River. Port Cargill is about 0.6 miles away on the Minnesota River.

13. *Decatur Daily Review* (*Decatur, Illinois*). 1943. Bean plant sold at Springfield. Oct. 27. p. 16.
• ***Summary:*** "Springfield (AP)–Sale of the Illinois soy products company plant and property at Springfield to Cargill, Inc., Minneapolis, Minnesota, was announced last night by I.D. Sinaiko, president and manager of the local firm since it was established in 1935. Details of the transaction were not disclosed.

"The plant has a processing capacity of a million bushels of soybeans a year."

14. *Illinois State Journal* (*Springfield*). 1943. Minneapolis firm buys local plant: Illinois Soy Products Co. purchased by Cargill, Inc.; will continue business. Oct. 27. p. 1, 2, 7.
• ***Summary:*** The sale of the Illinois Soy Products Co. plant and property (East Sangamon avenue, northeast, in Springfield) to Cargill, Inc. (Minneapolis, Minnesota) was announced late yesterday afternoon by I.D. Sinaiko, manager of the firm. Mr. Sinaiko established the company in 1935 (he became president and manager) with his brother, A.A. Sinaiko of Chicago, H. Fred Brunsell of Evansville, Wisconsin, and Carl A. Sorling of Springfield, Illinois, as officers and directors. They acquired the old Peerless elevator property south of the stockyards and started processing with three expellers, later increasing to five.

On 14 Feb. 1940 the plant was destroyed by fire. Shortly thereafter the present new and modern plant was constructed–one of the finest expeller processing plants of its size.

Today, the plant's four grain tanks have a total storage capacity of 200,000 bushels of soybeans. The plant, which has a processing capacity of more than one million bushels of soybeans per year, operates continuously except for brief periods for machinery repair and maintenance.

Cargill, a large grain company with headquarters at 761 Chamber of Commerce (Minneapolis), entered the feed business several years ago.

A large photo (p. 2) shows the Illinois Soy Products Co. elevators, plant, railroad siding, and many cars parked by the tracks.

15. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Fort Dodge, Iowa.
Date of Introduction: 1943 October.
Ingredients: Soybeans.
New Product–Documentation: *Cargill News* (Minneapolis, Minnesota). 1943. "Two soybean plants acquired by Cargill." Oct. Effective 13 Oct. 1943, Cargill, Inc., purchased the Plymouth Processing Mills of Fort Dodge, Iowa, consisting of a soybean mill, an elevator, a feed plant, and an office

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building. Mr. C.J. Simmons will continue as manager and all former employees will be retained.

Cargill News (Minneapolis, Minnesota). 1943. "Cargill's crushing business: Greatly expanded last month." Nov. p. 3-5. "Cargill took possession and started operating the Fort Dodge plant on Oct. 13. The entire business and facilities of the Plymouth Processing Company were purchased."

16. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Springfield, Illinois.
Date of Introduction: 1943 October.
Ingredients: Soybeans.
New Product–Documentation: *Cargill News* (Minneapolis, Minnesota). 1943. "Two soybean plants acquired by Cargill." Oct. Several days ago, Cargill announced the purchase from the Illinois Soy Products Company of their soybean plant, elevator, and office building at Springfield, Illinois.

Cargill News (Minneapolis, Minnesota). 1943. "Cargill's crushing business: Greatly expanded last month." Nov. p. 3-5.

Springfield, Illinois: On 21 Oct. 1943 Cargill bought the plant and property of the Illinois Soy Products Co. The entire personnel of the office and plant was retained by Cargill, with the exception of the former manager. Mr. Eric Nadel is acting manager, assisted by a staff of three.

17. *Cargill News* (*Minneapolis, Minnesota*). 1943. Two soybean plants acquired by Cargill. Oct. p. 16.
• ***Summary:*** Effective 13 Oct. 1943, Cargill, Inc., purchased the Plymouth Processing Mills of Fort Dodge, Iowa, consisting of a soybean mill, an elevator, a feed plant, and an office building. Mr. C.J. Simmons will continue as manager and all former employees will be retained.

Several days ago, Cargill announced the purchase from the Illinois Soy Products Company of their soybean plant, elevator, and office building at Springfield, Illinois.

Note 1. This is the earliest document seen (July 2020) that mentions a soybean processing plant in Fort Dodge, Iowa. It is also the earliest document seen (July 2020) that mentions Plymouth Processing Mills, which was started in 1936 in Fort Dodge as a soybean crushing plant.

Note 2. Illinois Soy Products Company was formerly run by Ike Sinaiko.

18. *Cargill News* (*Minneapolis, Minnesota*). 1943. Cedar Rapids feed & oil plant. Nov. p. 7.
• ***Summary:*** The article begins: "Oh dem golden soybeans! Oh dem golden soybeans! This is truly a golden street, with the steady procession of trucks down Sixth street these past few weeks bearing the biggest and best beans in history to our crushing plant at the foot of the hill." The plant superintendent is W.T. Mackey. The mill underwent a complete overhaul during October and is now running day and night at increased capacity. "H.M. (His Majesty) Marxhausen took a short jaunt to Fort Dodge where he assisted in getting things established the 'Cargill Way.'" Signed: Selma and Alice.

19. *Cargill News* (*Minneapolis, Minnesota*). 1943. Soybean production 1942: Location of Cargill plants (Map). Nov. p. 2.
• ***Summary:*** On the map showing soybean production, each dot equals 50,000 bushels. Cargill's three soybean crushing plants are located in the heart of soybean production country, at Fort Dodge, Iowa, Cedar Rapids, Iowa, and Springfield, Illinois.

20. *Cargill News* (*Minneapolis, Minnesota*). 1943. Cargill's crushing business: Greatly expanded last month. Nov. p. 3-6.
• ***Summary:*** Gives details on Cargill's three newly acquired plants. Fort Dodge, Iowa: Cargill took possession and started operating this plant on Oct. 13. This plant is managed by Mr. C.J. Simmons, who has a staff of five that work in the administrative building. The are 23 employees at the plant, under the guiding hand of Mr. Francis J. Hanson, superintendent. The elevator has a capacity of 623,000 bushels, and is equipped for receiving and shipping by rail and truck. The oil processing plant contains four French Screw Presses, with a combined capacity of about 3,100 bushels/day of soybeans. Full operation results in an output of approximately 75 tons of soybean oil meal per day and a tank car (60,000 lbs.) of crude soybean oil every 2¼ days. Soybean oil has many uses, including salad oils, cooking oils, oleomargarine, paint, soap, printing ink, linoleum and oilcloth. The feed mill has a grinding capacity of roughly 40 tons/day of feed. Photos show: (1) C.J. Simmons, seated. (2) General view of plant. (3) Aerial view of "storage silos and tanks." (4) Elevator workhouse. (5) Administrative building. (6) Soybean processing plant.

Springfield, Illinois: On 21 Oct. 1943 Cargill bought the plant and property of the Illinois Soy Products Co. The entire personnel of the office and plant was retained by Cargill, with the exception of the former manager. Mr. Eric Nadel is acting manager, assisted by a staff of three. Mr. Selie Schlesinger is superintendent of the plant, which employs about 20 men. The reinforced concrete elevator has a storage capacity of 220,000 bushels, with facilities for unloading from boxcar or truck, and shipping by rail, as well as the necessary cleaning and conditioning machinery. The crushing plant contains five Anderson Super Duo Expellers, with a capacity of about 3,900 bushels/day. Though the plant does not include a feed mill, Cargill feeds will be merchandised from this point, as well as from Fort Dodge and Cedar Rapids. A photo shows the elevators and soybean plant at Springfield.

Note: This is the earliest English-language document seen (Sept. 2003) that contains the term "screw presses" (or "screw press") in connection with mechanical pressing of

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soybeans to give oil and meal (one of two documents). It is also the earliest English-language document seen (Sept. 2003) that contains the term "French Screw Presses" (or "French Screw Press") in connection with mechanical pressing of soybeans.

21. *Soybean Digest.* 1943. Expand processing output: New mills going up. Nov. p. 13.
• ***Summary:*** "Priorities which will increase national soybean processing capacity by between 18 and 20 million bushels... have been approved by War Production Board, William McArthur, director of the grain division of Commodity Credit Corporation, has announced.

"Priorities are for 33 plants, both new, and for expansion in existing facilities. These include 18 plants in Iowa, 5 in Illinois, 2 in Indiana and Kansas, and 1 each in New York, Kentucky, South Dakota, Minnesota, Ohio and Nebraska.

"General Mills, Inc., has exercised its option to purchase properties of the American Crystal Sugar Co., Belmond, Iowa, to be converted into a soybean processing plant... Operation of the new plant will to be under the direction of Whitney Eastman, recently appointed president of the vegetable and protein division of General Mills."

"Muscatine Processing Corporation, Muscatine, Iowa, plans to go into operation with its three-expeller plant December 1. Estimated production will be about 75 tons per day. S.G. Stein is president and treasurer of the company, G.A. Kent vice president and secretary.

"The first South Dakota soybean mill is being established in Sioux Falls by the Sioux Falls Rendering Company" It will begin operation in early 1944 under the name Western Soybean Mills–according to E.A. Woodward, manager. Capacity will be about 2,200 bushels/day, with "storage capacity of 75,000 bushels. Equipment will include two Anderson duo high speed expellers, one low speed expeller and one Anderson drier. The mill will also be equipped for handling flaxseed.

"Joseph Sinaiko, well known soybean processor of the Middle West, has purchased the plant of Mid-Continent Vegetable Oil Co., Galesburg, Missouri. The plant, previously owned by a firm in Kansas City, is in an interior town without railroad facilities, but it is near Carthage, Missouri, in the center of a rich feeding belt. Joe is also installing equipment for a soybean processing plant at Fairfield, Iowa. He was a pioneer in Iowa soybean processing, having begun at Cedar Rapids in 1929.

"Standard Soybean Mills at Centerville, Iowa, has been purchased by Pillsbury Feed Mills of Clinton, a division of Pillsbury Flour Mills Company...

"Cargill, Inc., Minneapolis, has purchased the soybean plant of the Illinois Soy Products Co., at Springfield, Illinois, formerly owned by the Sinaiko interests. The plant... has a capacity of about 100 tons of meal daily.

"Cargill has also bought the soybean plant, feed mill and grain elevator of the Plymouth Processing Company at Fort Dodge, Iowa... With the Cedar Rapids plant, Cargill now has a soybean meal capacity of about 280 tons daily."

"Williams Milling Co., Sac City, Iowa, has priorities on two Anderson expellers and plans to begin operations this winter in a cement block building adjoining the company's elevator and formerly used by a power company. The company has grain storage capacity of 105,000 bushels. Leo W. Williams will continue as general manager.

"Lord Grain Co. has taken possession of the Nikles Soybean Mills, Inc., at Kansas City."

Note 1. This is the earliest document seen (Dec. 2010) that mentions General Mills in connection with soybeans. The company soon opened a soybean crushing plant in Belmond, Iowa.

Note 2. This is the earliest document seen (June 2001) that mentions Pillsbury in connection with soybeans.

22. Cargill, Inc. 1944. Feed is food! Make it count (Ad). *Soybean Digest.* March. p. 24.
• ***Summary:*** "In the interest of protein conservation, Cargill is telling farmers 'Feed best where it counts most.' These Cargill Soybean Plants are working to productive capacity: Springfield, Illinois. Cedar Rapids, Iowa. Ft. Dodge, Iowa." An illustration shows a smiling butcher holding up a ham and two dead chickens (by the feet; heads downward). Address: Main offices: Minneapolis, Minnesota.

23. *Soybean Digest.* 1944. Iowa processors hold forth at Ames. March. p. 10.



• ***Summary:*** "About 40 soybean processors of Iowa and surrounding states and others connected with the processing industry attended the first annual Iowa Soybean Processors' Conference held at Iowa State College March 9. Dr. H.D. Hughes, head of the Farm Crops Department of the college, was chairman of the conference. Papers presented by members of the college staff covered studies of the agronomic and economic phases and work with the solvent extraction process. Speakers included Dr. Hughes; I.J. Johnson, crop breeding; C.R. Weber, assistant agronomist,

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United States Department of Agriculture; A.I. Englehorn, soils; W.H. Pierre, professor of agronomy; L.K. Arnold, chemical engineering department; E.L. Barger, agricultural engineering research; and C.E. Malone, farm management specialist.

"Other speakers included Edward J. Dies, president of the National Soybean Processors Association, Chicago; Lamar Kishlar, president of the Oil Chemists' Association, St. Louis; and Howard Roach, vice president of the American Soybean Association, Plainfield, Iowa.

"Some of the papers presented at the Iowa conference are published in this issue. It is hoped to carry more of them in later issues.

"The processors 'kicked off' with a dinner at the Sheldon-Munn hotel the evening before the conference, and organized the Iowa Soybean Processors Association. The 31 soybean processors in the state are members. Donald B. Walker, manager of the Iowa Falls plant of the Ralston Purina Co., was elected president of the Association. It is planned to make the conference an annual affair to enable the industry to keep in close touch with the work being conducted at the college.

"Those present: Representatives of processing companies who attended the meeting included: Don Edison, Farmers Grain Dealers Association, Fort Dodge, Iowa; Ralph Wells, Ralph Wells and Co., Monmouth, Illinois; H.R. Straight, Iowa Soya Co., Redfield; Howard L. Roach, J. Roach Sons, Inc., Plainfield; L.O. Hauskins, Cargill, Inc., Cedar Rapids;

"R.W. Jurgins, West Bend Elevator Co., West Bend; C.K. Gordon, Farmers Co-op Elevator Co., Martelle; Glen Pogeler, North Iowa Cooperative Processing Association, Manly; E.O. Woodard, Western Soybean Mills, Sioux Falls, S.D.; J.L. Parmenter, Big 4 Co-op, Sheldon; Harry Grubs, Farmers Co-op. Elevator Co., Hubbard; Edward J. Dies, National Soybean Processors Association, Chicago; Walt Flumerfelt, General Mills, Inc., Minneapolis [Minnesota]; Karl Nolin, Farmers Co-op Association, Ralston; C.M. Gregory, Farmers Co-op Co., Dike; Eugene E. Woolley, General Mills, Inc., Belmond; Hjalmar N. Johnson, Ralston Purina Co., Iowa Falls; Bob Scroggs, Sioux Soya Co., Sioux City; Clark A. Cooley, Spencer Kellogg and Sons, Des Moines; Hugh Sanders, Spencer Kellogg and Sons, Des Moines;

"Victor Claude, Boone Valley Co-op, Eagle Grove; A.F. Leathers, Swift and Co., Des Moines; Art Kliever, Sioux Soya Co., Sioux City; M.R. Eighmy, Cooch Mill and Elevator Co., Lincoln; H.E. Schroeder, Muscatine Processing Corporation, Muscatine; C.F. Marshall, Allied Mills, Inc., Chicago; L.J. Murphy, Allied Mills, Inc., Omaha [Nebraska]; Ernie Lyster, Iowa Soya Co., Redfield; H.R. Schultz, Pillsbury Flour Mills Co., Centerville; Donald B. Walker, Ralston Purina Co., Iowa Falls; Odell Simonsen, Simonsen Mill Rendering Plant, Quimby; W.E. Simonsen, Simonsen Mill Rendering Plant, Quimby;

"Ed O`Connor, Soy Bean Processing Co., Waterloo; E.L. Dutcher, Swift & Co., Des Moines; Hjalmer Johnson, Ralston Purina Co., Iowa Falls; A.J. Monach, Dannen Grain & Milling Co., St. Joseph, Missouri; Charles E. Nelson, Thomson's Soya Mill, Hiawatha, Kansas; A.G. Thomson, Thomson's Soya Mill, Hiawatha, Kans.; J.J. Thomson, Thomson's Soya Mill, Hiawatha, Kans.; and J. Morgan Wilson, Honeymead Products Co., Spencer."

24. *Fort Dodge Messenger and Chronicle* (*Iowa*). 1944. One killed and eight injured by whirlwind. May 20. p. 1, 14. Saturday evening.
• ***Summary:*** A large page-width banner headline across the front page reads: "Heavy tornado damage." One person was killed and at least 8 injured in accidents resulting from the twister last night (Friday, May 19) shortly after 7:00 p.m. Guy Hanson, a trucker, suffered fractures of both arms and a shoulder when he was hit by a section of brick wall that fell when the twister hit Cargill's plant at First street and Central avenue in Fort Dodge. The roof and third story of the building were destroyed, and a large section of the east wall caved in Eight employees at the soybean mill were uninjured, despite heavy damage to the building.

A smaller article just to the right of this one, titled "Six calls for city firemen during storm," states that a man was reported buried in debris following the collapse of a portion of the Cargill mill. But he had been rescued when firemen arrived. The mill is still without power.

25. *Fort Dodge Messenger and Chronicle* (*Iowa*). 1944. Rebuilding of soybean plant to begin as soon as possible. May 23. p. 3. Tuesday evening.
• ***Summary:*** Cargill, Inc. will start rebuilding its soybean processing plant in Fort Dodge as soon as possible, according to H.E. Marxhausen, the local company manager. Clearing of the wreckage was begun immediately after the tornado. A large photo shows the damaged processing plant. Two vertical signs on the building read: "Pellets." "...og Feeds" [probably "Hog Feeds"].

26. **Product Name:** Pellets Made from Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Fort Dodge, Iowa.
Date of Introduction: 1944 May.
Ingredients: Soybeans.
New Product–Documentation: *Fort Dodge Messenger and Chronicle* (Iowa). 1944. "Rebuilding of soybean plant to begin as soon as possible." May 23. p. 3. Tuesday evening. A large photo shows the damaged processing plant. Two vertical signs on the building read: "Pellets." "...og Feeds" [probably "Hog Feeds"].

27. *Soybean Digest.* 1944. Cargill plant destroyed at Fort

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Dodge (Photo caption). June. p. 7.
• ***Summary:*** This photo (5.75 by 3.37 inches, from the *Des Moines Register*) shows the damaged processing plant. Two vertical signs on the building read: "Pellets." "...og Feeds" [probably "Hog Feeds"]. The lower caption reads: "One of the casualties of a tornado at Fort Dodge, Iowa, May 19 was the three-story brick soybean processing plant of Cargill Incorporated. The tornado was one of several high wind storms which occurred in the state at that time."

28. National Soybean Processors Association. 1944. Year book, 1944-1945 (Association year). Chicago, Illinois. 71 p.
• ***Summary:*** Contents: Constitution and by-laws (incl. committees, code of ethics). Officers, directors and committees for 1944-45. Membership of the National Soybean Processors Association. Trading rules governing the purchase and sale of soybean oil meal. Appendix to trading rules on soybean oil meal: Official methods of analysis (moisture, protein, oil, crude fiber–official). Trading rules on soybean oil. Appendix to trading rules on soybean oil: Uniform sales contract, refining loss method (cup refining test, tentative official centrifugal refining test), soybean oil bleach test–refined oils, free fatty acids, tentative method of grading soybean oil for green color, official method for oil sampling, standard specifications for crude soybean oil for technical uses, moisture and volatile matter (vacuum oven method, hot plate method), modified Gardner break test, iodine number–Wijs method, unsaponifiable matter, official chemists and samplers for oil.

Article IX, Committees, lists and describes each.

The section titled "Officers, directors, and committees" (p. 13-20) states: President: Edward J. Dies. V.P., Chairman Executive Committee: E.K. Scheiter. Secretary: C.E. Butler. Treasurer: E.F. Johnson. Ass't. Treasurer: F.G. Duncanson. Executive Committee: E.K. Scheiter, Chairman, D.J. Bunnell, C.E. Butler, Edward J. Dies, Jasper Giovanna, S.F. Johnson, Mr. June S. Mitchell, H.R. Scroggs.

Board of Directors (Term expiring Sept. 1945): C.E. Butler, H.L. Dannen, Roger Drackett, Howard Kellogg, Jr., W.H. Knapp, H.R. Scroggs. (Term expiring Sept. 1946): H.A. Abbott, D.J. Bunnell, H.E. Carpenter, J.B. DeHaven, Philip S. Duff, P.M. Jarvis. (Term expiring Sept. 1947): J.H. Caldwell, Jasper Giovanna, Mr. June S. Mitchell, E.K. Scheiter, H.R. Schulze, P.E. Sprague.

Standing committees: For each committee, the names of all members (with the chairman designated), with the company and company address of each are given–Traffic and transportation. Research. Technical. Soybean grades and contracts. Oil trading rules. Meal trading rules. Soy flour. Crop improvement. Soybean research council. Trade development. Edible soybean. Handwritten on blank facing pages: Contract. Margarine. Wartime exports (11 March 1945). Soybean oil meal industry advisory committee. Nominating committee (16 July 1945). Uniform rules and standards committee for soybean oil meal (14 Sept. 1945). Urea yield committee (14 Sept. 1945).

The following organizations, and individuals are members of NSPA: Albers Milling Co., Seattle, Washington (W.P. Kyle). Allied Mills, Inc., Board of Trade Bldg., Chicago, Illinois (6 members). Archer-Daniels-Midland Co., Box 839, Minneapolis, Minnesota; Chicago, Illinois; Decatur, Illinois; Toledo, Ohio (5 members). Berea Milling Co. (The), Lexington, Ohio. Blanton Mill (The), St. Louis, Missouri. Boone Valley Cooperative, Eagle Grove, Iowa. Buckeye Cotton Oil Co. (The), Cincinnati, Ohio; Louisville, Kentucky; Memphis, Tennessee. Cairo Meal & Cake Co., Cairo, Illinois. Cargill, Inc., Minneapolis, Minnesota (Julius Hendel); Springfield, Illinois (Eric Nadel); Cedar Rapids, Iowa (L.O. Hauskins); Fort Dodge, Iowa (H.E. Marxhausen). Central Iowa Bean Mill, Gladbrook, Iowa. Central Soya Co., Inc., Chicago, Illinois; Gibson City, Illinois; Decatur, Indiana (3 members). Clinton Co., Clinton, Iowa (E.W. Myers). Concord Soya Corporation, Concord, Michigan (W.C. Whittecar). Dannen Grain & Milling Co., St. Joseph, Missouri. Decatur Soy Products Co., Decatur, Illinois (Jasper Giovanna). Drackett Co. (The), Cincinnati 32, Ohio (Roger Drackett). Elevators & Mills, Inc., Windfall, Indiana (Mr. June S. Mitchell). Fairfield Soy Mill, Fairfield, Iowa (Jos. Sinaiko). Farmers Cooperative Assn., Ralston, Iowa (Karl Nolin). Farmers Cooperative Co., Dike, Iowa (C.M. Gregory). Farmers Cooperative Elevator, Martelle, Iowa (C.K. Gordon -> H.B. Lovig). Fayette Soy Bean Mill, Fayette, Iowa (J.M. Durfey -> W.V. Clark). Funk Bros. Seed Co., Bloomington, Illinois (H.A. Abbott). Galesburg Soy Products Co., Galesburg, Illinois (Max Albert). General Mills, Inc., Vegetable Oil and Protein Div., Minneapolis, Minnesota (W.H. Eastman); Belmond, Iowa (W.E. Flumerfelt). Glidden Co. (The), Cleveland, Ohio (P.E. Sprague); Chicago, Illinois (A.A. Levinson -> R.R. Stegler). Gooch Milling & Elevator Co., Lincoln, Nebraska (M.R. Eighmy). Hemphill Soy Products Co., Kennett, Missouri (W.A. Hemphill). Hiawatha Soybean Mill, Hiawatha, Kansas (A.G. Thomson). Honeymead Products Co., Cedar Rapids, Iowa (D.O. Andreas -> Osborn Andreas); Spencer, Iowa (J.M. Wilson -> Steve Burke); Washington, Iowa (Hugo Lensch). Hoosier Soybean Mills, Marion, Indiana (J.H. Caldwell, Jr.). Huegely Elevator Co., Nashville, Illinois (J.W. Huegely). Hulcher Soy Products, Virden, Illinois (Norman E. Hulcher). Iowa Soy Co., Redfield, Iowa (E. Lyster -> H.R. Straight). Kansas Soybean Mills, Inc. (The), Emporia, Kansas (Ted W. Lord). Laucks (I.F.), Inc., Portsmouth, Virginia (H.F. Armstrong). Mankato Soybean Products Inc., Mankato, Minnesota (Frank J. Bergman -> W.A. Berge). Marr (Pete) Soybean Mills, Fremont, Nebraska (Pete Marr). Mellott Grain Co., Mellott, Indiana (Milford Knowles). Muscatine Processing Corp., Muscatine, Iowa (G.A. Kent). Old Fort Mills, Inc., Marion, Ohio (Ralph Kail). Owensboro Grain Co., Owensboro, Kentucky (William M.

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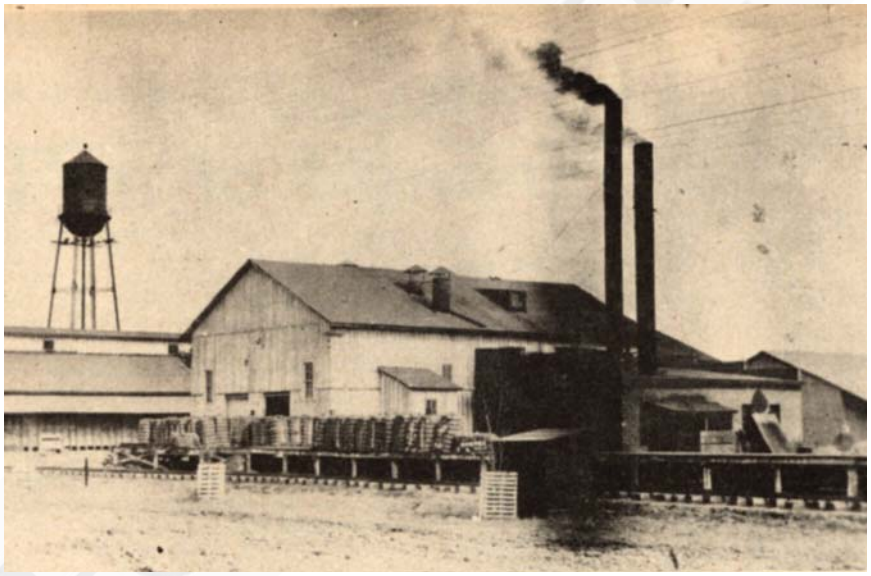
O'Bryan). Pillsbury Soy Mills, Clinton, Iowa (Raymond C. Ilstrup); Centerville, Iowa (H.R. Schultz). Procter & Gamble Distributing Co., Cincinnati, Ohio. Procter & Gamble, Ivorydale, Ohio (W.H. Knapp). Producers Cooperative Oil Mill, Oklahoma City, Oklahoma (O.K. Winterringer). Quincy Soybean Products Co., Quincy, Illinois (Irving Rosen). Ralston Purina Co., St. Louis, Missouri (E.F. Johnson); Kansas City, Missouri (G.H. Banks); Lafayette, Indiana (Ralph Guenther); Iowa Falls, Iowa (H.N. Johnson); Circleville, Ohio (Hal Dean). Shellabarger Soybean Mills, Decatur, Illinois (W.L. Shellabarger). Simonsen Brothers, Quimby, Iowa (W.E. Simonsen). Sioux Soya Co., Sioux City, Iowa (H.R. Scroggs). Southern Cotton Oil Co. (The), Goldsboro, North Carolina (C.S. Ragan); Tarboro, North Carolina (W.A. Moore). Soya Processing Co., Wooster, Ohio (H.H. Heeman). Soy Bean Processing Co., Waterloo, Iowa (C.E. Butler). Soy-Rich Products, Inc., Wichita, Kansas (B.S. Brooks). Spencer Kellogg & Sons, Buffalo, New York; Chicago, Illinois; Decatur, Illinois; Des Moines, Iowa (Howard Kellogg, Jr.). Staley (A.E.) Mfg. Co., Decatur, Illinois (E.K. Scheiter); Painesville, Ohio (H.D. Egly -> Thomas Longbons). Swift & Co., Chicago, Illinois (P.M. Jarvis). Swift & Company Oil Mill, Cairo, Illinois (W.B. Stone). Swift & Company Soybean Mill, Champaign, Illinois (N.P. Noble). Swift & Company Soybean Mill, Des Moines, Iowa (A.F. Leathers). Swift & Company Soybean Mill, Fostoria, Ohio (S.D. Hollett -> H.S. Byrd). Toledo Soybean Products Co., Toledo, Ohio (J.H. Brown). Wells (Ralph) & Co., Monmouth, Illinois (Ralph Wells). West Bend Elevator Co., West Bend, Iowa (R.W. Jurgens). Western Soybean Mills, Sioux Falls, South Dakota (E.A. Woodward). Williams Milling Co., Sac City, Iowa (Leo W. Williams).

Organizations represented on committees: American Soybean Association, Hudson, Iowa (George Strayer, Howard Roach). Illinois College of Agriculture, Urbana, Illinois (Dr. W.L. Burlison, J.W. Lloyd). U.S. Regional Soybean Laboratory, Urbana, Illinois (Dr. R.T. Milner).

Handwritten: New members added since publication of the Trading Rules Book–Big 4 Cooperative Processing Assn., Sheldon, Iowa (Morel M. Stientjes, Mgr., April 1945). Delphos Grain & Milling Co., Delphos, Ohio (Floyd E. Hiegel, Pres., Aug. 1945). Haynes Soy Products Inc., Portland, Indiana (W.V. Helfiker, Office Mgr., May 1945). Holland Pioneer Mills Inc., Ohio City, Ohio (G.A. Holland, Pres., March 1945). Jamesville Mills, Inc., Jamesville, Wisconsin (A. Roger Hook, Mgr., Oct. 1945). Kansas Soya Products Inc. (The), Kansas City, Kansas (Richard Lord, V.P. & Treas., Oct. 1943). North Iowa Cooperative Processing Association, Manly, Iowa (Glenn Pogeler, Mgr., Nov. 1944). Honeymead plant in Spencer, Iowa, bought Doughboy Mills, Inc., New Richmond, Wisconsin (4 Dec. 1945). Washington Soy Mill: Name changed by Joe Sinaiko from Honeymead's plant in Washington, Iowa (19 Dec. 1945).

Note: This is the earliest document seen (March 2008) that uses the name "North Iowa Cooperative Processing Association." The word "Cooperative" is spelled without a hyphen. Address: 3818 Board of Trade Building, Chicago 4, Illinois.

29. *Soybean Digest.* 1944. Some early processors. Sept. p. 18-19.



• ***Summary:*** "There could be no real soybean industry until the coming of processing plants. Without them, growers hesitated to expand acreage. But processors waited on a sufficient volume of soybeans so there would be at least a gambler's chance of profitable operation. It took some years to overcome this impasse.

"Pioneers ran into extreme difficulties...

"Herman Meyer at Seattle, Washington, undertook the first known processing of soybeans in America. He crushed some Manchurian beans with a hydraulic press about 1911.

"On the other side of the country, the Elizabeth City Oil & Fertilizer Co., at Elizabeth City, North Carolina, processed the first home grown soybeans. W.T. Culpepper, manager of the firm, conducted a test run on 10,000 bushels in December 1915, and was so satisfied with his results that he is said to have offered growers production contracts in advance in order to insure the company a supply of soybeans for continued operations. But in 1916 German interests took out of the country the entire local supply, paying up to $4.50 a bushel!

"First Midwest processing was undertaken with expeller equipment designed for crushing corn germ by the Chicago

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Heights Oil Manufacturing Co., at Chicago Heights, Ill., in 1917 or 1918. During the latter year the company added two expellers designed for soybeans. These were used sporadically until the equipment was sold to Funk Bros. Seed Co., another early processor of soybeans, in 1923. I.C. Bradley, now with Allied Mills, Inc., was in charge. He brought in beans from North Carolina, and crushed some of the first seed grown in Illinois. But he was unable to obtain enough beans to keep the plant in continuous operation.

"The enthusiasm and vision of the late A.E. Staley helped the infant industry over some of its first difficult hurdles. In 1922 'at the request of a large number of farmers in this community' he built an expeller plant with an operating capacity of 500 bushels daily at Decatur, Ill. Price paid was 99.75c a bushel. Mr. Staley wrote that operations were 'unprofitable and very discouraging but it is our intention to leave the machinery in our plant for another year...' The A.E. Staley Mfg. Co. has been processing soybeans ever since.

"An early solvent extraction venture was undertaken by the Eastern Cotton Oil Co., at Norfolk, Virginia. A Bollman [Bollmann] type continuous extractor with 80 tons daily capacity was used on North Carolina soybeans. Again the supply proved inadequate.

"So things hitched along. But in 1927 the 'Peoria plan' was evolved when several processing companies contracted in advance with Illinois farmers to buy a cool million bushels of soybeans at $1.35. Wilfred Shaw of the American Milling Co., at Peoria, one of the contracting companies, said his company alone offered a potential outlet of 5 million bushels, and that the country as a whole should absorb upwards of 75 millions! The 'Peoria plan' was an enormous factor in pushing Illinois to the front in soybean production.

"First soybeans processed west of the Mississippi River were at Cedar Rapids, Iowa, by Iowa Milling Co., it is claimed. Joe Sinaiko and Max Albert, partners in the venture, installed the equipment consisting of two expellers, in the fall of 1927 and operations began the next spring. Albert later established the Galesburg Soy Products Co., while Sinaiko operated Iowa Milling until he sold to Cargill in 1943."

Photos show: (1) The Elizabeth City Oil & Fertilizer Co. plant. Note: This is the earliest photo seen of this plant. (2) The Iowa Milling Co. plant, now owned by Cargill. (3) A.E. Staley expeller plant built in 1922. (4) A modern soybean crushing plant built in the early 1940s. (5) "Part of the Eastern Cotton Oil Co. plant in Norfolk, Virginia, early processor by solvent extraction method. At left is Mr. Mr. Scheunemann, erection engineer, at right, son of W.M. Gregory, principal stockholder. Immediately back of men is meal grinding house. Boiler plant is designated by the smokestack. Tall doghouse at rear locates Bollmann extractor and solvent still. To left of field of vision is roll room, and still further left, seed storage."

30. Cargill, Inc. 1944. Fire or explosion in solvent extraction plant. Cedar Rapids, Iowa. Oct. 11.
• ***Summary:*** *Cedar Rapids Gazette* (Iowa). 1944. "Spectacular fire at Cargill." Oct. 12. This photo (5½ by 6½ inches, black-and-white) shows flames engulfing a building. The lower caption notes that on Wednesday night [Oct. 11] flames soared 100 feet into the air as the most spectacular fire to hit Cedar Rapids in years destroyed the Cargill grain processing mill at 411 Sixth street NE. The loss was estimated at $250,000. The shower of sparks threatened the residential district to the south. For more fire photos, see back page.

Soybean Digest. 1944. "Cargill, Inc. plant burns." Nov. p. 13.

Letter from Joe Givens of Edina (near Minneapolis), Minnesota. 2005. May 8. In the 1940s and 1950s, the extraction industry was plagued by hexane explosions in solvent extraction plants. Cargill had a number of hexane explosions, including two at its plants in Cedar Rapids, Iowa (1945-1956), where no one was killed but the plant was destroyed.

Letter (e-mail) from Joe Givens with more basic information about explosion or fire: Magnitude: 5 (where 10 is the most severe). Address: Cedar Rapids, Iowa.

31. *Cedar Rapids Gazette* (*Iowa*). 1944. Spectacular fire at Cargill (Photo caption). Oct. 12.
• ***Summary:*** This photo (5½ by 6½ inches, black-and-white) shows flames engulfing a building. The lower caption notes that on Wednesday night [Oct. 11] flames soared 100 feet into the air as the most spectacular fire to hit Cedar Rapids in years destroyed the Cargill grain processing mill at 411 Sixth street NE. The loss was estimated at $250,000. The shower of sparks threatened the residential district to the south. For more fire photos, see back page.

32. *Des Moines Register* (*Iowa*). 1944. Cedar Rapid mill burns; loss million. Persons living near flee homes. Oct. 12. p. 1.
• ***Summary:*** "Cedar Rapids, Iowa.–A sensational fire virtually destroyed the Cargill Feed Mill plant here Wednesday night [Oct. 11], with loss estimated by Manager L.O. Haskins at $1,000,000."

The fire sent sparks into the business district five blocks away, and was still burning in the 4-story plant late Wednesday night.

The Cargill company, with headquarters in Minneapolis, Minnesota, manufactures cattle and poultry feeds. The cause of the blaze has not been determined. Haskins said the loss was insured.

33. Cargill, Incorporated. 1944. Cargill assures customers no inconvenience because of Cedar Rapids fire (Ad). *Des Moines Register* (*Iowa*). Oct. 13. p. 3.

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• ***Summary:*** "In spite of the unfortunate partial destruction of our Cargill Cedar Rapids mill and soy bean processing plant, steps have been taken to make sure that feed dealers and customers will suffer no inconvenience in securing prompt delivery of famous Cargill Feeds. Stepping up production and using reserve stocks at other mills assures all dealers and customers that their needs will be taken care of fully and promptly. Trucking will still be maintained from the Cedar Rapids warehouse.

"Carload deliveries will be made from other mills *without interruption."*

Cargill has warehouses and mills at Cedar Rapids, Iowa; Fort Dodge, Iowa; Springfield, Illinois; Minneapolis, Minnesota. Address: Cedar Rapids, Iowa.

34. *Soybean Digest.* 1944. Austen S. Cargill, Minneapolis, Minnesota, has been elected executive vice president of Cargill, Inc... Oct. p. 15.
• ***Summary:*** "... according to an announcement by J.H. MacMillan, Jr., president of the firm. Mr. Cargill is a son of W.W. Cargill, founder of the Cargill Co."

35. *Soybean Digest.* 1944. Cargill, Inc. plant burns. Nov. p. 13.
• ***Summary:*** "The most spectacular fire in Cedar Rapids, Iowa, in years destroyed the soybean processing plant and a large portion of the feed mixing equipment of Cargill, Inc., in that city October 11. Estimated loss was $200,000.

"The plant was the first soybean processing plant to be established west of the Mississippi. It was first operated in 1927 by Joe Sinaiko and Max Albert."

36. *Soybean Digest.* 1944. Grits and flakes from the industry: John H. MacMillan, Sr., age 75,... Nov. p. 20.
• ***Summary:*** "... chairman of the board of Cargill, Inc., Minneapolis, and head of the Cargill enterprises since 1909, died Oct. 20 in Minneapolis, following an illness of slightly more than a month. A former president of the Minneapolis Chamber of Commerce and head of the Council of Grain Exchanges during World War I, Mr. MacMillan's business activities included directorships in the Millers National Insurance Co., Chicago, and the First National Bank, Minneapolis."

37. Cargill, Inc. 1945. Soy processors (Ad). *Soybean Digest.* April. p. 22.
• ***Summary:*** "Mills at: Minneapolis, Minnesota. Ft. Dodge, Iowa. Cedar Rapids, Iowa. Springfield, Illinois."

38. *Cedar Rapids Gazette* (*Iowa*). 1945. Cargill buys Honeymead C.R. plant: It's two and half million dollar deal. May 20. p. 25.
• ***Summary:*** "Announcement was made Saturday night of the sale of Honeymead Products company's Cedar Rapids plant to Cargill, Inc., of Minneapolis, effective June 1.

"Although the purchase price was not disclosed, grainmen estimate" it was about $2.5 million, including both plant and inventories.

"The feed and soybean processing plant involved in the deal is situated at 850 Tenth street SW. Both companies have been engaged in the feed industry in this territory and the sale marks a major change in the industry. Plans are under way for rebuilding of the Cargill mill at 411 Sixth street NE, which was partly destroyed by fire last fall."

"D.O. [Dwayne] Andreas has resigned as vice-president of Honeymead and will become general manager of the Cedar Rapids operations of Cargill."

"Cargill's new plant in Cedar Rapids has about 100 employees."

39. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Spencer, Iowa.
Date of Introduction: 1945 June.
Ingredients: Soybeans.
New Product–Documentation: Cargill, Inc. 1947. "7 reasons why soybeans offer better profit opportunity in 1947" (Ad). *Soybean Digest.* March. p. 8. Cargill now has 6 soybean crushing plants, including one in Spencer, Iowa.

Soybean Blue Book. 1947. "Processors of soybeans–Iowa." (p. 56). "Spencer–Cargill, Inc. (Head office, Minneapolis, Minn.) Plant superintendent: Jim Gossman. Plant manager: M.E. Hinderager. Naptha [Naphtha] solvent capacity 40 tons. Storage capacity 80,000 bu. 'Cargill' soybean oil meal. 'Cargill-Nutrena' pellets and feeds."

Cargill, Inc. 1954. "Look to Cargill–Specialists in serving agriculture" (Ad). *Soybean Blue Book.* p. 33. In the middle of this full-page black-and-white ad is a map of the midwestern and eastern USA showing the location of Cargill's "7 modern plants in the heart of soy land." One is in Spencer, Iowa.

Lauser, Greg C. 1982. "History of Cargill's involvement in the soybean processing industry." Minneapolis, Minnesota. 5 p. Unpublished manuscript. In 1945 Cargill acquired from Honeymead soybean solvent extraction plants in Spencer and Cedar Rapids (west), Iowa.

40. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Cedar Rapids [west], Iowa.
Date of Introduction: 1945 June.
Ingredients: Soybeans.
New Product–Documentation: *The Gazette* (Cedar Rapids, Iowa). 1945. May 20, p. 25. "Cargill buys Honeymead C.R. [Cedar Rapids]: Its two and half million dollar deal." The sale was effective June 1.

The Mason City Globe-Gazette (Mason City, Iowa). 1945. May 21. p. 2. "Cargill purchases Cedar Rapids plant

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of Honeymead Products." "Cedar Rapids, (AP)–Cargill, Inc of Minneapolis, has purchased the Cedar Rapids plant of the Honeymead Products company and will assume possession June 1.

"The transaction was estimated by grainmen to have cost $2,500,000.

"Cargill's operations here will be supervised by Dwayne O. Andreas, former Honeymead vice-president as general manager. Approximately 100 plant employees will be embraced in the Cargill setup. The plant has a daily soybean processing capacity of 4,300 bushels, manufactures 200 tons of feed daily and has a bulk grain storage capacity of 700,000 bushels.

The Honeymead company will retain its main office here and continue operation of feed and soybean processing plants at Spencer and Washington, Iowa. "Cargill's present Cedar Rapids plant, damaged by fire last fall, will be rebuilt."

Soybean Digest. 1945. June. p. 24. "Honeymead sells to Cargill, Inc." The sale of Honeymead Products Co.'s Cedar Rapids plant to Cargill, Inc., of Minneapolis, Minnesota, effective June 1, has been announced. Estimated purchase price was 2½ million dollars. Dwayne Andreas resigned as vice president of Honeymead. He will become general manager of the Cedar Rapids operations for Cargill. Note: This solvent extraction plant, Cargill's 2nd soybean crushing plant in Cedar Rapids, Iowa, is called "Cedar Rapid (west)" by Cargill. The first, purchased in March 1943, is called "Cedar Rapids (east)."

41. *Soybean Digest.* 1945. Honeymead sells to Cargill, Inc. June. p. 24.
• ***Summary:*** The sale of Honeymead Products Co.'s Cedar Rapids plant to Cargill, Inc., of Minneapolis, Minnesota, effective June 1, has been announced. Estimated purchase price was 2½ million dollars.

"Honeymead will continue in business, keeping its main office in Cedar Rapids and continuing to operate its feed and soybean processing plants at Spencer and Washington, Iowa."

O.D. [sic, Dwayne O.] Andreas resigned as vice president of Honeymead. He will become general manager of the Cedar Rapids operations for Cargill.

"It is estimated that the acquisition of Honeymead's plant will boost Cargill's Iowa business to more than 10 million dollars annually. The plant has a daily soybean processing capacity of 4,300 bushels, manufacturers 200 tons of feed daily and has a bulk grain storage capacity of 700,000 bushels."

Note: This is the earliest document seen (Feb. 2005) concerning any of the Andreas brothers and soybeans or Honeymead or Cargill.

42. Cargill, Inc. 1945. Soy processors (Ad). *Soybean Digest.* Sept. p. 60.
• ***Summary:*** This 1/3-page ad states: "Mills at: Minneapolis, Minnesota. Ft. Dodge, Iowa. Cedar Rapids, Iowa. Springfield, Illinois."

43. *Cedar Rapids Gazette* (*Iowa*). 1945. Cargill buys Nutrena Mills. Oct. 15. p. 10.
• ***Summary:*** "Minneapolis (UP)–Purchase of the entire capital stock of Nutrena Mills, Inc. of Kansas City, Kansas, by Cargill Inc. of Minneapolis was announced this weekend by Cargill officials.

"Nutrena's three mills, located at Sioux City [Iowa], Coffeyville, Kansas, and Kansas City, manufacture a complete line of livestock and poultry feeds and other specialties including dog food.

"The Nutrena plants employ 430 workers, all of whom will be kept on their present status.

"(Cargill Inc., one of the country's largest grain firms entered the feed business a few years ago with the establishment of a mill at Minneapolis. About two years ago the company purchased the Iowa Milling company feed plant and business in Cedar Rapids and last June acquired the Honeymead feed and soybean plant here. Soybean plants are also operated at Ft. Dodge and Springfield.)"

44. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Washington, Iowa.
Date of Introduction: 1945 October.
Ingredients: Soybeans.
New Product–Documentation: *Soybean Digest.* 1946. Oct. p. 22. "Cargill adds to list of officers" [Andreas and Kelm]. "Cargill, Inc., announces the purchase of the solvent process soybean plant at Washington, Iowa, from Joseph M. Sinaiko, pioneer Iowa processor... Cargill took over the Washington plant, which is now in full operation under the management of Hugo Lensch."

Cargill, Inc. 1947. "7 reasons why soybeans offer better profit opportunity in 1947" (Ad). *Soybean Digest.* March. p. 8. Cargill now has 6 soybean crushing plants, including one in Washington, Iowa.

Soybean Blue Book. 1947. "Processors of soybeans–Iowa." (p. 56). "Washington–Cargill, Inc. (Head office, Minneapolis, Minn.) Naptha [Naphtha] solvent capacity 60 tons. Storage capacity 200,000 bu. 'Cargill' soybean oil meal. 'Cargill-Nutrena' pellets and feeds."

Lauser, Greg C. 1982. "History of Cargill's involvement in the soybean processing industry." Minneapolis, Minnesota. 5 p. Unpublished manuscript. In 1946, Cargill acquired the Washington, Iowa, soybean crushing plant.

Soya Bluebook. 1985. "Soy directory–Oil extraction plants / refineries–Iowa." (p. 50). Cargill Inc. (P = Soybean crusher). N. 15th Ave. & 3rd St., Washington, Iowa 52353. Phone: 319-653-2196. Main office: Minneapolis, Minnesota. TLX [Telex] 290794. Contact: Bill Matson. Solvent. Cargill

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soy meal and pellets. Served by rail. Note: This is the last entry in the *Soya Bluebook* for any soybean crushing / processing plant in Washington, Iowa.

Mrkvicka, Mike. 1988. "Ag industry pioneer was quiet giant: C.R.'s [Cedar Rapids] soybean, corn processing industry begun by Joe Sinaiko." *Cedar Rapids Gazette* (Iowa). Oct. 16. Sunday. In 1944 Joe Sinaiko sold his Iowa Milling Co. to Cargill. But soon he regretted his decision to sell. So he returned to the milling business by building two smaller soybean mills in Fairfield, Iowa, and Washington, Iowa. But he still longed to get Iowa Milling Co. back. After World War II, he saw his chance. Cargill agreed to trade Iowa Milling Co. for the two plants in Fairfield and Washington. Sinaiko quickly agreed to the deal.

Kreitlow, Bert. 1990. "Cargill: C.R. [Cedar Rapids] plants still vital to 125-year-old company." *Cedar Rapids Gazette* (Iowa). May 6. The decline in U.S. soybean exports in recent years has idled Cargill plants during the last 20 years, including one in Washington, Iowa.

Talk with Paul Vajda of Cargill. 2003. Aug. 4. Cargill bought the plant in Washington, Iowa, in 1946. The capacity at that time was 8,000 bushels/day, increasing in 1963 to 11,000 bu/day then in 1979 to 21,000 bu/day. The plant stopped processing soybeans on 1 May 1984, but there are some indications that it may have been used to store soybeans after that date.

45. *Cedar Rapids Gazette* (*Iowa*). 1946. Sinaiko trades Cargill for old Iowa Milling Co. Sept. 20. p. 1.
• ***Summary:*** "Cedar Rapids News–The east side soybean and feed plant of Cargill, Inc. at 411 Sixth street NE in Cedar Rapids has returned to the ownership of Joe Sinaiko and is operating under the name of Iowa Milling company.

"Sinaiko announced Thursday that he has exchanged his Washington, Iowa, plant for the Cedar Rapids business which he sold to Cargill's [sic] about three years ago.

"The shift was made, he added, because he preferred to operate in the city where his home is located. The Sinaiko residence is at 2232 Linden drive SE.

"Cargill, Inc., retains its west side plant at 850 Tenth street SW. Personnel of the east side plant is being divided, by agreement, between the Iowa Milling company and Cargill's.

"The assessed valuation of $43,200 on the city assessors books for the plant, which is now known as the Iowa Milling company, indicates an actual valuation of $72,000 for the plant, ground and buildings, with exception of the leased ground on which the mill is constructed.

"The plant has a daily processing capacity of 200 tons of feed and soybeans."

46. *Soybean Digest.* 1946. Cargill adds to list of officers [Andreas and Kelm]. Oct. p. 22.
• ***Summary:*** "Cargill, Incorporated announces the election of two additional divisional vice presidents: Erwin E. Kelm in charge of the grain division, and Dwayne O. Andreas in charge of the vegetable oil division... Mr. Andreas gained his experience in the vegetable oil field in the development and management of the Honeymead Company of Cedar Rapids, Iowa. In 1945, when Cargill bought that plant, Mr. Andreas came into the Cargill organization, first as manager at Cedar Rapids, and later was moved to the main office in Minneapolis [Minnesota].

"Cargill, Inc., announces the purchase of the solvent process soybean plant at Washington, Iowa, from Joseph M. Sinaiko, pioneer Iowa processor.

"The firm announces at the same time the sale of its Cedar Rapids, Iowa, expeller plant to Sinaiko. The latter was former owner of the Cedar Rapids plant under the name of Iowa Milling Co.

"Cargill took over the Washington plant, which is now in full operation under the management of Hugo Lensch."

Two excellent portrait photos show the young and handsome Dwayne Andreas, and Erwin Kelm.

47. Cargill, Inc. 1946. The history of Cargill, Incorporated 1865-1945. Minneapolis, Minnesota: Cargill. 118 p. Illust. No index. 18 cm. Saddle stitched.
• ***Summary:*** Contents: Foreword. Part I: History. 1. Beginnings, 1865-1880. 2. Building an integrated unit, 1880-1888. 3. S.D. Cargill and Minneapolis, 1888-1903. 4. Minneapolis progress, 1903-1909. 5. La Crosse and outside investments, 1903-1909. 6. The crisis, 1909-1916. 7. Reorganization, 1916-1922. 8. Expansion eastward, 1922-1926. 9. Progress, 1926-1945. 10. Cargill today.

Part II: Organization. Directors (1890-1945). Biographical sketches of present members of the board of directors of Cargill, Inc.: Austen S. Cargill, Edward J. Grimes, John H. MacMillan, Jr., Cargill MacMillan, Dr. Julius Hendel, Howard I. MacMillan, John G. Peterson. Officers (as of 1 Dec. 1945). Divisions, Branches and Plants.

Page 118 states that the company is located at 671 Chamber of Commerce, Minneapolis 15, Minnesota. The same page shows that the company has the following operations in Cedar Rapids, Iowa: A sales office. Two feed & oil plants. Two terminal elevators. An affiliated company is Nutrena Mills, Inc., Kansas City, Kansas.

Photos show: (1) William Wallace Cargill. (2) Typical country elevator. (3) Reproduction of 1886 contract of purchase. (4) James F. Cargill. (5) Early office scene in about 1900 with S.D. Cargill in foreground. (6) Samuel D. Cargill. (7) Cargill's original elevators at the head of the lakes. (8) F.E. Lindahl. (9) John H. MacMillan. (10) D.D. MacMillan, R.N. Hoople. (11) Elevator "M," Superior, Wisconsin. (12) Elevator "B," Green Bay, Wisconsin. (13) Elevator "K," Superior, Wisconsin. (14) Itasca elevator, Superior, Wisconsin. (15) La Crosse daily chronicle: William W. Cargill. (16) Swift dam–Valier irrigation project, Birch

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Creek. (17) Spillway–swift dam, Valier, Montana. (18) Birch Creek Diversion dam, Valier, Montana. (19) Lake Frances dam and reservoir, Valier, Montana. (20) P-flume, Valier, Montana. (21) Elevator "T," Minneapolis, Minnesota. (22) Elevator "S," Minneapolis, Minnesota. (23) Subterminal elevator, Sleepy Eye, Minnesota. (24) Superior elevator, Buffalo, New York. (25) Electric elevator, Buffalo, New York. (26) Great Eastern elevator, Buffalo, New York. (27) Cargill elevator, La Crosse, Wisconsin. (28) Elevator "E," Milwaukee, Wisconsin. (29) River house, Memphis, Tennessee. (30) Cargill elevator, Ottawa, Illinois. (31) Belt elevator, E. St. Louis, Illinois. (32) Cargill elevator, Marshall, Minnesota. (33) Cargill elevator at Kansas City. (34) Cargill elevator, Ogdensburg, New York. (35) Cargill Omaha elevator [Nebraska]. (36) C. & N.W. annex, Chicago, Illinois. (37) Lake Steamer loading at Chicago Northwestern elevator. (38) Elevator "R," E. St. Louis, Illinois. (39) Guntersville, Alabama. (40) World's largest grain elevator, Albany, New York. (41) Cargill elevator, Maumee, Ohio. (42) Barge Carswego in Erie Canal lock. (43) Steamer W.D. Rees–Great Lakes freighter. (44) Integrated barge unit. (45) Motorship Victoria. (46) U.S.S. Agawam. (47) Cargill built towboat. (48) Minneapolis seed house. (49) Port Cargill [Savage, Minnesota] on the Minnesota River. (50) Cedar Rapids, Iowa–west side plant–purchased in June 1945 from Honeymead Products Co. (51) Future home of Cargill administrative / executive offices at Lake Minnetonka. (52) Minneapolis feed mill. (53) Soybean plant, Springfield, Illinois. It uses expellers for oil extraction and has a crushing capacity of 4,500 bushels/day of soybeans. The connecting elevator has storage space for about 220,000 bushels, and is equipped for both truck and rail handling.

Note 1. This "pamphlet" is cited numerous times in *Cargill beginnings... an Account of Early Years*, by John L. Work (1965). It was described (p. 2) as "a paper-bound, brown-covered pamphlet." It was printed, issued to the family, company members, and friends. It began with this brief summary:

"'The Cargill family came originally from Arglyeshire and as been characterized through past centuries by extreme restlessness. One branch of the family migrated to New Zealand in the late 17th century and founded the town of Invercargill. A brother of this pioneer moved to Jamaica in 1699 and founded a Jamaican branch of the family. The present head of this branch, the Honorable Sydney Cargill, bears a great physical resemblance to the late James F. Cargill, brother of the founder of our company.'

"These assertions may once have been backed by some kind of evidence, but if so it has since been mislaid. The facts that remain lead to different conclusions." Since this same text appears on the first page of Chapter 1 [p. 11] it seems likely that this is the book referred to in 1965, although it may have been reprinted in larger numbers and more durable and/or professional format.

Note 2. This is the earliest document seen (July 2020) that mentions "Nutrena" in connection with Cargill.

Note 3. This book is crippled by lack of an Index. Address: 761 Chamber of Commerce, Minneapolis 15, Minnesota.

48. Cargill. 1947. Poultry and livestock feeders! Cargill Feeds and Nutrena Feeds are now combined to give you greater-than-ever feeds called Cargill-Nutrena poultry and livestock feeds (Ad). *Greene Recorder* (*The*) (*Greene, Iowa*). Jan. 29. p. 3.

• ***Summary:*** "Our general line of Cargill-Nutrena feeds includes:

"Cargill-Nutrena Hog Supplement
"Cargill-Nutrena Sow and Pig Meal
"Cargill-Nutrena Pig Pusher
"Cargill-Nutrena Dairy Concentrate
"Cargill-Nutrena Dairy Feeds
"Cargill-Nutrena Beef Supplement
"Cargill-Nutrena Calf Starter
"Cargill-Nutrena Poultry Concentrate
"Cargill-Nutrena 20% Grain Balancer
"Cargill-Nutrena 20% Egg Mash

"All Poultry Feeds may be obtained in Crumblized or Pellet form, all others in Pellet or Mash form

"Albrecht Feed Mill, Phone 59, Greene, Iowa.
"McEvoy Produce, Phone 323W, Greene, Iowa."

49. *Soybean Digest.* 1947. Operations of Cargill Feeds and Nutrena Feeds have been consolidated into one organization to be known as the Cargill feed division of Minneapolis. Feb. p. 38.

• ***Summary:*** "Nutrena Mills will retain its identity as a subsidiary of Cargill, Inc."

50. Cargill, Inc. 1947. 7 reasons why soybeans offer better profit opportunity in 1947 (Ad). *Soybean Digest.* March. p. 8.

• ***Summary:*** 1. Favorable price ratio. 2. World shortage. 3. Pent-up industrial demand. 4. Less soil depletion. 5. Demand for high protein feed. 6. Expanding industrial uses. 7. New varieties give greater yields.

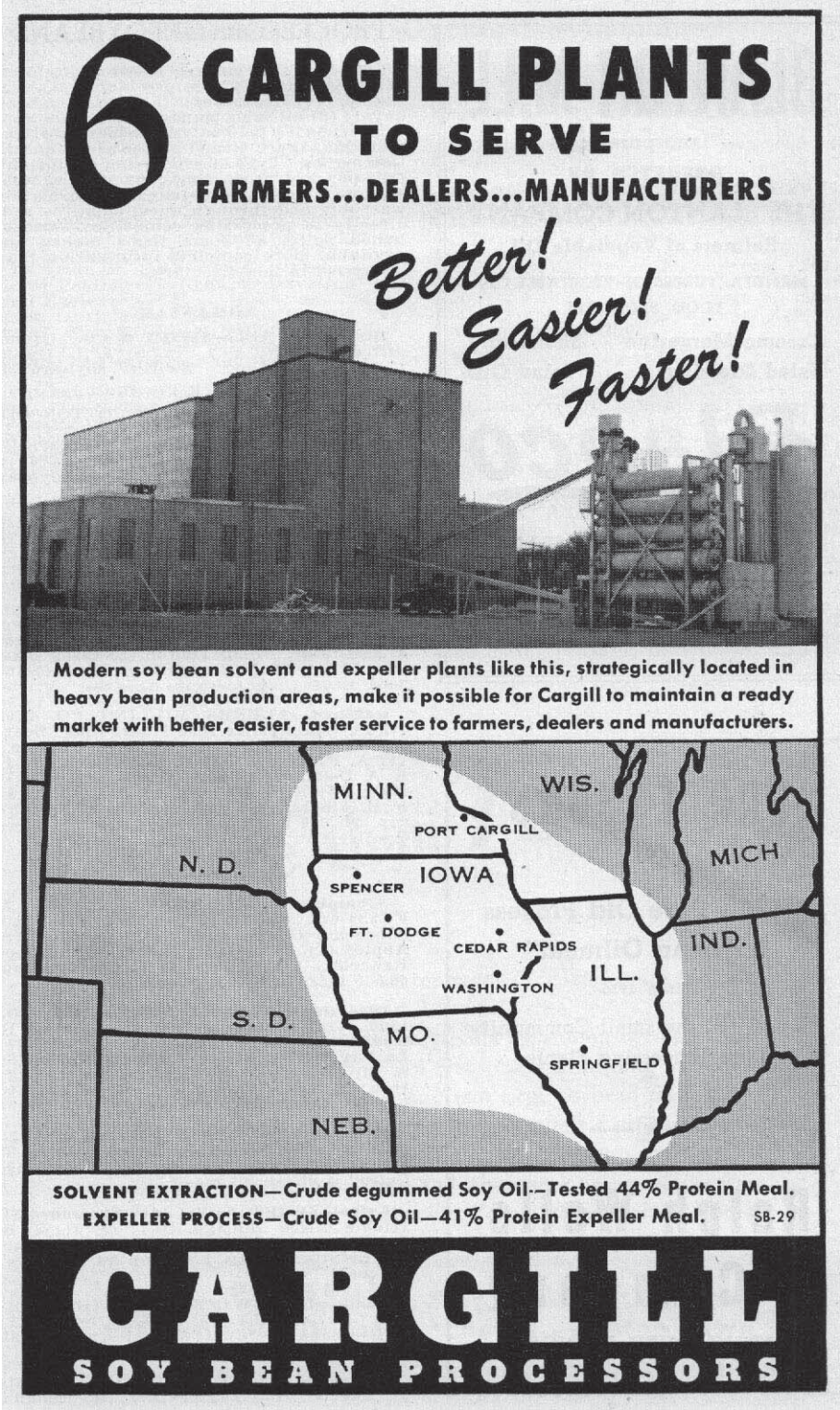
Ready cash market–6 Cargill plants: 1. Port Cargill [Savage], Minnesota. 2. Spencer, Iowa. 3. Ft. Dodge, Iowa. 4. Cedar Rapids, Iowa. 5. Washington, Iowa. 6. Springfield, Illinois. "Cargill–Soy Bean Processors."

This ad also appeared in the March 1948 issue (p. 50) of this magazine.

51. Cargill, Inc. 1947. 6 Cargill plants to serve farmers, dealers, manufacturers: Better! Easier! Faster! (Ad). *Soybean Blue Book.* p. 45.

• ***Summary:*** The top half of this full-page black-and-white ad is a photo showing a modern Cargill solvent plant. In the bottom half is a map of the midwestern USA showing the

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location of Cargill's six plants. The company's headquarters are at 761 Grain Exchange, Minneapolis 15, Minnesota.

Details on each plant are given on pages 47-64 of the Blue Book, arranged alphabetically by state, and within each state by city, as follows: 1. Springfield, Illinois: 6 expellers, capacity 125 tons. Storage capacity 200,000 bu. "Cargill" soybean oil meal. 2. Cedar Rapids, Iowa: Naptha [Naphtha] solvent plant, capacity 125 tons. Storage capacity 625,000 bu. "Cargill" soybean oil meal. "Cargill-Nutrena" feeds and pellets. 3. Fort Dodge, Iowa: 5 expellers, capacity 120 tons. Hexane solvent plant, capacity 100 tons. Storage capacity 500,000 bu. "Cargill" soybean oil meal. "Cargill-Nutrena" feeds and pellets. 4. Spencer, Iowa: Naptha solvent plant, capacity 40 tons. Storage capacity 80,000 bu. "Cargill" soybean oil meal. "Cargill-Nutrena" feeds and pellets. 5. Washington, Iowa: Naptha solvent plant, capacity 60 tons. Storage capacity 200,000 bu. "Cargill" soybean oil meal. "Cargill-Nutrena" feeds and pellets. 6. Minneapolis, Minnesota. No information is given on capacity or storage. "Cargill" soybean oil meal. "Cargill-Nutrena" feeds and pellets. President: John H. MacMillan, Jr. Vice-president: Dwayne O. Andreas.

Thus, Cargill's total soybean processing capacity is 570 tons. Cargill is doing no refining of soybean oil at this time. Their solvent extracted soybean meal contains 44% protein, and their expeller meal 41% protein.

Note: This is the earliest document seen (May 2005) that mentions "Nutrena" in connection with Cargill and soybeans.

52. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Port Cargill, Savage, Minnesota.
Date of Introduction: 1947 March.
Ingredients: Soybeans.
New Product–Documentation: Ad in *Soybean Digest.* 1947. March. p. 8. "7 reasons why soybeans offer better profit opportunity in 1947." Cargill now has 6 soybean crushing plants, including one in Port Cargill, Minnesota.

Ad in *Soybean Digest.* 1948. March. p. 8. "7 reasons why soybeans offer better profit opportunity in 1948." Cargill still has 6 soybean crushing plants in the USA.

Soybean Digest. 1949. June. p. 32. "Grits and flakes... A recent explosion of solvent vapors followed by fire at Cargill,

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Inc., soybean solvent extraction plant at Savage, Minnesota, resulted in serious injury to Al Ware, an employee. Damage to the plant was not extensive. The solvent vapors were ignited by a sparking switch in the switch room."

Lauser, Greg C. 1982. "History of Cargill's involvement in the soybean processing industry." Minneapolis, Minnesota. 5 p. Unpublished manuscript. In 1947 Cargill opened a soybean crushing plant at Savage, Minnesota.

53. *Soybean Blue Book.* 1947. Five companies owned or formerly owned by Sinaiko family members or in-laws (Document part). p. 47-54.

• ***Summary:*** The 1947 issue of the *Soybean Blue Book* contains listings (p. 47-54) for the following companies: 1. Galesburg Soy Products Co., 1021 S. Henderson St., Galesburg, Illinois. Family partnership: Max Albert, Anna Sinaiko Albert, Betty Albert, Eleanor Albert, and Lois Albert. 6 expellers with 150 tons capacity. Storage capacity: 425,000 bushels. "Triple Value" oil meal. Note: There is no listing for any soybean processing company in Galesburg, Missouri.

2. Quincy Soybean Products Co., 111 S. Front St., Quincy, Illinois. Irving J. Rosen. Plant manager: W.V. Simmons. Office manager: W.E. Sigafoose. 6 expellers with 100 tons capacity. Storage capacity: 600,000 bushels. "Purity" 41% protein soybean oil meal.

3. Iowa Milling Co., 411 6th St. N.E., Cedar Rapids, Iowa. Joe Sinaiko. Secretary: Samuel Maslon. 4 expellers with 70 tons capacity. Storage capacity: 270,000 bushels. "Hygrade" soybean oil meal. "Honeymead" and "Cremo" feeds and pellets.

4. Decatur Soy Products, 518 E. Gault St., Decatur, Illinois. Jasper Giovanna (president), A. Becker (vp), and Carl Sorling (secy, treas). 4 expellers with 85 tons capacity. Storage capacity: 500,000 bushels. "Illini" soybean oil meal.

5. Cargill, Inc., Springfield, Illinois. 6 expellers with 125 tons capacity. Storage capacity: 200,000 bushels. "Cargill" soybean meal.

Note 1. All of the above five plants use expellers; none uses solvent extraction. Cargill owns a soybean processing plant (naptha [naphtha] solvent) in Washington, Iowa. It makes "Cargill" soybean oil meal and "Cargill-Nutrena" pellets and feeds.

54. *Soybean Blue Book.* 1947. Processors of soybeans [USA and Canada]. p. 44-64.

• ***Summary:*** Processors are listed by state (alphabetically), and within each state alphabetically by city. For each firm is given the officers, brand names, type of processing equipment, processing capacity, and storage capacity. "Information was obtained through questionnaires sent directly to the processing companies.

Arkansas–Blytheville: Swift & Co. Little Rock: Rose City Cotton Oil Mill. West Memphis: Arkansas Mills.

California–Fresno: Oil Seed Products Co. Oakland: Albers Milling Co.

Illinois–Alhambra: Alhambra Grain & Feed Co. Bloomington: Funk Bros. Seed Co. Cairo: Cairo Meal and Cake Milling Co. Cairo: Swift & Co. Champaign: Swift & Co. Chicago: Allied Mills, Inc. Chicago: Central Soya Co., Inc. Chicago: The Glidden Co. Chicago: Spencer Kellogg & Sons. Chicago: Swift & Co. Decatur: Decatur Soy Products. Decatur: Spencer Kellogg & Sons. Decatur: A.E. Staley Mfg. Co. Galesburg: Galesburg Soy Products Co. Gibson City: McMillen Feed Mills. Kankakee: Bordens Soy Bean Products Co. Mascoutah: Ph.H. Postel Milling Co. Monmouth: Ralph Wells & Co. Nashville: Huegely Elevator Co. Pana: Shellabarger Soybean Mills. Peoria: Allied Mills, Inc. Quincy: Quincy Soybean Products Co. Roanoke: Eureka Milling Co. Rock Falls: Sterling Soybean Co. Springfield: Cargill, Inc. Taylorville: Allied Mills, Inc. Virden: Hulcher Soya Products.

Indiana–Bunker Hill: Ladd Soya Co. Danville: Hendricks County Farm Bureau Co-op. Assn. Decatur: Central Soya Co. Ft. Wayne: Central Soya Co. Frankfort: Swift & Co. Lafayette: Ralston Purina Co. Marion: Hoosier Soybean Mills. Portland: Haynes Soy Products. Rushville: Rush County Farm Bureau Co-op. Assn.

Iowa–Belmond: General Mills, Inc., Chemical Div. Cedar Rapids: Cargill, Inc. Centerville: Pillsbury Mills, Inc. Clinton: Pillsbury Mills, Inc. Des Moines: Spencer Kellogg & Sons, Inc. Des Moines: Swift & Co. Dike: Farmers Cooperative Co. Dubuque: E.E. Frith Co. Eagle Grove: Boone Valley Cooperative Processing Assn. Fairfield: Doughboy Industries. Fort Dodge: Borden's Soybean Processing Co. Fort Dodge: Cargill, Inc. Gladbrook: Central Iowa Bean Mill. Hubbard: Hubbard Soybean Mill, Inc. Iowa Falls: Ralston Purina Co. Manly: North Iowa Cooperative Processing Assn. Marshalltown: Marshall Mills, Inc. Martelle: Farmers Cooperative Elevator. Muscatine: Hawkeye Soy Products. Muscatine: Muscatine Processing Corp. Plainfield: Roach Soybean Mills. Quimby: Simonsen Mill–Rendering Plant. Ralston: Farmers Cooperative Assn. Redfield: Iowa Soya Co. Sac City: Williams Milling Co. Sheldon: Big 4 Cooperative Processing Assn. Sioux City: Sioux Soya Co. Spencer: Cargill, Inc. Washington: Cargill, Inc. Waterloo: Borden's Soy Bean Processing Co. West Bend: West Bend Elevator Co.

Kansas: Coffeeville [Coffeyville]: Consumers Cooperative Assn. Soybean Mill. Emporia: Kansas Soybean Mills, Inc. Girard: Farmers Union Jobbing Assn. Hiawatha: Thomson Soy Mill. Kansas City: Kansas Soya Products Inc. Wichita: Soy-Rich Products, Inc.

Kentucky–Henderson: Ohio Valley Soybean Cooperative. Louisville: Buckeye Cotton Oil. Co. Owensboro: Owensboro Grain Co.

Louisiana–Alexandria: Red River Cotton Oil Co.

Michigan–Concord: Concord Soya Corp. Saline: Soybrands, Inc.

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Minnesota–Mankato: Mankato Soybean Products, Inc. Minneapolis: Archer Daniels Midland Co. Minneapolis: Cargill, Inc. Minneapolis: General Mills, Inc. Minneapolis: Spencer Kellogg & Sons, Inc. Preston: Hubbard Milling Co.

Missouri–Kansas City: Ralston Purina Co. Kennett: Hemphill Soy Products Co. Mexico: M.F.A. Cooperative Grain & Feed Co. St. Joseph: Dannen Grain & Milling Co. St. Louis: Blanton Mill, Inc. St. Louis: Ralston Purina Co. Trenton: Central Farm Products Co.

Nebraska–Fremont: Fremont Cake & Meal Co. Lincoln: Gooch Milling & Elevator Co. Omaha: Allied Mills, Inc.

New York–Buffalo: Spencer Kellogg & Sons, Inc. Oswego: Oswego Soy Products Corp.

North Carolina–Clayton: Central Oil & Milling Co. Farmville: Farmville Oil & Fertilizer Co. Hartford: Southern Cotton Oil Co. New Bern: New Bern Oil & Fertilizer Co.

North Dakota–Grand Forks: North Dakota Mill & Elevator.

Ohio–Bellevue–Spencer Kellogg & Sons, Inc. Circleville: John W. Eshelman & Sons. Circleville: Ralston Purina Co. Cortland: Richards Milling Co. Delphos: Delphos Grain & Milling Co. Fostoria: Swift & Co. Lexington: Lexington Soy Products Co. Marion: McMillen Feed Mills, Inc. Ohio City: Holland Pioneer Mills, Inc. Painesville: A.E. Staley Mfg. Co. Springfield: Farm Bureau Cooperative Assn. Toledo: Toledo Soybean Products Co. Wooster: Soya Processing Co.

Oklahoma–Oklahoma City: Producers Cooperative Oil Mill.

Pennsylvania–Jersey Shore: Penna Soy Bean Co.

South Dakota–Sioux Falls: Western Soybean Mills.

Tennessee–Memphis: Buckeye Cotton Oil Co. Tiptonville: West Tennessee Soya Mill, Inc.

Virginia–Norfolk: Davis Milling Co., Portsmouth: Allied Mills, Inc. Portsmouth: Monsanto Chemical Co.

Wisconsin–Janesville: Janesville Mills, Inc.

Canada–Toronto: Dominion Linseed Oil Co. Toronto: Toronto Elevators Ltd. Toronto: Victory Mills, Ltd.

Note: This is the earliest document seen (Nov. 2007) which appears to show clearly that M.F.A. [MFA; Missouri Farmers Association] is now processing soybeans in Mexico, Missouri.

55. *Soybean Blue Book.* 1947. Soybean processors that make soybean pellets (Document part). p. 46-64.

• ***Summary:*** In the 1947 issue of the *Soybean Blue Book,* the section titled "Processors of soybeans" (p. 46-64) shows that the following companies make soybean pellets. They are listed alphabetically by state, and within each state, alphabetically by city: California: Oakland–Albers Milling Co. "Albers Quality Controlled" feeds and pellets.

Illinois: Chicago–Central Soya Co. "Master Mix" feeds and pellets. Chicago–Swift & Co. "Swifts" soybean oil meal and pellets. Decatur–Spencer Kellogg & Sons. "Spencer Kellogg's" 44% protein pellets. Decatur–A.E. Staley Mfg. Co. "Staley's" oil meal and pellets. Gibson City–McMillen Feed Mills. "Master Mix" feeds and pellets.

Indiana: Decatur–Central Soya Co. "Master Mix" feeds and pellets. Fort Wayne–Central Soya Co. "Master Mix" feeds and pellets. Rushville–Rush County Farm Bureau Co-op Assn. "Farm Bureau" soybean oil meal, mixed feeds, and pellets.

Iowa: Cedar Rapids–Cargill, Inc. "Cargill-Nutrena" feeds and pellets. Cedar Rapids–Iowa Milling Co. "Honeymead" and "Cremo" feeds and pellets. Centerville–Pillsbury Mills, Inc. "Pillsbury's Best" feeds and pellets. Clinton–Pillsbury Mills, Inc. "Pillsbury" soybean oil meal, feeds and pellets. Des Moines–Spencer Kellogg & Co. "Spencer Kellogg's" 44% Protein Toasted soybean oil meal and pellets. Des Moines–Swift & Co. "Swifts" soybean oil meal and pellets. Eagle Grove–Boone Valley Cooperative Processing Association. "Co-op" soybean oil meal, feeds and pellets. Fairfield–Doughboy Industries. "Doughboy" oil meal, feeds and pellets. Fort Dodge–Cargill, Inc. "Cargill-Nutrena" feeds and pellets. Ralston–Farmers Cooperative Association. "Farmers" soybean oil meal and pellets. Sac City–Williams Milling Co. "Williams" soybean oil meal, feeds and pellets. Sioux City–Sioux Soya Co. "Su Soy" soybean oil meal and pellets. Spencer–Cargill, Inc. "Cargill-Nutrena" pellets and feeds. Washington–Cargill, Inc. "Cargill-Nutrena" pellets and feeds.

Kansas: Coffeeville–Consumers Cooperative Processing Association. "Co-op" soybean oil meals and pellets. Emporia–Kansas Soybean Mills, Inc. "Sunflower" soybean oil meal, pellets, and feeds. Hiawatha–Thomson Soy Mill. "Scotch" soybean oil meal and pellets. Kansas City–Kansas Soya Products, Inc. "Sunflower" soybean oil meal and pellets. Wichita–Soy-Rich Products, Inc. "Four Leaf Clover" soybean oil meal and pellets.

Minnesota: Minneapolis–Archer-Daniels- Midland Co. "Archer Brand" soybean oil meal, pellets and feeds. Minneapolis–Cargill, Inc. "Cargill-Nutrena" feeds and pellets. Preston–Hubbard Milling Co. "Sunshine" feeds and pellets.

Missouri: Kennett–Hemphill Soy Products. "Circle H" soybean oil meal and pellets. Mexico–M.F.A. Cooperative Grain & Feed Co. "M.F.A. oil meal, feeds and pellets. St. Joseph–Dannen Grain & Milling Co. "Dannen" soybean oil meal, feeds and pellets.

Nebraska: Fremont–Fremont Cake & Meal Co. "Pete Marr" soybean oil meal and pellets.

North Dakota: Grand Forks–North Dakota Mill & Elevator. "Dakota Maid" soybean oil meal, feeds and pellets.

Ohio: Circleville–John W. Eshelman & Sons. "Eshelman Red Rose" soybean oil meal, feeds and pellets. Marion–McMillen Feed Mills, Inc. "Master Mix" feeds and pellets. Ohio City–Holland Pioneer Mills. "Lucky Strike" soybean oil meal, feeds and pellets. Wooster–Soya Processing Co.,

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"Wooster" soybean oil meal, feeds and pellets.

Oklahoma: Oklahoma City–Producers Cooperative Oil Mill. "Co-op" soybean oil meal and pellets.

South Dakota: Sioux Falls–Western Soybean Mills. "Sioux" soybean oil meal, feeds and pellets.

56. Walsh, Robert M. 1947. Soybean production–Here and abroad: And possible competition from other oilseeds. *Soybean Digest.* May. p. 18-21.

• ***Summary:*** Editor's note: "It may be 10 or 15 years before world oilseed supplies become excessive, the author says."

Contents: Introduction: Soybean production concentrated in China, Manchuria, and USA, uses of soybeans oil. War-time role. Short during the war. Early postwar situation. Possible future developments. Long time [term] outlook.

"Before the war, Asia produced 400 million bushels of soybeans a year; the United States 56 million." China was the leading producer, with slightly over 200 million bushels/year–all of which was used domestically. Manchuria produced about 150 million bushels/year and was the world's chief exporter. "The United States, Korea, Japan, and the Netherlands Indies [today's Indonesia] were the only remaining producers of any consequence. Contrary to popular belief, output in southeastern Europe was extremely small."

In the USA, production grew from 5 million bushels in 1924 (mostly for seed use) to 23 million bushels in 1934, with an increasing percentage "going to oil mills for crushing. The severe drought of 1934 was a notable factor leading to the present day importance of soybeans as a cash crop in the United States. Soybeans proved to be more drought-resistant than corn. In 1935 farmers more than doubled their 1934 production." By 1939 production had reached 90 million bushels.

"Drought related shortages of lard in 1935-37 resulted in a rapid gain in the use of soybean oil in shortening." Between 1935 and 1939, soybean oil went from being used mostly in nonfood industrial products (paint and related products was the biggest use in 1935) to being used mostly in food products (such as shortening and margarine). Cottonseed oil was still the main liquid oil used in processed foods and linseed oil was still the main oil used in "drying-oil products."

"To sum up, soybean oil made notable gains in production and use during the late 1930's. This upward movement was sharply accelerated by the war which followed.

"War-time role: Throughout most of 1940 the United States had large supplies of domestic and imported oils, and prices were low. And our consumption of fats in 1941 was the largest in peace-time history. Real trouble began in 1942. Imports fell abruptly after the Japanese attack on Pearl Harbor. The United States had been dependent on Pacific sources for about half its imports of fats and oils. In the five years 1937-41, imports had averaged 2 billion pounds annually. From 1942 through 1946, yearly imports were less than half that amount. The major loss was in coconut oil," followed by palm oil from the Netherlands Indies, and tung oil from China. In addition, the U.S. had previously lost nearly 100 million pounds of olive oil from the Mediterranean region, and fairly large amounts of fish- and fish-liver oils from the European North Atlantic area.

During World War II, the U.S. government acted to increase domestic oil production and to ration supplies. Soybean production increased. "To induce larger output, AAA [Agricultural Adjustment Administration] restrictions on soybean acreage were partially relaxed in June 1941. The government offered to support prices of 1941-crop soybeans at approximately $1 per bushel. These actions, together with rising market prices, brought forth an increase of over 1 million acres in soybeans harvested for beans.

"An all-out war production program for oilseeds was launched in 1942. High production goals were set for soybeans, flaxseed, and peanuts... Large-scale increases in livestock production were fostered."

Production of soybean oil showed steady gains throughout the war, rising from some 500 million pounds in the 1940 season, to 1,200 million pounds in the 1942 season, and reaching a peak of 1,400 million pounds in 1945-46.

A graph shows "Soybeans harvested for beans: Production, crushings, and price, United States, 1924-46." The upper graph shows U.S. soybean production and crushings in millions of bushels. The lower graph shows the price received by farmers in dollars/bushel and the "comparable price (September 15)."

Photos show: (1) A storage yard of a Manchurian grain and soybean merchant. (2) The new flax and soybean plant of Cargill, Inc. at Port Cargill, Savage, Minnesota. Address: Special Asst. to the Chief, Bureau of Agricultural Economics [USDA].

57. MacGee, A. Ernest. 1947. Vegetable oil extraction solvents; History and general chemical composition. *Oil Mill Gazetteer* 52(1):17-21, 35-43. Aug. [53 ref]

• ***Summary:*** The growth of the vegetable and animal oil extraction industry since 1930 has been rapid and astonishing. Many parallels can be found with George Stephenson's invention and persistent development of the locomotive in England in the early 1800s. In 1930 Clarence F. Eddy predicted a bright future for larger oil mills using continuous, counter-current solvent extraction. In 1933 David Wesson recounted the history of his work with cottonseed oil (from 1889) and with solvent extraction of cottonseed oil (from about 1900 to 1917), using benzine and low end point-high test gasoline. A mill in New Orleans (Louisiana) ran from 1917-1919, first using aviation type gasoline, later using benzol.

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Concerning early solvent extraction of soybeans: Piatt County Soybean Cooperative Co., Monticello, Illinois, operated a batch plant with a capacity of 8 tons/day for about 6 months in 1923-24 using benzol as a solvent. In 1924 the Eastern Cotton Oil Co., Norfolk, Virginia, used a continuous extractor of about 80 tons/day capacity.

Solvent extraction was apparently patented in England in 1856 and had become fairly well established in Europe by about 1870. However these early solvent extraction plants were of the "batch" type and had fairly small capacities, with no means of agitation. In about 1900 the solvent countercurrent principle was introduced in Europe by combining several consecutive batch extractors. Next came the introduction of the "continuous" type extractor. The first two successful continuous extraction plants processing large volumes in the 1920s were: (1) The Hansa-Muehle, A.G., Hamburg, Germany, using the "Bollmann" extractor, and (2) the Extractochemie, A.G., Zurich, Switzerland (but originally of Harburg, Germany) using the "Hildebrandt" extractor. At Hansa-Muehle in 1928 the central plant, consisting of four extractor units with a combined capacity of over 1,000 tons/day, was put into operation. By 1934 a number of continuous solvent plants were operating in Europe.

In the USA, the first large-scale plant of this type was that of the Archer-Daniels-Midland Company, Chicago, Illinois. In March 1934 it began operating using a "Hildebrandt" extractor to process 100 tons/day of soybeans. The solvent was petroleum naphtha of the hexane type. As of 1947, this plant is still in operation.

The ADM plant in March 1934 represented a "turning point and marked the beginning of the large scale edible oil extraction industry as it is known today." Installations of other large-capacity continuous solvent extraction plants followed in rapid succession:

1934 Nov.–The Glidden Company, Chicago, Illinois, began operating a continuous solvent soybean plant of 100 tons per day capacity.

1937 Nov.–the 400 tons per day plant of the Central Soya Co., Decatur, Indiana, began operation.

1938 Oct.–Honeymead Products Co. Cedar Rapids, Iowa, began operating a continuous solvent soybean plant with 100 tons per day capacity. By Aug. 1947 this plant was owned by Cargill, Inc.

By 1947 an estimated 33% of the soybean processing capacity operating in the USA used the solvent extraction process. Schiffman (1945) reported that of the estimated 4.25 million tons soybean processing capacity on 1 Oct. 1945, only 27% of the capacity in operation was of the solvent type, but 64% of the total capacity under construction on that date was of the solvent type.

Table 1 shows the tonnage and percentage of soybeans processed by expeller, solvent and hydraulic methods from 1936 to 1940. Expeller increased from 68.5% to 74.2%. Solvent increased from 13.2% to 23.1%. Hydraulic decreased from 18.5% to 2.7%.

The largest soybean solvent plant in the USA today is that owned by A.E. Staley Manufacturing Co., Decatur, Illinois. Costing $2 million and having a capacity of 650 tons per day, it went on stream in March 1945. The extraction tower was supplied by French Oil Mill Machinery Co. and it used a "petroleum hexane-type solvent of 146 to 156 degrees F. general boiling range."

Two events that occurred during the 1930s were of vital importance to the rapid growth and widespread application of the solvent extraction process in the oil and fat industries: (1) The perfecting of large volume, continuous processing equipment, and (2) the development of light petroleum naphthas of the hexane and heptane types. Address: Manager Skellysolve Sales, Skelly Oil Co., Kansas City, Missouri.

58. *Shakopee Argus-Tribune* (*Shakopee, Minnesota*). 1947. Fire Tuesday at Cargill's. Sept. 18. p. 1.
• ***Summary:*** A smouldering fire at the Cargill flax mill at Savage started about 3 a.m. on Tuesday, Sept. 16 and was fought for 3 hours. An accumulation of dust in a hopper in the upper section of an elevator, was believed to have been ignited by a spark. Damage was believed to have been light.

Talk with Joe Givens, former manager of Dawson Mills for 28 years. 2001. June 1. Savage is a small town just south of Minneapolis. Almost nobody lives in Savage and it may not even have a newspaper. Shakopee is about 10 miles west of Savage. The story of a 1955 explosion at the Cargill plant in Savage would probably be found in a Minneapolis newspaper, such as the *Minneapolis Star Tribune.*

59. *Shakopee Valley News* (*Shakopee, Minnesota*). 1947. Firemen battle Cargill flax fire. Sept. 18. p. 1.
• ***Summary:*** A smouldering fire at the Cargill flax mill at Savage started about 3 a.m. on Tuesday, Sept. 16.

60. Cargill, Inc. 1947. Soybean growers–Get highest prices (Ad). *Soybean Digest.* Sept. p. 49.
• ***Summary:*** Mills at: Spencer, Iowa. Ft. Dodge, Iowa. Springfield, Illinois. Washington, Iowa. Cedar Rapids, Iowa. Port Cargill, Savage, Minnesota.

61. Cargill, Inc. 1947. Fire or explosion in solvent extraction plant. Washington, Iowa. Nov. 15.
• ***Summary:*** *Evening Journal* (Washington, Iowa). 1947. "Damage by fire at Cargill plant is undetermined." Nov. 17. p. 1-2. The fire started on Saturday, Nov. 15, in the solvent extraction unit. It was apparently caused by a spark. No one was injured.

Short article in *Soybean Digest.* 1948. March, p. 15. "Iowa mill fire." "A fire in the solvent extraction plant of Cargill, Inc., at Washington, Iowa, in December was confined to that unit with damage probably under $200,000, according to reports reaching the *Soybean Digest.*

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"The fire did not spread to the Cargill feed mixing mill or the concrete storage bins which have a capacity of 200,000 bushels.

"Reports were that the fire started when a spark from an electric switch ignited solvent fumes, but this was not confirmed by the management, according to *Washington Journal.* The plant had been shut down for the installation of new machinery. When the power was turned on there was a burst of flame in the solvent material, according to the *Journal.* Nobody was injured. Naptha solvent is employed at the plant, which has a daily capacity of 60 tons of soybean oil meal."

Letter from Joe Givens of Edina (near Minneapolis), Minnesota. 2005. May 8. In the 1940s and 1950s, the extraction industry was plagued by hexane explosions in solvent extraction plants. Cargill had a number of hexane explosions, including one in their plant at Washington, Iowa, in about 1947–in the winter. Note: In 1946 Cargill acquired their soybean crushing plant in the Washington, Washington County, Iowa. Located midway between Iowa City and Fairfield, Iowa.

Letter (e-mail) from Joe Givens with more basic information about explosion or fire. 2005. Aug. 8. Magnitude: 5 (where 10 is the most severe). Talk with Joe Givens. 2005. Aug. 20. This extractor was made by V.D. Anderson Co. It was located outdoors and there was no building over it. The preparation area was inside of a concrete building. The vertical extractor had a plug in the bottom that kept the solvent and the flakes in the extractor. A mechanical weight on a lever arm was all that held the solvent and the flakes in the extractor. Joe worked on that plant. In cold weather, he rode up and down on that weight to be sure it worked. It was a problem in cold weather. He does not know it that was related to the explosion at this plant.

Talk with Jean, reference librarian at Washington, Iowa, public library. 2006. July 11. She just talked to Howard Lunning, a local resident, who remembers watching the fire. Address: Washington, Iowa.

62. *Evening Journal* (*Washington, Iowa*). 1947. Damage by fire at Cargill plant is undetermined. Nov. 17. p. 1-2.
• ***Summary:*** When Hugo Lensch, manager of the Cargill soybean plant in Washington, Iowa, was "asked for a statement today about the amount of damage and other details connected with the fire at the plant late Saturday" (Nov. 15), he said that any such company statement would have to come from Edward J. Grimes, Cargill's public relations officer in Minneapolis, Minnesota.

"But efforts to reach Mr. Grimes were unavailing," even though the Journal reached his office three times by phone, and was promised twice that he would soon be on the wire.

The fire, which started at about 5:00 Saturday afternoon, was confined to the solvent extraction unit at Cargill's plant in Washington. It did not reach or affect Cargill's nearby feed mill or the large concrete bins where soybeans are stored, or the storage tanks filled with liquid solvent. The "appearance of the building in which the extracting [solvent extraction] unit is housed indicates that" a good deal of time and reconstruction will be required before work can be resumed there.

There were unofficial reports "that the fire started when a spark from an electric switch ignited solvent fumes, but this was not confirmed by the [Cargill] management. The plant had been shut down for the installation of new machinery and when the power was turned on there was a burst of flame in the highly inflammable solvent material.

"Only a few men were in the department when the fire started, and they all got out without being" burned or injured. "When the solvent caught fire, the room became a mass of flames and the fire was one that could not be controlled until it burned itself out."

"It was a spectacular fire and attracted many spectators. From the front view the plant bears no scars of fire, as the extraction unit is at the rear."

63. *Chicago Daily Tribune.* 1947. List 771 'big' grain dealers: Midwest area men are named. Tell Lindheimer, Rice holdings. Dec. 23. p. 1.
• ***Summary:*** "A [partial] list of 711 names of 'big traders' in commodity markets was made public in Washington [DC] yesterday by Agriculture Secretary Anderson." The names listed were mainly those of professional market operators, brokers, food processors and other commercial interests. The nature of the interests of each individual or company on the list was classified by Anderson as either "long" or "short," and as either "hedging," "speculative" or "spreading." A long interest is one in which a trader contracts to buy a commodity (such as wheat or soybeans) at a certain price in the future. A short trader is one who contracts to deliver a commodity in the future at an agreed price.

Companies listed included: Cargill, Inc. (Minneapolis [Minnesota]). Continental Grain Co. (Chicago, Illinois). Honeymead Products Co. (Cedar Rapids, Iowa). Ralston Purina Co. (St. Louis, Missouri).

64. Polk's Cedar Rapids city directory. 1947. Cedar Rapids, Iowa. See p. 102.
• ***Summary:*** Under the personal listings (p. 102) are three entries for Cargill: (1) Cargill Inc., C.W. Bohlander, Mgr., Processors of soybeans and manufacturers of feeds, 850 10th S.W. Tel. 2-3106. Note: This is the address of the former Honeymead Products Co. plant. (2) Cargill Inc. W.D. Smith, branch mgr., grain. 520 Merchants Natl. Bank bldg. (3) Cargill Products plant, 1210 12th av. S.W. Address: Cedar Rapids, Iowa.

65. Wherry, Larry. 1947. The golden anniversary of scientific feeding. Milwaukee, Wisconsin: Business Press. 120 p. No

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index. 22 cm.
• ***Summary:*** American Mfgrs. Assoc. calls it the only history of feed manufacturing in the U.S. Scientific feeding was built on an understanding of the importance of protein and a realization that protein was often the limiting factor in the production of meat, milk and eggs. Early sources of protein were often by-products, such as corn gluten and cottonseed meal.

Appendix I, titled "Chronological history of feed manufacturing," covers the period 1875-1945 in the USA. Some important dates:

1864–Emil Wolff, a German chemist, publishes his first feeding standards. Known as the Wolff-Lehmann standards, they indicated the amount of crude protein needed by different classes of animals; however they were not widely used.

1875–John W. Barwell of Leicester, England, brings a feed manufacturing business to the USA, locating in Chicago and Waukegan, Illinois.

1886–Albers Milling Co. is founded by Bernard Albers at Seattle, Washington. In 1895 they began manufacturing feeds. In 1929 this company merged with the Carnation Company. By 1947 Albers operated five feed mills: Seattle, Washington; Portland, Oregon; Oakland, California; Los Angeles, California; and Peoria, Illinois.

1894–Robinson-Danforth Commission Company, St. Louis, Missouri, begins making mixed feeds. In 1898 the brand name "Purina" is adopted, and Purina Mills become part of the new corporation, Ralston Purina Co., headed by William H. Danforth. By 1947 they operated more than 30 feed mills.

1896–Dr. C. Lehmann, of the Berlin Agricultural High School, modifies Wolff's feeding standards to create the Wolff-Lehmann standards, which soon become widely used in Europe and the United States in computing livestock rations; they emphasized that protein was often the limiting factor in the production of meat, milk, and eggs. One of the first protein supplements was corn gluten feed. The American Glucose Co. in Buffalo, New York, sold a feed called "Buffalo Feed." After about 1900 cottonseed meal, and tankage and meat scraps from packing houses, started to be widely used.

1898–American Milling Company organized as a consolidation of Marsden Company and American Milling Company, by Colonel A.G. Winter. Plants at Owensboro, Kentucky; Peoria, Illinois; Linden, Indiana. Note: American Milling Co. later became part of Allied Mills, which crushed soybeans in the plant at Peoria, Illinois.

1904–Northrup King Co. begins manufacturing feeds at Minneapolis, Minnesota. Founded by J.E. Northrup, Preston King, and C.C. Massie.

1920–Nutrena Mills, Kansas City, Kansas, founded by Van Roy Miller. Note: in Oct. 1945 Cargill purchased (for $1.6 million) the three Nutrena feed mills at Kansas City, Kansas; Coffeyville, Kansas, and Sioux City, Iowa.

1920–Pillsbury Flour Mills Co., Minneapolis, Minnesota, begins manufacturing livestock and poultry feeds. Name in 1947: Pillsbury Mills, Inc.

1925–Purina Experimental Farm established by Ralston Purina Co. at Grays Summit, Missouri.

1928–General Mills, Inc. is organized, including Washburn Crosby Company, Red Star Milling Company, Royal Milling Company, Kalispell Flour Mills Company and Rocky Mountain Elevator Company.

1929–Allied Mills, Inc., is formed as a result of the merger of American Milling Company and the McMillen Company. The principal brand names of these predecessor companies, namely "Amco" and "Wayne" were continued after the merger. Now (probably meaning in 1947) operates 7 major feed plants: Peoria, Illinois; Omaha, Nebraska; Fort Wayne, Indiana; East St. Louis, Illinois; Buffalo, New York; Memphis, Tennessee; and Portsmouth, Virginia.

1932–Honeymead Products Company, Cedar Rapids, Iowa, founded by R.P. Andreas. Operating 3 mills... one at Cedar Rapids, one at Spencer, and one at Washington, Iowa. The firm name was originally "Andy's Feeds, Inc.," changed to "Honeymead" in 1936. Note: In 1938 the Honeymead name was first used; the family-owned Honeymead plant began operating in Cedar Rapids in Oct. 1938. In 1944 the Honeymead plant in Spencer, Iowa, began operation, followed in early 1945 by the plant in Washington, Iowa.

1933–Archer Daniels Midland Company [feed mill], Minneapolis, Minnesota, founded by George A. Archer and John W. Daniels.

1935–McMillen Feed Mills, Inc., Division of Central Soya Company, Inc., founded by D.W. McMillen, Sr. Operates 4 feed mills: Decatur, Indiana; Gibson City, Illinois; Harrisburg, Pennsylvania; and Marion, Ohio.

1936–The Glidden Company of Cleveland, Ohio, began manufacturing feeds under the name of Holland Mills, at Piqua, Ohio. This plant was later destroyed by fire, but feed operations were reestablished at Indianapolis as the Glidden Co. Feed Mill Division with brand names of Glidden and Capitol.

1938–Cargill, Inc., of Minneapolis, Minnesota, founded in 1865 by W.W. Cargill, begins manufacturing feeds. In 1945 they bought the Honeymead plant in Cedar Rapids. As of 1947 they operate feed plants at: Minneapolis; Cedar Rapids, Iowa (two plants); Fort Dodge, Iowa; Spencer, Iowa. Address: Chicago, Illinois.

66. *Soybean Digest.* 1948. Grits and flakes... from the world of soy: Toledo Board of Trade. Feb. p. 28.
• ***Summary:*** "Duane L. Norby, Toledo manager Cargill, Inc., was recently reelected for his second term as president of the Toledo Board of Trade."

67. *Soybean Digest.* 1948. Iowa mill fire. March. p. 15.

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• ***Summary:*** A fire in the solvent extraction plant of Cargill, Inc., at Washington, Iowa, in December was confined to that unit with damage probably under $200,000, according to reports reaching the *Soybean Digest.*

"The fire did not spread to the Cargill feed mixing mill or the concrete storage bins which have a capacity of 200,000 bushels.

"Reports were that the fire started when a spark from an electric switch ignited solvent fumes, but this was not confirmed by the management, according to *Washington Journal.* The plant had been shut down for the installation of new machinery. When the power was turned on there was a burst of flame in the solvent material, according to the Journal. Nobody was injured.

"Naptha [Naphtha] solvent is employed at the plant, which has a daily capacity of 60 tons of soybean oil meal."

68. *Soybean Digest.* 1948. Grits and flakes... from the world of soy: Cargill to establish company in Brazil. May. p. 44.
• ***Summary:*** "Cargill, Inc., Minneapolis, Minnesota, and the International Basic Economy Corp., New York City, announce plans to establish a company in Brazil to merchandise and process oilseed and grain products. Cargill will provide the managerial and technical staff."

69. USDA Northern Regional Research Laboratory. 1948. Soybean processing mills in the United States. *USDA Bureau of Agricultural and Industrial Chemistry.* CA-5. 14 p. Sept.
• ***Summary:*** Footnote: "This is a revision of AIC-26 [Nov. 1943]–Revised June 1946 under the same title."

"The following list of soybean processing mills is divided into three parts: (1) Mills specializing in soybeans. (2) Mills processing soybeans on part-time basis. (3) Distribution of soybeans processed by solvent extraction, screw press, and hydraulic press methods (Estimates based on data compiled by Bureau of the Census in cooperation with the Northern Regional Research Laboratory). A year by year table from crop year 1936-37 to 1946-47 (Oct. to Oct.) shows the number of tons processed and the percentage of the total processed by each of the three processes. The percentage processed by solvent extraction doubled from 13.2% to 26.6% while the percentage processed by hydraulic press dropped by half from 18.4% to 9.5%. The total tons of soybeans processed rose 8.2 fold from 619 to 5,107 during the 11 year period.

Processors are listed by state (alphabetically), and within each state alphabetically by city. Three symbols are used (in parentheses) to express each plant's processing capacity in tons of soybeans per day: S = Small–less than 50. M = Medium–50 to 200. L = Large–more than 200. Three other symbols are used to express the type of soybean processing equipment used: X = Extraction (solvent). P = Screw press [or expeller]. H = Hydraulic press.

"1. Mills specializing in soybeans. Arkansas–West Memphis: Arkansas Mills, Inc. (MX). Wilson: Wilson Soya Corporation (MXP). Delaware–Laurel: Laurel Processing Co. (SX).

"Illinois–Alhambra: Alhambra Grain and Feed Co. (SP). Bartonville: Allied Mills, Inc. (LP). Bloomington: Funk Brothers Seed Co. (MP). Ralston Purina Co. (LX). Champaign: Swift and Co. (LXP). Chicago: Archer-Daniels-Midland Co. (MX). The Glidden Co. (LXP). Spencer Kellogg and Sons, Inc. (LP). Colchester: Colchester Processing Co. (SP). Decatur: Archer-Daniels-Midland Co. (LXP). Decatur Soy Products Co. (MP). Spencer Kellogg and Sons, Inc. (LXP). A.E. Staley Manufacturing Co. (LXP). Galesburg: Galesburg Soy Products Co. (MP). Gibson City: Central Soya Co., Inc. (LXP). Kankakee: Borden's Soy Processing Co. (MX). Mascoutah: Phillip H. Postel Milling Co. (SP). Monmouth: Ralph Wells and Co. (SP). Nashville: Huegly Elevator Co. (SP). Norris City: Norris City Milling Co. (SP). Pana: Shellabarger Soybean Mills (MP). Poplar Grove: Northern Illinois Processing Corporation (SP). Quincy: Quincy Soybean Products Co. (MP). Roanoke: Eureka Milling Co. (SP). Rock Falls: Sterling Soybean Co. (SP). Springfield: Cargill, Inc (MP). Taylorville: Allied Mills, Inc. (MX). Virden: Hulcher Soy Products Co. (SP).

"Indiana–Bunker Hill: Ladd Soya, Inc. (MP). Danville: Hendricks County Farm Bureau Cooperative Association (SX). Decatur: Central Soya Co., Inc. (LXP). Frankfort: Swift and Co. (MX). Indianapolis: The Glidden Co. (LX). Lafayette: Ralston Purina Co. (MP). Marion: Hoosier Soybean Mills (MP). Oaktown: Knox County Farm Bureau Cooperative Association (SP). Portland: Haynes Soy Products, Inc. (MP). Rockport: Martin Serrin Co., Inc. (SP). Rushville: Rush County Farm Bureau Cooperative Association (SP). Wabash: Wabash County Farm Bureau Cooperative Association (SP).

"Iowa–Belmond: General Mills, Inc. (LX). Cedar Rapids: Cargill, Inc. (MX). Iowa Milling Co. (MP). Centerville: Pillsbury Mills, Inc. (MP). Clinton: Pillsbury Mills, Inc. (MX). Des Moines: Spencer Kellogg and Sons, Inc. (LX). Swift and Co. (MP). Dike: Farmers Cooperative Association (SP). Dubuque: E.E. Frith Co. (SP). Eagle Grove: Boone Valley Cooperative Processing Association (SP). Fairfield: Doughboy Industries, Inc. (MP). Fayette: Fayette Soybean Mill (SP). Fort Dodge: Cargill, Inc. (LXP). Gladbrook: Central Iowa Soybean Mill (MP). Hubbard: Boone Valley [Cooperative] Processing Association (SP). Iowa Falls: Ralston Purina Co. (LXP). Manly: North Iowa Cooperative Processing Association (SP). Marshalltown: Marshall Mills, Inc. (SP). Martelle: Farmers Cooperative Elevator (SP). Muscatine: Hawkeye Soy Products Co. (SP). Muscatine Processing Corporation (MX). New Hampton: Eastern Iowa Milling Co. (SP). Plainfield: Roach Mills (SX). Quimby: Simonsen Mill Rendering Plant (MP). Ralston: Farmers Cooperative Association (SP). Redfield: Iowa Soya Co. (MX). Sac City: Williams Milling Co. (MP). Sheldon:

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Big Four Cooperative Processing Association (MP). Sioux City: Sioux Soya Co. (MP). Spencer: Cargill, Inc. (SX). Washington: Cargill, Inc. (MX). Waterloo: Borden's Soy Processing Co. (LXP). West Bend: West Bend Elevator Co. (SP).

"Kansas–Coffeyville: Consumers Cooperative Association Soybean Mill (MP). Emporia: Kansas Soya Products Co., Inc. (MXP). Girard: Farmers Union Jobbers Association (SP). Hiawatha: Thomson Soy Mill (SX). Kansas City: Kansas Soya Products Co., Inc. (MP). Wichita: Soy-Rich Products, Inc. (MXP). Kentucky–Henderson: Ohio Valley Soybean Cooperative (MXP). Louisville: Buckeye Cotton Oil Co. (LXP). Louisville Soy Products Corporation (MX). Owensboro: Owensboro Grain Co. (MXP).

"Maryland–Baltimore: Soya Corporation of America (MP). Michigan–Concord: Concord Soya Corporation (SP). Saline: Soybrands, Inc. (SX). Minnesota: Lakeville: Consumers Soybean Mills, Inc. (MP). Mankato: Honeymead Mankato, Inc. (LXP). Minneapolis: Crown Iron Works Co. (SX). Preston: Hubbard Milling Co. (SP).

"Missouri–Kansas City: Ralston Purina Co. (MP). Kennett: Hemphill Soy Products Co. (MP). Mexico: MFA Cooperative Grain and Feed Co. (MP). New Madrid: Buckeye Cotton Oil Co. (MX). St. Joseph: Dannen Mills, Inc. (MXP). St. Louis: Blanton Mill, Inc. (MP). Ralston Purina Co. (MP). Pennsylvania–Jersey Shore: Pennsylvania Soybean Cooperative Association (SP). Rossmoyne Processing Co. (?). Paoli: The Great Valley Mills (?). South Dakota–Sioux Falls: Western Soybean Mills (MP).

"Tennessee–Tiptonville: West Tennessee Soya Mill, Inc. (LXP). Virginia–Harrisonburg: Central Chemical Corporation of Virginia (SP). Norfolk: Davis Milling Co. (SP). Portsmouth: Allied Mills, Inc. (MP). Wisconsin–Janesville: Janesville Mills, Inc. (SP). Menomonie: Northwest Cooperative Mills (SP).

"Mills processing soybeans on part-time basis." Alabama (6 mills), Arkansas (13), California (7), Florida (1), Georgia (7), Illinois (2), Iowa (2), Kansas (1), Louisiana (9), Minnesota (2), Mississippi (13), Missouri (1), New York (2), North Carolina (14), North Dakota (1), Ohio (2), Oklahoma (13), Pennsylvania (2), South Carolina (4), Tennessee (4), Texas (27), Wisconsin (1).

Note: This is the earliest document seen (June 2018) that mentions Crown Iron Works Co. in connection with soybeans or with solvent extraction plants.

70. *Soybean Digest.* 1948. Grits and flakes... from the world of soy: Minneapolis Grain Exchange. Nov. p. 42.
• ***Summary:*** "Arthur M. Hartwell, vice president of General Mills, Inc., has been elected president of the Minneapolis Grain Exchange. R.C. Woodworth, assistant to the president, Cargill, Inc., was named second vice president; and Philip S. Duff, vice president Archer-Daniels-Midland Co., was elected to the board of directors."

71. National Soybean Processors Association. 1948. Year book, 1947-1948 (Association year). Chicago, Illinois. 71 p.
• ***Summary:*** The section titled "Officers, directors, and committees" (p. 12-15) lists the following standing committees and the companies and individuals that are members of each: Traffic and Transportation, Research, Technical, Soybeans Grades and Contracts, Oil Trading Rules, Meal Trading Rules, Crop Improvement, Soybean Research Council, Trade Development, Edible Soybean, Uniform Rules and Standards for Soybean Oil Meal, Fire Insurance Committee.

The following organizations and individuals are members of NSPA: Allied Mills, American Soybean Association (George M. Strayer), Archer-Daniels-Midland Co., Borden's Soy Processing Co., Buckeye Cotton Oil Co., Cargill, Inc., Central Soya Co., Clinton Industries, Inc., Decatur Soy Products Co. Drackett Co., Durkee Famous Foods, Funk Bros. Seed Co. (E.D. Funk, Jr.), General Mills, Inc., Glidden Co., Gooch Milling and Elevator Co., Hoosier Soybean Mills, Inc., Iowa Milling Co., Louisville Soy Products Corp. (E.F. Johnson), Northern Regional Research Laboratory, Pillsbury Feed Mills, Ralph Wells and Company, Ralston Purina Co., Roach Soybean Mills (Howard L. Roach), Shellabarger Soybean Mills, Simonsen Mill-Rendering Plant, Sioux Soya Co., Southland Cotton Oil Co., Soya Processing Co., Spencer Kellogg Co., Swift & Company, Toledo Soybean Products Co. Address: 3818 Board of Trade Building, Chicago 4, Illinois.

72. *Business Week.* 1949. Cargill reaps new harvest: Grain giant has built a mighty business on little grains of wheat. Its multimillion-dollar activities cover shipping, farm merchandising, irrigation. Now it's trying new agricultural fields. April 16. p. 65-68, 70, 72, 74, 76-78.
• ***Summary:*** Cargill is a family-owned grain marketing and merchandising house. John H. MacMillan, Jr., president and grandson of the founder, discusses the company's plan to diversify into processing more crops, including sunflower, safflower, and soybeans. For years Cargill has been America's biggest grain company–and one of the top 3 or 4 firms in the world grain trade. It has the greatest storage capacity of any U.S. company and operates the world's largest grain elevator. Today Cargill handles more than 10 million tons a year of farm products. An estimated $150 million in capital is tied up in Cargill's operations.

During the period just prior to World War II, as much as 60% of Cargill's business had one end outside the USA. The war shut off this trade and it has never really recovered. Faced with this problem, Cargill decided to diversify in the field of agriculture. During and just after World War II, Cargill entered into two non-grain lines–vegetable oils and animal feeds. Today, 17% of Cargill's dollar volume comes from these two non-grain activities, plus seeds and

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farm supplies. Now Cargill is letting contracts for a solvent extraction plant in Chicago to process soybeans. Located on the Calumet River, next to the company's big grain elevators, the plant will be able to handle 700 tons of soybeans daily.

Contains an excellent, lengthy history of the company. In 1865 the founder, W.W. Cargill, at the age of 21, began buying an interest in country elevators in northern Iowa. As the railways reached farther across the central states in the years after the Civil War, young Cargill followed them.

Photos show: (1) Portrait of "Austen S. Cargill, executive vice president, is son of founder W.W. Cargill." (2) "Cargill MacMillan, vice president and comptroller, is brother of the president." (3) "E.J. Grimes, another vice-president, is one of the brains that keep Cargill moving." (4) "Modern barges, developed for efficient use of inland waterways, got Cargill into..." (5) "Naval vessels, like this tanker. All told, Cargill built 18, plus four Army vessels." (6) "Homequarters–and not a bit humble–is former mansion near Minneapolis." Situated on 200 acres of wooded hills with 14 bathrooms. (7) "In trading room, luxurious trappings have yielded to communications network."

73. *Soybean Digest.* 1949. Grits and flakes... from the world of soy: Cargill, Inc., is letting contracts for a solvent extraction plant in Chicago, reports *Business Week.* May. p. 48.
• ***Summary:*** "... Capacity is 700 tons daily. The plant will be located on the Calumet River, next to the company's grain elevators."

74. Fisher, H.J. 1949. Commercial feeding stuffs: Report on inspection, 1948. *Connecticut Agricultural Experiment Station, Bulletin* No. 533. 130 p. Aug. [51 ref]
• ***Summary:*** Contents: The feed law. Regulations. Registrations. Inspection, summary of: Commercial feeding stuffs, vitamin D carriers, miscellaneous feeds, biological specimens examined for poisons, A.F.C.O. samples [AFCO = American Feed Control Officials]. The Connecticut broiler ration. Determining guaranties. Analyses: Table 1. Commercial feeds. Table 2. Vitamin D carriers. Index.

Connecticut's "feed law" regulates commercial feeding stuffs (p. 3-6).

Under 1948 regulations we read that for this calendar year, 244 firms registered 1,413 brands of feeding stuffs. An asterisk after the number of brands means that the word "soybean" is mentioned–typically as "soybean oil meal." Two asterisks means that all brands listed contain the word "soybean." Soy related companies include:

Albers Milling Co., 111 W. Massachusetts St., Seattle 4, Washington (1 brand). Allied Mills, Inc., 3400 Board of Trade Bldg., Chicago, Illinois (38). Archer Daniels Midland Co., Minneapolis 2, Minnesota (5*). Bisbee Linseed Co., 2100 Lincoln-Liberty Bldg., Philadelphia 7, Pennsylvania (2*). Borden's Soy Processing Co., Div. of the Borden Co., Kankakee, Illinois (1**). The Buckeye Cotton Oil Co., Cincinnati, Ohio (3*). Cargill, Inc., 761 Chamber of Commerce, Minneapolis 15, Minnesota. (3*). Central Soya Co., Inc., 300 Ft. Wayne Bank Bldg., Fort Wayne, Indiana (2*).

It is surprising to see what things end up being sold for animal feed. Brewers and distillers (such as Anheuser-Busch, Seagram, or Hiram Walker) sell "Budweiser Brewers' Dried Grains," "Corn Distillers Dried Solubles," "Corn Distillers Grains with Solubles," "Distillers' Dried Grains," or "Dried Grains with Solubles." Rendering companies (which convert waste animal products from slaughterhouses into stable, saleable products) sell "Bone Meal" "Steamed Bone Meal," "Meat and Bone Scrap," or "Fish Meal." Dairy processors sell "Feed Grade Dried Skim Milk" or "Dry Buttermilk." Sugar refineries sell "Molasses Dried Beet Pulp." Condensing companies sell "Condensed Whey-Product" or "Dried Whey."

Of the 967 "Commercial feeding stuffs" tested, 10% (96 samples) were deficient, but 96% met all guaranties of protein, fiber, and fat content. Address: Chemist in Charge, New Haven, Connecticut.

75. Hendel, Julius. 1949. Soybeans in the world fats, oils picture: World trade. *Soybean Digest.* Sept. p. 38-41.
• ***Summary:*** "The secretary of your Association has asked me to discuss the possibility of continued foreign markets for United States soybeans. It has been my good fortune to have attended the International Congress of oilseed crushers held recently in Switzerland. Many informative and interesting



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papers were presented there.

"What Is the World Fats and Oils Picture? 1. Statistically there is a big demand for fats and oils all over the world. 2. The amount that will enter foreign trade will depend entirely on government policies, particularly Washington.

"What Is the Statistical Situation? Let us review the general fats and oils situation. There is great interchangeability and substitution in the use of various oils. What is true with oils in general is also true with regard to soybeans in particular.

"A review of the world situation shows that there is an extreme world shortage of fats and oils. Statistically, there is a large demand which must go unsatisfied. The shortage is particularly acute in Europe. The deficit of world exports for 1949 is estimated at 1,300,000 long tons of oil as compared with 1938. The deficit of European production for 1949 compared with 1938 is estimated at 600,000 long tons. Adding these two factors together we arrive at a world statistical shortage of 1,900,000 long tons for 1949. This is, indeed, a large hole to be filled.

"What Has Happened in Europe? In Europe proper, 1948 estimates indicate an actual increase, as compared with the previous year, in the production of animal fats and rapeseed. The increase was, however, more than offset by a poor olive crop in Southern Europe.

"In this connection, I think it is well to bear in mind that local consumption of an agricultural commodity which is used for food or feed is generally accelerated with the distance from the market. This is true in the case of olive oil. A short crop of olives in the Mediterranean Countries will reduce consumption of oil rather than increase imports. On the other hand, a large crop of olives will result in greater local consumption, and will not mean a corresponding increase in exports.

"What Has Happened to Crushing Capacity? During the war there was a marked increase in crushing capacity in the oilseed producing countries. In fact, the world crushing capacity is now far in excess of total prewar oilseed production. There is now and will be for a long time to come, a heavy demand for all kinds of oilseeds by the crushers. If hard currency exchange were adequately available at present, oilseed production would have to increase in order to keep the present crushing capacity busy.

"What Are the Principal Sources of Present World Exports? The countries which had normally supplied Europe are not now exporting at prewar levels. The decline in shipments from Manchuria, China, Indonesia, Argentina, and to a lesser extent India, Malaya and the Pacific Islands has contributed to the world shortage in 1948 as compared with 1938. There was a slight increase in shipments from the United States, Canada and the Belgian Congo.

"The 1949 world exports are estimated at about 300,000 long tons above 1948. This increase will probably come largely from African colonies, Indonesia, Brazil, and to a lesser extent from the Philippine Islands and North America. Africa will probably supply about the same quantity of copra and peanuts in 1949 as in 1948, but it is unlikely to ship as large a quantity of palm or palm kernel oil.

"The progress of the New British East African peanut enterprise is not known, and it is still too early to make a good estimate of the amount that will be produced and shipped. Palm kernel shipments from Indonesia and Malaya may recover to prewar levels, but it is difficult to say how much copra can be spared.

"Other Pacific areas, naturally, will recover their prewar production levels before long, but they will not ship out as large a percentage because of labor going into better paid occupations.

"The situation in regard to Argentina presents an entirely different set of circumstances. This country has on hand large stocks of surplus edible and inedible oils and oil meals. It seems reasonable to suppose that sooner or later these stocks will reach world markets, but it is quite impossible to say when, inasmuch that determination must be made almost exclusively on the basis of political considerations. The recent Argentine-British trade agreement is an indication of how Argentina is apt to trade in the future.

"The situation in regard to exports from most countries is further clouded by local politics and exchange problems. For example, in the case of Indonesia and Malaya, shipments of copra will be affected by the increase or decrease in the supply of rice, as the latter commodity is accepted by the natives as the medium of exchange. Rice also enters into many of the barter arrangements with those areas.

"Why Are Exports from Surplus Producing Countries below Prewar? Many of the countries which supplied the prewar surplus of fats and oils will consume a larger percentage of their production domestically. In the first place, the increase in population requires larger quantities, and secondly standards of living have been improved, and a smaller proportion of the population is being devoted to agriculture. As an example, production of fats and oils in India and Egypt will probably surpass prewar levels. However, unless trade balances require accumulation of exchange, it is doubtful if much or any will be exported. Furthermore, it is likely that exports from surplus countries will be made in the form of oil rather than oil bearing materials, because of increased crushing capacity.

"What Did the Americas Do? The North American, and particularly the United States contribution to world shipments of fats and oils is worthy of special mention. Prior to World War II, the United States was a large net importer of fats and oils. We have succeeded in exporting large quantities during the last few years. Our farmers have done a remarkable job of increasing the domestic production of fats and oils. This contribution to both the war effort and the peace effort was due in no small measure to our producers of soybeans.

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"How Do Detergents Affect the Supply? The development of detergents and their substitution for animal fats and vegetable oils in soap making has had a direct effect on the overall demand. The United States consumption of fats and oils in the manufacture of soap declined from 1,060 million pounds in 1947 to 955 million pounds in 1948. This reduction of about 10 percent is due primarily to the increase in the use of detergents.

"Detergents are not, of course, exactly new. Their growth, however, was rapid during and since the last war. In 1945 the United States production amounted to 125,000 tons, and production in 1949 is estimated at 270,000 tons. Plans call for an increase in plant capacity to 450,000 tons annually by 1952. The rate of growth, however, will diminish as the prices of fats and oils, particularly tallow, decline or stabilize at a lower level.

"It is interesting to note that even in England the increase in the use of detergents has shown a rapid rise. This has been due largely to the fact that they are entirely ration-free, as contrasted with 'austerity' restrictions in the use of fats and oils in the manufacture of soap.

"As to the future of detergents–they are here to stay. They possess marked advantages over soaps in hard water areas, and are especially useful in washing cold surfaces, such as motor cars, streets and even vegetables.

"It has been pointed out that lower costs of fats and oils used to make soap might prove to be too strong a competitive factor for further expansion of detergent production. However, we must bear in mind that cost of raw materials is relatively small compared with the costs of marketing, including advertising. Once a brand has been introduced and consumer acceptance has been established, it is highly unlikely that the product would be withdrawn from the market.

"In summarizing the world situation, it seems apparent that for some time to come there will be a large gap between the needs of consuming countries and the available exportable surplus. The statistical supply and demand situation will not, within the next 5 years, show a per capita consumption equal to the prewar level.

"I have been discussing supply and demand from the statistical angle. To assume that such facts portray effective demand, however, is unrealistic. We are inclined to underestimate the ability of people to do without, and forget that once the period has passed without exports it is not likely that any considerable portion of the unsatisfied demand will be accumulative. Most of that quantity will simply remain in the surplus producing areas.

"Let us re-emphasize that statistically there is a big demand for fats and oils all over the world, but the amount that will enter foreign trade will depend entirely on government policies, particularly in Washington." Continued. Address: PhD, Vice President, Cargill, Inc.

76. Hendel, Julius. 1949. Soybeans in the world fats, oils picture: World trade (Continued–Document part II). *Soybean Digest.* Sept. p. 38-41.

• ***Summary:*** (Continued): "How Much Will Enter World Trade? The amount of fats and oils that will enter world trade will depend on:

"1. The amount of dollars that ECA will allocate for: a. United States purchase. b. Purchase in other countries. Note: ECA is the European Cooperation Administration, a United States government agency set up in 1948 to administer the Marshall Plan.

"2. The portion of free dollar exchange allocated for purchase of oil. This depends on the amount of free dollar exchange the buying countries can accumulate through normal transactions, including: a. Exports to the United States. b. Payments for services in dollars. c. Amount of gold reserves or new mining. d. Private loans with adequate guarantees. e. Other transactions.

"The amount of exchange that foreign countries can accumulate naturally is the paramount factor. It requires a revamping of our behavior. There is very little free exchange available in the consuming countries at present. The only way they can accumulate dollar exchange is:

"1. By willingness of dollar countries to increase imports.

"2. By adopting a realistic attitude in providing the things dollar countries need: a. Cheaper production. b. Streamlined distribution through modern methods of packaging, advertising and sales promotion. The role that the Marshall Plan (ECA allocations) will play in stimulating foreign trade is of considerable importance. We must not, however, assume that it will solve the whole problem. The quantity purchased with free dollars will be very small.

"Remove Barriers: The public at large, and the business community in particular, must encourage governments to remove wherever possible the barriers to international trade such as quotas, price restrictions and embargoes. Above all, governments must seek an early solution to the currency problem, looking to the establishment of free foreign exchange markets. Without free exchange, the needs of deficiency countries cannot be supplied by the exporting areas. Without free exchange, the statistical shortage cannot become the effective demand it should, backed by buying power.

"The lack of fluidity and convertibility of foreign exchange has actually created two separate markets:

"A hard currency market with a surplus of low priced fats and oils.

"A soft currency market with a high price level and in great need of oils.

"Such countries as the United States, Canada and the Argentine have large surpluses that cannot be marketed. Conversely, in the sterling area, the same oils will sell at two to three times as high when payment is in sterling rather than

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dollars.

"The exportable surplus of fats and oils for 1949 is estimated at 1,500,000 tons, while the deficiency in importing areas is about 3 million to 4 million tons.

"What Brought This Situation About? Whenever a country is at war, the important objective in the mind of the government and the people is victory, regardless of cost. Naturally, under these conditions, changes are made in the production pattern, with subsidies for unnatural production.

"How Are We Going to Remedy the Situation? It is very discouraging to note that the trend toward free international trade continues to meet opposition on all sides. This is true in spite of the apparent desire for and talk of freer commerce among nations.

"What Are the Obstacles? Some of the more important stumbling blocks to greater freedom in foreign trade are:

"1. Deficiency of hard currency exchange.

"2. Insistence on the part of governments to continue dealing in commodities.

"3. Reluctance on the part of the established trade to assume the challenge of free trade.

"Let us discuss these three points in detail.

"1. Deficiency of hard currency exchange. The United States is the only country in the world which has no restrictions as to the amount of currency which one can take with him upon leaving our shores. All the rest of the world, and particularly Europe, have stringent regulations governing the movement of capital between countries.

"An example of the difficulties which may be encountered occurred on my recent visit to Europe. I invited one of our representatives from Holland to join me in Paris for the weekend so that we might discuss our problems. Although he was enjoying a good business and was fairly well-to-do, he expressed his regrets, and told me it would be impossible unless I would supply him with foreign exchange to pay his expenses while in France.

"To cite another example, on arrival in Denmark the customs official asked how long I expected to remain there. Not knowing the exact length of my stay, my answer naturally was, 'I don't know.' To that the official remarked, 'You had better know, because you will get no butter without coupons.' The answer is, of course, that even though Denmark has an exportable surplus of butter, rations at home are strictly controlled in order to add to exports. It is simply a case of building up foreign exchange which Denmark needs for payment of needed imports.

"These restrictions make travel inconvenient and even impossible. They are a great hindrance to the interchange of goods. In fact, we cannot over-emphasize the importance of convertibility of exchange in facilitating international trade. It is a 'must' if we want to enjoy peace. To me, peace and free trade are indivisible.

"It is, indeed, very discouraging that Western Europe is unable to come to an agreement on convertibility of the various currencies, based on free market quotations as determined by supply and demand. Until the problem is solved Europe will simply be obliged to produce its needs, though at an uneconomic price.

"Trade Restrictions: All one hears on every hand in Europe is 'trade agreements.' The big share of trade at present throughout the world is on the basis of bilateral trade agreements. In plain English they are nothing more than barter, and have caused a retrogression in foreign trade until we are now a half century behind the times.

"Prior to the war a buyer or seller merely contacted a broker. He told him what he wanted, where he wanted it, how much he wanted, what position he wanted, and what kind of payment, dollars or any other currency.

"It was simply a matter of working out amounts, price and terms and arranging foreign exchange by calling a bank.

"Under present conditions the procedure is entirely different. The seller must secure a government permit–this is most important. It takes a long time to convince some government officials that the transaction is a proper one. Unfortunately, in some countries, '5 percentism' is an accepted procedure. After the permit is granted, he must line up the exchange, which today is dollars.

"Foreign exchange brokers have always been men of keen and searching intellect. They studied exchange balances in all markets. It was their business to find out the needs for exchange by different banks. Their services were performed at a very nominal fee. Today the seller must make his own exchange transactions, involving a minimum of about five different banks, before the final trade can be consummated.

"The following is an actual transaction in the sale of United States soybean oil to Germany. Holland had a surplus of dollars. Switzerland needed the dollars for an offset account against a trade agreement. Switzerland bought coconut oil from a soft currency for dollars of the offset account. Switzerland sold soya to Holland for guilders. Switzerland bought Dutch coconut oil and paid guilders. Switzerland bought Swiss francs for the offset account and got dollars in return.

"Is that not expecting too much of a seller?

"It is an inefficient and time-consuming process. The margins must naturally be high, thus widening the spread between producer and consumer. This in turn causes dislocation in production and increases unemployment.

"Free interchange of goods among the nations of the world encourages production in those areas which can produce most efficiently, stimulates consumption, and increases the volume of trading. Full production and full employment all over the world are essential to the well being of all of us, and thus to peace. Empty stomachs may be a more explosive spark for struggles between nations than differences in ideologies as such" (Continued). Address: PhD, Vice President, Cargill, Inc.

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77. Hendel, Julius. 1949. Soybeans in the world fats, oils picture: World trade (Continued–Document part III). *Soybean Digest.* Sept. p. 38-41.

• ***Summary:*** (Continued):

"2. Insistence on the part of governments to continue trading. Our government officials should be given the benefit of every doubt. They should be given credit for trying to do that which they think is best for their country and the people. They are not naturally equipped to deal in commodities on the most practical and economic basis. Not only are their decisions apt to be based on political considerations, but they tend to follow rather than lead a trend. Their operations are guided by what has already happened, whereas successful business enterprise relies on good forecasting. Actions based on sound forecasts often result in reducing the undesirable effect of the trend or may even reverse it. Instead of removing the cause of adverse influences, government trading often introduces practices which make things worse. Such trading is very apt to result in unnatural changes in production. The present excessive production of rapeseed in Europe is one fact in point.

"A second example is the economic difficulties in which Argentina is involved at the present time. Only 2 years ago when I was in Argentina, foreign missions there were eager to pay hard currency for oils and other food stuffs at high prices. Greed and business inexperience led the officials to raise prices, disregarding performance of the terms of existing contracts. This created great animosity on the part of their natural customers. As a result, Argentine fats and oils went into surplus stocks rather than export channels, and today the Argentine [Argentina] has large unsold surpluses of oils and oilcakes.

"A third example, but on a lesser scale, developed in the United States last year. Following the then popular political cry against inflation, the Secretary of Commerce restricted the issuance of export allocations and licenses on fats and oils. He had not foreseen the developing picture. By the time he withdrew his restrictions the damage had been done. Instead of being exported, a sizeable quantity of United States fats and oils had gone into surplus stocks.

"The resulting concern over excessive stocks at home caused a severe drop in our prices of fats and oils. Europe needed and wanted our oils at that time. There are many other examples of a similar nature, in fact, too many to discuss all of them here.

"Government restrictions and state trading, irrespective of how well meaning, have no place in the economy in time of peace. The sooner they are removed, the quicker the world economic body will recover.

"3. Reluctance on the part of the established trade to assume the challenge of free trade. The greatest disappointment to me on my recent trip to Europe was to note the loss of faith by old established business houses everywhere in their ability to meet free competition. It is quite well established that under bulk buying and 'grandfather rights' established business is now well paid; in fact, far better than they would be under free competition. The marginal producer is guaranteed a fair return, which gives the efficient producer an extremely handsome margin. It was disillusioning to see delegates to the Seed Crushers Congress table a resolution asking their governments to withdraw from bulk buying.

"This fear of free competition was prevalent not only among the crushers alone. The well established grain houses unfortunately felt the same way. It seems unbelievable that top ranking business organizations should be afraid to meet competition again. It makes no difference how much we resist natural laws. Nature will triumph in the end. The detour is only temporary.

"'Give a Little': My own academic training and experience naturally have made me a free trader. We must have faith in our statesmen. The technical men see the situation clearly; the powers, however, are waiting for public opinion to crystallize. Business must take the long view and be willing to sacrifice temporary financial advantages. They will disappear anyway. Why not take the initiative before it is too late? History tells us we must be willing to give a little every now and then. If we do not we will lose all our advantages later on, one way or another.

"We must foster policies which will lead to a better distribution of productive resources the world over. Today in Europe agriculture is very inefficient. Many of you have seen Swiss and German farming of small strips of land. How can such practices produce desired results? World production can be made effective by letting each area produce those commodities which it can produce most efficiently. Only through full production and free distribution can the world avoid unemployment. We must not forget that unemployment brought Hitler.

"Our methods of handling and storing, and our technique in processing of soybeans have no equal in any other place in the world. Within the span of less than 20 years, we have increased the efficiency of our crushing operations far in excess of our European competitors. The increase in the use of the solvent extraction process has played an important part in the growth of that efficiency.

"Should our soybeans be forced out of foreign markets, soybean producers and the industry generally can still continue to prosper. Only a small percentage of the soybean is oil, while the biggest part is meal. The increase in population together with our improved standards of living will afford a ready market for meat and dairy and poultry products. This in turn means a fair price for the meal to feed livestock and poultry. The price of soybean meal, which is the largest part of the bean, shows quite clearly that soybeans can stand on their own merits, and can get along, if necessary, without foreign demand."

A portrait photo shows Julius Hendel. Address: PhD,

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Vice President, Cargill, Inc.

78. National Soybean Processors Association. 1949. Year book, 1949-1950 (Association year). Chicago, Illinois. 73 p. • ***Summary:*** On the cover (but not the title page) is written: "Year Book and Trading Rules, 1949-1950." Contents: Constitution and by-laws (incl. committees, code of ethics). Officers, directors and committees for 1949-50. Membership of the National Soybean Processors Association. Trading rules governing the purchase and sale of soybean oil meal. Appendix to trading rules on soybean oil meal: Official methods of analysis (moisture, protein, oil, crude fiber–official, sampling of soybean oil meal). Trading rules on soybean oil. Appendix to trading rules on soybean oil: Uniform sales contract, standard specifications for crude soybean oil for technical uses, methods of analysis (A.O.C.S. official methods): Refining loss (expeller and hydraulic soybean oil)–Ca 9a-41, refining loss (extracted soybean oil)–Ca 9b-46, refining loss (degummed hydraulic and extracted types soybean oil)–Ca 9c-49, refining loss (degummed expeller type soybean oil)–Ca 9d-49, bleaching test (refined soybean oil)–Cc 8b-49, grading soybean oil for color (N.S.P.A. tentative method), color–Wesson method using Lovibond glasses–Cc 13b-45, sampling–C 1-47, flash point (A.O.C.S. tentative method–Cc 9b-48). Moisture and volatile matter: Vacuum oven method–Ca 2d-25. Break test–Modified Gardner method–Ca 10-40. Iodine value–Wijs method–Cd 1-25. Unsaponifiable matter–Ca 6a-40.

Handwritten: *Soybean Farming* is now available; prices are given for non-members and members, for 100 to 1,000 copies. Assessments: Regular $.0004 per bushel, 40 cents per 1,000, $400 per million. Max. $3,200 per year. Min. $100 per year. July 6 meeting decreases the regular assessment to $0.0003 per bushel.

The section titled "Officers, directors, and committees" (p. 12-15) states: President: R.G. Houghtlin. V.P., Chairman Executive Committee: G.G. Golseth. Secretary: W.L. Shellabarger. Treasurer: H.E. Carpenter. Executive Committee: R.G. Golseth, Chairman, H.E. Carpenter, E.A. Cayce, Philip S. Duff, W.H. Eastman, Jasper Giovanna, R.G. Houghtlin, W.L. Shellabarger.

Board of Directors (Term expiring Sept. 1950): D.O. Andreas, E.A. Cayce, Jasper Giovanna, R.G. Golseth, H.R. Schultz, H.R. Scroggs. (Term expiring Sept. 1951): Dwight Dannen, Roger Drackett, W.H. Eastman, R.B. Jude, W.H. Knapp, Karl Nolin. (Term expiring Sept. 1952): S.E. Kramer, Philip S. Duff, D.W. McMillen, Jr., Clarence E. Peters, J.J. Quinlan, Ralph Wells.

Standing committees: For each committee, the names of all members (with the chairman designated), with the company and company address of each are given–Traffic and transportation. Technical. Soybean grades and contracts. Oil trading rules. Meal trading rules. Crop improvement. Soybean research council. Uniform rules and standards for soybean oil meal. Safety and insurance. Lecithin. Regional: Ohio, Michigan, and East; Illinois, Indiana, Kentucky, Wisconsin; Iowa, Minnesota, Nebraska, South Dakota; Missouri, Kansas, and Mississippi River Delta Sections. Handwritten on blank facing pages: Nominating committee. Reception committee. Official weights committee. Crop Improvement steering committee. Two new members (people; Francis E. Calvert, The Drackett Co., Oct. 1949).

The following organizations, and individuals are members of NSPA: Albers Milling Co., Los Angeles, California (W.P. Kyle). Allied Mills, Inc., Board of Trade Bldg., Chicago, Illinois; Peoria, Illinois; Taylorville, Illinois; Omaha, Nebraska; Portsmouth, Virginia. Archer-Daniels-Midland Co., Box 839, Minneapolis 2, Minnesota; Chicago, Illinois; Decatur, Illinois; Fredonia, Kansas. Big 4 Cooperative Processing Assn., Sheldon, Iowa (Chas. W. Hanson). Blanton Mill, Inc., St. Louis, Missouri (Ross A. Woolsey, Jr.). Boone Valley Cooperative Processing Assn. Eagle Grove, Iowa (Edward Olson); Hubbard, Iowa (D.E. Weld). Borden's Soy Processing Co., Chicago 4, Illinois (C.E. Butler -> J.R. Pentis); Kankakee, Illinois; Waterloo, Iowa. Buckeye Cotton Oil Co. (The), Cincinnati, Ohio (W.H. Knapp); Louisville, Kentucky; New Madrid, Missouri; Raleigh, North Carolina; Memphis, Tennessee. Cargill, Inc., Minneapolis, Minnesota (D.O. Andreas); Springfield, Illinois (Eric Nadel); Cedar Rapids, Iowa (C.W. Bohlander); Fort Dodge, Iowa (H.E. Marxhausen -> R.F. Hubbard); Spencer, Iowa (W.J. Wheeler); Washington, Iowa (Hugo Lensch). Central Iowa Bean Mill, Gladbrook, Iowa (Paul H. Klinefelter). Central Soya Co., Inc., Fort Wayne 2, Indiana (E.W. McMillen, Jr.); Gibson City, Illinois (T.H. Allwein); Decatur, Indiana (C.I. Finlayson); Marion, Ohio (R.W. Fay). Clinton Industries, Inc., Clinton, Iowa (E.W. Myers). Colchester Processing Co., E. St. Louis, Illinois (E.L. McKee). Concord Soya Corporation, Concord, Michigan (Harold K. Rapp; crossed out). Consumers Co-op Assn., Kansas City 13, Missouri (F. Dean McCammon). Consumers Soybean Mills, Minneapolis 15, Minnesota (Riley W. Lewis). Dannen Grain & Milling Co., St. Joseph, Missouri (Dwight L. Dannen). Decatur Soy Products Co., Decatur, Illinois (Jasper Giovanna). Delphos Grain and Soya Products Co., Delphos, Ohio (Floyd E. Hiegel). Doughboy Industries, Inc., Fairfield, Iowa. Drackett Co. (The), Cincinnati 32, Ohio (Roger Drackett). Eastern Iowa Milling Co., New Hampton, Iowa (G.A. Ward). Farmers Cooperative Assn., Ralston, Iowa (Karl Nolin). Farmers Cooperative Co., Dike, Iowa (C.M. Gregory). Farmers Cooperative Elevator, Martelle, Iowa (H.B. Lovig). Fayette Soybean Mill, Fayette, Iowa (L.A. Rose). Fremont Cake and Meal Corp., Fremont, Nebraska (Harry E. Wiysel). Frith (E.E.) Company Inc., Dubuque, Iowa (E.M. Weicher). Funk Bros. Seed Co., Bloomington, Illinois (H.A. Abbott). Galesburg Soy Products Co., Galesburg, Illinois (Max Albert). General Mills, Inc., Chem. Div., Minneapolis 1,

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Minnesota (W.H. Eastman); Belmond, Iowa (E.E. Woolley). Glidden Co. (The), Chicago 39, Illinois (R.G. Golseth). Gooch Milling & Elevator Co., Lincoln 1, Nebraska (M.R. Eighmy). Haynes Soy Products Inc., Portland, Indiana (Clarence E. Peters). Hemphill Soy Products Co., Kennett, Missouri (W.A. Hemphill). Holland Pioneer Mills, Inc., Ohio City, Ohio (G.A. Holland). Honeymead Products Co., Mankato, Minnesota (L.W. Andreas); Hoosier Soybean Mills, Inc., Marion, Indiana (J.H. Caldwell, Jr.). Huegely Elevator Co., Nashville, Illinois (J.W. Huegely). Hulcher Soy Products, Virden, Illinois (Norman E. Hulcher). Iowa Milling Co., Cedar Rapids, Iowa (Jos. Sinaiko). Iowa Soy Co., Redfield, Iowa (H.R. Straight). Ipava Farmers Processing Co., Ipava, Illinois (F.P. Brown). Janesville Mills, Inc., Janesville, Wisconsin (A. Roger Hook). Kansas Soya Products Co. (The), Emporia, Kansas (Ted W. Lord); Kansas City 3, Kansas (Richard W. Lord). Ladd Soya, Inc., Bunker Hill, Indiana (Wayne Ladd). Lexington Soy Products Co. (The), Lexington, Ohio (H.E. Carpenter). Louisville Soy Products Corp., Louisville, Kentucky (H.A. Miller). Marshall Mills Inc., Marshalltown, Iowa (J.I. Johnson). Muscatine Processing Corp., Muscatine, Iowa (G.A. Kent). North Iowa Cooperative Processing Association, Manly, Iowa (Glenn Pogeler). Northwest Cooperative Mills, St. Paul, Minnesota (Anthony H. Roffers). Ohio Valley Soybean Co-op, Henderson, Kentucky (G.W. Allen). Owensboro Grain Co., Owensboro, Kentucky (William M. O'Bryan). Pacific Vegetable Oil Corp., San Francisco 7, California (B.T. Rocca, Jr.). Pillsbury Soy Mills, Clinton, Iowa (H.R. Schultz); Centerville, Iowa (H.R. Schultz). Postel (Ph. H.) Milling Co., Mascoutah, Illinois (A.S. Lee). Quincy Soybean Products Co., Quincy, Illinois (Irving Rosen). Ralston Purina Co., St. Louis 2, Missouri (D.B. Walker); Kansas City, Missouri (F.G. Franze); Lafayette, Indiana (Ralph Guenther); Iowa Falls, Iowa (H.N. Johnson); Circleville, Ohio (A.V. Couch); Champaign, Illinois -> Bloomington, Illinois (N.B. Morey). Roach Soybean Mills, Plainfield, Ohio (Howard L. Roach). Shellabarger Soybean Mills, Inc., Decatur 30, Illinois (W.L. Shellabarger). Simonsen Mill Rendering Plant, Quimby, Iowa (W.E. Simonsen). Sioux Soya Co., Sioux City 2, Iowa (J.L. Ward). Southern Cotton Oil Co. (The), Goldsboro, North Carolina (W.V. Westmoreland); Tarboro, North Carolina (W.A. Moore). Southland Cotton Oil Co., Paris, Texas (Richard H. Blyth). Soya Processing Co., Wooster, Ohio (H.H. Heeman). Soya Extraction Div., Continental Grain Co., Columbus 9, Ohio (D.H. Wilson–company crossed out). Soy-Rich Products, Inc., Wichita, Kansas (Ralph S. Moore). Spencer Kellogg and Sons, Inc., Buffalo 5, New York (Robert B. Jude); Chicago, Illinois; Decatur, Illinois; Des Moines, Iowa; Bellevue, Ohio (Harry Stokely). Sterling Soybean Co., Inc., Rock Falls, Illinois (Edward J. McGinn). Swift & Co., Union Stock Yards, Chicago 9, Illinois (S.E. Cramer). Thomson Soya Products, Hiawatha, Kansas (A.G. Thomson). Toledo Soybean Products Co., Toledo, Ohio (J.H. Brown). Wells (Ralph) & Co., Monmouth, Illinois (Ralph Wells). West Bend Elevator Co., West Bend, Iowa (R.W. Jurgens). Western Soybean Mills, Sioux Falls, South Dakota (E.A. Woodward). Williams Milling Co., Sac City, Iowa (Leo W. Williams).

Organizations represented on committees: U.S. Regional Soybean Laboratory, Urbana, Illinois (John C. Cowan, R.T. Milner).

Handwritten: New members added since publication of the Trading Rules Book–1949. Falk & Co., Pittsburgh, Pennsylvania (Willard Lighter, Jan. 1950). Minnesota Linseed Oil Co., Minneapolis 21, Minnesota (R.J. Lundquist, May 1950). Farmers & Merchants Milling Co., Glencoe, Minnesota (L.H. Patten, Mgr., May 1950). Riverside Oil Mill, Marks, Mississippi (William King Self, Aug. 1950). Planters Manufacturing Co., Clarksdale, Mississippi (A.K. Shaefer, Sept. 1950).

Associate Members: Arcady Farms Milling Co., Chicago 6, Illinois. Armour & Co., Chicago 9, Illinois (John H. Noble). Aubrey & Co., Louisville, Kentucky. Best Foods, Inc., New York, NY. Capital City Products Co., Columbus, Ohio. Cooperative Mills Inc., Baltimore 30, Maryland. Cox (Chas. M.) Co., Boston, Massachusetts. Foxbilt Inc., Des Moines, Iowa. Humco Co. (The), Memphis 1, Tennessee. Kraft Foods Co., Chicago, Illinois. Lever Bros Co., Lever House, Cambridge, Massachusetts. Pittsburgh Plate Glass Co., Paint Div., Pittsburgh, PA. Procter & Gamble Co., Cincinnati, Ohio. Spartan Grain & Mill Co., Inc., Spartanburgh, South Carolina. Tuckers (Mrs.) Foods, Inc., Sherman, Texas. Wilson & Co., Chicago, Illinois. Handwritten: New Associate Members: Clark Mills Inc., Minneapolis 15, Minnesota. Address: 3818 Board of Trade Building, Chicago 4, Illinois.

79. *Soybean Digest.* 1949. Back from Europe. Sept. p. 108.
• ***Summary:*** Dwayne Andreas and Dr. Julius Hendel returned recently from Europe after attending the International Association of Seed Crushers Conference at Montraux, Switzerland. "Both men are vice presidents of Cargill, Inc., Minneapolis, Minnesota."

"Andreas and Hendel also traveled in Germany, France, Denmark, Holland and Belgium conferring with Cargill agents and customers in the vegetable oil and oilseed business. They spent some time studying the German situation in Hamburg and Frankfurt and were amazed to see the rapid progress being made under the impetus provided by tremendous American expenditures and the apparent determination of some Americans to rebuild Germany as soon as possible." A small portrait photo shows Dwayne Andreas.

80. Cargill, Inc. 1949. How to sell soybeans. How to buy soybean products (Ad). *Soybean Digest.* Oct. p. 27.
• ***Summary:*** "To get the highest price at the time you sell

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your soybeans... sell to your local elevator man who deals with Cargill. Prices, conditions, demand and supply change by the moment, but through a fast-operating private wire network connecting all principal markets, your local elevator man can give you up-to-the-minute quotations. Sell wisely at the highest price... sell to your local elevator man who deals with Cargill.

"If you're a dealer or manufacturer who uses soybean oil meal or linseed oil meal, there's a Cargill plant nearby to give you fast, efficient service. Just write, phone or telegraph your order for Cargill 44% Soybean Oil Meal; 41% Soybean Oil Meal or Cargill Linseed Oil Meal. Your nearest Cargill plant will give you prompt delivery.

"Port Cargill, Minnesota
"Spencer, Iowa
"Cedar Rapids, Iowa
"Springfield, Illinois
"Fort Dodge, Iowa
"Washington, Iowa." Address: Minneapolis, Minnesota.

81. *Soybean Digest.* 1949. Blaw-Knox Construction Co., chemical plants division, has begun construction of a soybean processing plant for Cargill, Inc. Oct. p. 34.
• ***Summary:*** "This plant located adjacent to the grain company's large storage elevators in Chicago, will give Cargill one of the largest soybean solvent extraction processing plants in this country. Completion is expected in 1950."

82. *Soybean Digest.* 1949. Grits and flakes... from the world of soy: Cargill, Inc., Minneapolis, announces the appointment of Richard T. Claycomb... Oct. p. 34.
• ***Summary:*** "... to the position of editor of the *Cargill Crop Bulletin."*

83. *Soybean Digest.* 1950. Joins Borden Co.: Louis F. Langhurst. Jan. p. 44.
• ***Summary:*** Langhurst is from Cedar Rapids, Iowa. He was previously connected with Honeymead Products Co. and later with Cargill, Inc. there. From 1947 to 1949 he was chief engineer of the solvent division of V.D. Anderson Co., Cleveland, Ohio. On 1 Dec. 1949 he joined Borden Soy Processing Co. in Waterloo, Iowa. A photo shows Louis Langhurst.

84. *Soybean Digest.* 1950. The Peoria conference. Feb. p. 17.
• ***Summary:*** "About 135 soybean processors and others heard industry problems and new developments discussed by qualified experts at the 2-day soybean conference at the Northern Regional Research Laboratory in Peoria Jan. 16-17.

"The morning session of the second day was devoted to recent research at the laboratory and covered the soybean oil taste panel, lime as a hardening agent in soybean oil paints and the effect of metals on edible oil quality.

"Other papers covered such widely divergent subjects as new varieties, the soybean industry in Europe, hedging problems, methods of processing, quality of soybean oil meal in feed formulation and promotion of soy flour.

"Speakers on the program included: J.L. Cartter, director, U.S. Regional Soybean Laboratory; Geo. M. Strayer, secretary-treasurer, American Soybean Association; C.E. Robinson, futures trading analyst, Commodity Exchange Authority.

"W.H. Goss, associate director, department of scientific research and technical development, Pillsbury Mills, Inc.; R.C. Holder, director, nutritional department, Central Soya Co., Indiana; R.G. Brierley, vice chairman, executive board, Soya Food Research Council.

"A.J. Lewis, chemist industrial oil section, oil and protein division, Northern Regional Research Laboratory; Helen Moser, food technologist, oil and protein division, NRRL; C.D. Evans, in charge, edible oil section, oil and protein division, NRRL; and J.H. Dean, assistant director, cotton branch, Production and Marketing Administration.

"A speech by Martin Sorkin, grain branch, Production and Marketing Administration, on 'Acreage Allotments for Soybeans and Other Oil Crops,' was cancelled. It was announced from the floor that the talk would not be given since no acreage allotment program for soybeans had been set up.

"Presiding at the sessions were R.G. Houghtlin, president of the National Soybean Producers Association [sic, National Soybean Processors Association], Chicago, Illinois; and R.T. Milner, director of the Laboratory [NRRL].

"States represented at the conference included: Illinois, Ohio, Indiana, Minnesota, Pennsylvania, Iowa, Missouri, Mississippi, Wisconsin, Massachusetts, Kansas, Kentucky, Alabama, New York, Georgia, Tennessee, Delaware, Nebraska, Michigan and Washington, D.C.

"Three of the papers given at the conference are carried in this issue of the Soybean Digest. Others will be published in future issues.

"Photos of informal groups at the conference shown on this page were taken by Kent Pellett, managing editor of the Soybean Digest."

Five photos show groups of people at the conference talking and listening. The captions read: (1) "At left, two agronomists talk shop: C.R. Weber, U.S. Regional Soybean Laboratory, Ames, Iowa; and C.V. Feaster, Missouri Agricultural Experiment Station, Columbia, Missouri.

(2) "In center, part of the group at the soybean conference in Peoria Jan. 16-17. At far left you see Director R. T. Milner of the Northern Regional Research Laboratory, host to the conference.

(3) "At right, visiting between sessions are O.H. Alderks, manager technical division, Buckeye Cotton Oil Co., Ivorydale, Ohio; and H.A. Abbott, manager soybean division, Funk Bros. Seed Co., Bloomington, Illinois.

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(4) "Below, Iowans compare notes: Henry B. Lovig, manager Farmers Cooperative Elevator, Martelle; C.W. Bolander, manager Cargill, Inc., Cedar Rapids; and C.F. Brooker, director North Iowa Processing Association, Manly.

(5) "Below, a Kansas-Nebraska-Missouri foursome. Left to right, E.A. Gumbert, vice president Dannen Mills, Inc., St. Joseph, Mo.; Harry E. Wiysel, secretary-treasurer, Fremont (Nebraska) Cake & Meal Co.; T.W. Lord, president Kansas Soya Products Co., Emporia, Kansas; and A. G. Thomson, Thomson Soya Mill, Hiawatha, Kansas."

85. *Soybean Digest.* 1950. Grits and flakes... from the world of soy: Dr. Julius Hendel, vice president in charge of marketing for Cargill, Inc., Minneapolis,... Feb. p. 46.
• ***Summary:*** "... related to the Chicago Rotary club recently, his observations and impressions on the export situation after visiting several foreign countries and attending the International Congress of Oilseed Crushers in Switzerland last summer."

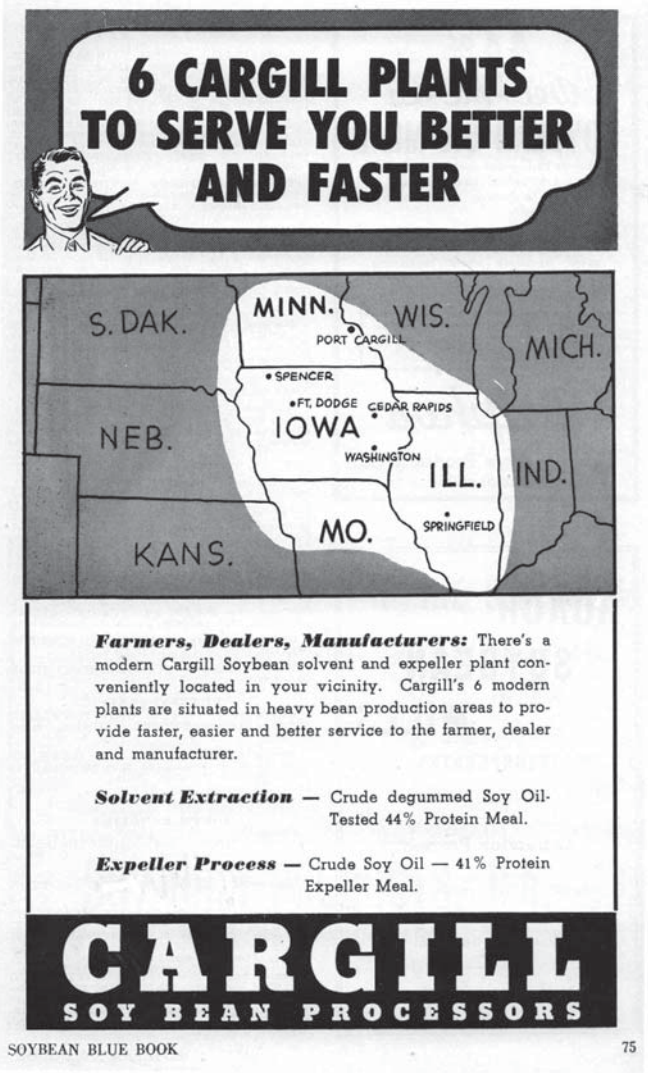
86. *Soybean Digest.* 1950. Heads trade group [Edward J. Grimes, of Cargill]. Feb. p. 48.
• ***Summary:*** "Edward J. Grimes, vice president of Cargill, Inc., Minneapolis, Minnesota, was elected chairman of the foreign trade policy advisory committee for the U.S. Department of Agriculture at its first meeting in Washington, D.C. Jan. 5. Representatives of farm organizations, land-grant colleges, the agricultural press and agricultural industry are members of the committee, which was created under the Research and Marketing Act to advise USDA in the field of foreign agricultural trade."

87. Cargill, Inc. 1950. 6 Cargill plants to serve you better and faster (Ad). *Soybean Blue Book.* p. 75.
• ***Summary:*** In the middle of this full-page black-and-white ad is a map of the midwestern USA showing the location of Cargill's six plants: 1. Springfield, Illinois. 2. Cedar Rapids, Iowa. 3. Fort Dodge, Iowa. 4. Spencer, Iowa. 5. Washington, Iowa. 6. Port Cargill [Savage], Minnesota.

"Cargill's 6 modern plants are situated in heavy bean production areas to provide faster, easier and better service to the farmer, dealer and manufacturer.

"Solvent Extraction–Crude degummed Soy Oil. Tested 44% Protein Meal.

"Expeller Process–Crude Soy Oil–41% Protein Expeller Meal."



88. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Chicago, Illinois.
Date of Introduction: 1950 September.
Ingredients: Soybeans.
New Product–Documentation: *Soybean Digest.* 1949. Oct. p. 34. "Grits and flakes... Blaw-Knox Construction Co., chemical plants division, has begun construction of a soybean processing plant for Cargill, Inc. This plant located adjacent to the grain company's large storage elevators in Chicago, will give Cargill one of the largest soybean solvent extraction processing plants in this country. Completion is expected in 1950."

Soybean Digest. 1950. "New Chicago plant increases Cargill's facilities and service." Sept. p. 75. A large photo shows Cargill's newly completed, large and modern "solvent-process oil extraction plant on the far southside of Chicago."

Lauser, Greg C. 1982. "History of Cargill's involvement in the soybean processing industry." Minneapolis, Minnesota. 5 p. Unpublished manuscript. In 1950 Cargill built its first plant specifically designed to crush soybeans in Chicago to serve domestic oil and meal markets.

89. *Soybean Digest.* 1950. New Chicago plant increases Cargill's facilities and service. Sept. p. 75.
• ***Summary:*** A large photo shows Cargill's newly completed,

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large and modern "solvent-process oil extraction plant on the far southside of Chicago."

90. *Soybean Digest.* 1950. Grits and flakes... from the world of soy: Austen S. Cargill was named chairman of the board of directors of Cargill, Inc., Minneapolis, Minnesota,... Oct. p. 30.
• ***Summary:*** "... at a recent meeting of the board. Cargill MacMillan was elected executive vice president; and James E. Dorsey was named a member of the board."

91. Cargill, Inc. 1950. "We've got a secret weapon, Joseph V. Dzugashvili!" (Ad). *Soybean Digest.* Nov. p. 11.
• ***Summary:*** The top half of this full-page black-and-white ad is a photo showing a newly married bride and groom. His arm is around her shoulder and they are looking to the upper right–where there is a small illustration of Joseph Stalin looking back down at them. The text reads: "Grim times these are, for a young couple facing a new life together on a farm or elsewhere. But they do so knowing we here in America have a secret weapon that Iosif Vissarionovich Dzugashvili, alias Joseph Stalin, can never copy."

"The only nation Iosif fears is the leading grow-ahead nation in the world. When Dzugashvili says he fears our industrial system he says, in effect, that he fears our free minds and our incentive way of doing things. Let's never copy Communism, or any other 'ism.' Let's copy our own success, which has made our nation the envy of all the world.

"Here at Cargill we have an incentive to serve you. Under our American system we must earn your grain business by constantly trying to do better and better." Address: Main offices: Minneapolis, Minnesota.

92. Cargill, Inc. 1950. Fire or explosion in solvent extraction plant. Chicago, Illinois.
• ***Summary:*** Kingsbaker, C. Louis. 2005. "List of fires and explosions in extraction plants." Atlanta, Georgia. 3 p. Aug. 4. Unpublished manuscript. Address: Chicago, Illinois.

93. Cargill, Inc. 1951. "... and give our children the chance I had" (Ad). *Soybean Digest.* Jan. p. 29.
• ***Summary:*** The top half of this full-page black-and-white ad is a photo showing an 83-year-old retired farmer with his hands folded on his chin–giving "thanks for what America has given him." He prays: "May all young folks continue to live in freedom." The ad continues: "It's right to pray for our children. If socialism comes to America, the young will lose most. Those who are older lose the least... Let's stop socialism now. Let's not handicap our children." Address: Main offices: Minneapolis, Minnesota.

94. *Soybean Digest.* 1951. Grits and flakes... from the world of soy: Cargill. Nov. p. 40.
• ***Summary:*** "The soybean processing plant owned by Cargill, Inc., at Springfield, Illinois, has been sold to Illinois Soy Products Co., a subsidiary of Iowa Milling Co., Cedar Rapids, Iowa. Indicated price for the land and buildings was $60,000. Attorneys said there would be no change in the plant's operation."

95. Cargill, Inc. 1952. "Cedric Adams showed us something new at the Minnesota State Fair this year" (Ad). *Soybean Digest.* Nov. p. 27.
• ***Summary:*** This full-page ad shows a man holding a magazine. In the magazine is a full-page ad by Cargill.

The company's new medallion-style logo reads: "Product of Cargill–Creative processing." Across the bottom of the ad is written: "Cargill, Creative processors of farm products." Address: Main offices: Minneapolis, Minnesota.

96. Woodworth, Robert C. 1953. We call it "creative processing." *Chemurgic Digest.* Nov. p. 4-6.
• ***Summary:*** "The public relations director of one of America's important farm-dependent businesses tells how he thinks industry can help 'sell' chemurgy to the public.

"The little old lady's eye fairly sparkled as she looked at the maze of pipes and equipment around her. She turned to me and marveled, 'Why, I never realized what it took to handle those soybeans of ours. I'm so glad I came.'

"She'd always seen their soybeans go into a truck on the way to the local elevator. She never thought there was much to it beyond that–or at least she had never thought much about it. Now, in a tour through our Port Cargill soybean processing plant she was beginning to see what had to happen before the soybeans were transformed into a hundred useful and important products.

"At that time she was seeing the first stages of Cargill's new institutional advertising program, which is now in its third successful year. We set out to tell the people of our Midwestern area about the importance of chemurgy–"creative processing," we called it–to our farm-dependent economy."

"In addition, we are important chemurgic processors ourselves, operating an extensive formula feed division (Nutrena Feeds), a Cargill Hybrid Corn department, soybean and linseed oil processing units, advanced oil processing units in the East."

Cargill's work is "limited to the Midwestern area where most of our plants are located."

Cargill uses a three-point program:

"1. We sell the idea by showing."

"2. We sell the idea by telling."

"3. We sell the idea by doing."

An illustration shows Cargill's logo which reads: "Product of Cargill Creative Processing." Address: Vice president, Cargill, Inc.

97. Cargill, Inc. 1954. Paint goes farther, pups grow faster

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because of Creative Processing–that uses up 3/4 of all farm products (Ad). *Soybean Digest.* Jan. p. 31.
• ***Summary:*** See next page. The text continues: "A long row of ghostly grey car bodies comes down the production line of a giant automobile factory. Several workers squeeze the triggers of the spray guns and a fine film of paint spreads over the surface, giving it the sleek, bright finish you may someday admire in a car dealer's window.

"If you raise soybeans there's a good chance that, because of Creative Processing, some of your crop is used up like this.

"A Creative Processor (like Cargill's Oil Division) took your Soybeans and turned them into a highly refined soybean oil used in today's better-spreading, longer-lasting automobile finishes.

"The more ways like this that the Creative Processor finds to use soybean oil, the better market there is for your beans.

"Another example of Creative Processing: Cargill makes Nutrena Dog Food to help puppies grow faster–and, at the same time, this helps make a better market for the 8 different farm products that are used in making dog food.

"Through its several processing divisions, Cargill is proud to be one of the Creative Processors who are serving agriculture by constantly finding new, improved ways to 'eat up' the farm products you raise."

On the top left and right of this dense ad are photos, each with a caption. (1) Top: Cars on a production line. "How many bushels of soybeans do you see in this picture? None? Look again! Every one of these shiny new automobiles has been painted with an enamel containing oil processed from soybeans. This is just one of the countless new uses that Creative Processors like Cargill have found for the things you grow. No wonder Creative Processing now 'eats up' better than 3/4 of all farm products."

Right: A baby on its back holding a bottle. "Baby might go hungry if it weren't for Creative Processing. Today there are 1,750,000 more babies than 20 years ago. but there are 3,300,000 fewer milk cows. Babies have nothing to worry about though, because the average milk production per cow has increased 27% during the last 20 years. Better dairy feeds (made by Creative Processors like Nutrena, Cargill's Feed Division), and better dairy cow breeding have made this possible. Creative Processors have also helped widen the market for milk by developing a host of new and improved milk products."

Top left: Puppies in a woven basket. "Puppies like these eat millions of pounds of farm-grown products every year. That's because a Creative Processor like Cargill puts different farm products into just one box of Nutrena Dog Food."

Bottom left: Pieces of fried chicken ready to eat.

Um-m-m! Pass the chicken! This year we Americans will fry and eat about 66% more chickens per person than in 1939. Creative Processing (like that done in Cargill's Nutrena Feed Mills) helps chicken raisers profit from this big demand with improved feed that helps raise broilers 30% faster with 26% less feed than 20 years ago."

Across the bottom of this full-page black-and-white ad is written: "Cargill, Creative processors of farm products." To the right is the company's medallion-style logo, which reads: "Product of Cargill–Creative processing."

Below that, in white letters on a black background: "This is how Cargill is telling the importance of processors to farmer-readers of papers like *The Farmer, Wallaces' Farmer, Dakota Farmer, Montana Farmer-Stockman,* etc Address: Main offices: Minneapolis, Minnesota.

98. *Soybean Digest.* 1954. Glidden vice president. Jan. p. 15.
• ***Summary:*** "Willard C. Lighter, general manager of the soya products division of the Glidden Co., has been elected a vice president and a director of the company, according to an announcement by Dwight P. Joyce, Glidden president. Mr. Lighter joined the company in 1952 as general manager of trading for the soya products division and was named general manager of the division in February 1953. He will continue in this capacity. Mr. Lighter's division consists of six large producing units in Indiana, Illinois and California.

"A well-known figure in the grain, feed and oilseed processing business, Lighter began his career with Cargill, Inc., in Minneapolis [Minnesota], in 1934." A photo shows Lighter.

99. Cargill, Inc. 1954. Look to Cargill–Specialists in serving agriculture (Ad). *Soybean Blue Book.* p. 33.
• ***Summary:*** In the middle of this full-page black-and-white ad is a map of the midwestern and eastern USA showing the location of Cargill's "7 modern plants in the heart of soy land." 1. Port Cargill [Savage], Minnesota. 2. Spencer, Iowa. 3. Fort Dodge, Iowa. 4. Cedar Rapids, Iowa. 5. Washington, Iowa. 6. Chicago, Illinois. 7. Philadelphia, Pennsylvania.

100. Cargill, Inc. 1954. Better products for your farm–Better markets for your farm products (Ad). *Soybean Digest.* May. p. 29.
• ***Summary:*** Near the top of this full-page black-and-white ad, an illustration (line drawing) shows a hand holding a large stamp which has just stamped the company's medallion-style logo, which reads: "Product of Cargill–Creative processing." In the middle are photos of eight Cargill products: Nutrena poultry feeds. Nutrena livestock feeds. Cargill hybrid corn. Nutrena dog food. Cargill linseed oil. Cargill soybean oil meal (100 lb sack). Cargill soybean oils (large metal drum). Cargill solvent extracted linseed oil meal.

More photos show country elevators, terminal elevators, and a Cargill "processing plant, where 75% of all farm products end up to be made into things to be eaten or used."

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How many bushels of soybeans do you see in this picture? None? Look again! Every one of these shiny new automobiles has been painted with an enamel containing oil processed from soybeans. This is just one of the countless new uses that Creative Processors like Cargill have found for the things you grow. No wonder Creative Processing now "eats up" better than ¾ of all farm products.



Puppies like these eat millions of pounds of farm-grown products every year. That's because a Creative Processor like Cargill puts 8 different farm products into just one box of Nutrena Dog Food.



Um-m-m! Pass the chicken! This year we Americans will fry and eat about 65% more chickens per person than in 1939. Creative Processing (like that done in Cargill's Nutrena Feed Mills) helps chicken raisers profit from this big demand with improved feed that helps raise broilers 30% faster with 25% less feed than 20 years ago.

Paint goes farther, pups grow faster because of Creative Processing

. . . that uses up ¾ of all farm products

A long row of ghostly grey car bodies comes down the production line of a giant automobile factory. Several workers squeeze the triggers of the spray guns and a fine film of paint spreads over the surface, giving it the sleek, bright finish you may someday admire in a car dealer's window.

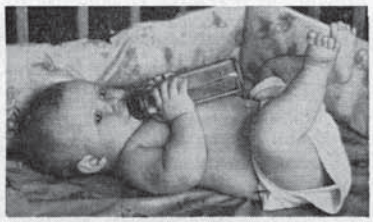
If you raise soybeans there's a good chance that, because of Creative Processing, some of your crop is used up like this.

A Creative Processor (like Cargill's Oil Division) took your Soybeans and turned them into a highly refined soybean oil used in today's better-spreading, longer-lasting automobile finishes.

The more ways like this that the Creative Processor finds to use soybean oil, the better market there is for your beans.

Another example of Creative Processing: Cargill makes Nutrena Dog Food to help puppies grow faster—and, at the same time, this helps make a better market for the 8 different farm products that are used in making dog food.

Through its several processing divisions, Cargill is proud to be one of the Creative Processors who are serving agriculture by constantly finding new, improved ways to "eat up" the farm products you raise.



Baby might go hungry if it weren't for Creative Processing. Today there are 1,750,000 **more** babies than 20 years ago, but there are 3,300,000 **fewer** milk cows. Babies have nothing to worry about though, because the average milk production per cow has increased 27% during the last 20 years. Better dairy feeds (made by Creative Processors like Nutrena, Cargill's Feed Division), and better dairy cow breeding have made this possible. Creative Processors have also helped widen the market for milk by developing a host of new and improved milk products.

CARGILL, Creative Processors of Farm Products

Processing Plants and Grain Marketing Offices in Minneapolis and 45 other cities

PRODUCT OF Cargill CREATIVE PROCESSING

This is how Cargill is telling the importance of processors to farmer-readers of papers like The Farmer, Wallaces' Farmer, Dakota Farmer, Montana Farmer-Stockman, etc.

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Across the bottom of the ad is written: "Cargill, Creative processors of farm products. Processing plants and grain marketing offices in Minneapolis and 45 other cities. This is how Cargill is telling the importance of processors to farmer-readers of papers like *The Farmer, Wallaces' Farmer, Dakota Farmer, Montana Farmer-Stockman,* etc."

This ad also appeared in the July 1954 issue (p. 5) and the Sept. 1954 issue (p. 8) of this magazine. Address: Main offices: Minneapolis, Minnesota.

101. Terrill, R.L. 1954. The soybean research council: Information gathered by processor group benefits entire soybean industry. *Soybean Digest.* July. p. 18-20.
• ***Summary:*** Contents: Introduction. Annual meeting. Meal in feeds. A good overview of the goals and activities of the SRC which "is officially a standing committee of the National Soybean Processors Association."

Its "work is of considerable indirect benefit to soybean growers because the information it develops concerning many of the technical aspects of the soybean industry basically serves to increase the utilization of soybean products. Its activities range from studies relating to breeding and cultural practices on soybeans to the utilization of the multitudinous soybean-containing products of today's market. In virtually no other American industry do the processors involved maintain entirely at their expense a group of technical experts whose basic purpose is to gather, evaluate, and distribute technical information for the benefit of the entire industry."

Total membership now stands at 14. Membership is made up not only of men from various member firms but may also include members of outside organizations, for example Dr. J.C. Cowan, head of the oil and protein division of the Northern Regional Research Laboratory at Peoria, Illinois.

The chairman of the council is elected by vote and generally by custom serves for at least 2 years. Dr. Howard C. Black (of Swift & Co., Chicago) is the current chairman. The council maintains a survey (library) of literature pertaining to the soybean. "For the past nine years, the Soybean Research Council has sponsored an Annual Flavor Stability Symposium, and much of the progress in bringing soybean oil to its present status as the major edible oil of the United States can be traced to material sponsored, encouraged, and presented at these meetings. These papers are later presented at the appropriate technical society, but the symposium method is such as to encourage free and frank discussion and interchange of information..." "The most recent symposium was conducted in October 1953 at Chicago, with Harry L. Craig as chairman. Deodorization techniques, objective methods of grading flavor and flavor stability, and a panel discussion of factors limiting the utilization of soybean oil were among the items on the program."

"Present members of the Soybean Research Council: H.C. Black, Chairman, Swift & Co., Chicago, Illinois. M.L. Brinegar, Allied Mills, Inc., Libertyville, Illinois. J.W. Hayward, Archer-Daniels-Midland Co., Minneapolis, Minnesota. Albert C. Groschke, The Borden Co., New York, NY. H.L. Craig, The Buckeye Cotton Oil Co., Cincinnati, Ohio. W.W. Cravens, Central Soya Co., Inc., Decatur, Indiana. Stuart Bauer, The Drackett Co., Cincinnati, Ohio. Fred H. Hafner, General Mills, Inc., Chemical Div., Minneapolis, Minnesota. Max A. Jeter, The Glidden Co., Indianapolis, Indiana. J. Wesley Nelson, Cargill, Inc., Minneapolis, Minnesota. Everett Blasing, Pillsbury Mills, Inc., Clinton, Iowa. Harold L. Wilcke, Ralston Purina Co., St. Louis, Missouri. Robert L. Terrill, Spencer Kellogg & Sons, Inc., Buffalo, New York. John C, Cowan, Northern Regional Research Laboratory, Peoria, Illinois.

In 1952 the SRC conducted a "broad program of study with regard to the position of soybean oil meal in animal feedstuffs. It was attempted to establish two broad principles: one, the effect of various types of processing (expeller vs. solvent, etc.) on the nutritional quality of soybean oil meal, and two, whether or not this nutritional quality could be predicted on the basis of chemical tests." Soon all manufacturers were invited to submit samples for evaluation.

In 1953 another soybean oil meal survey, even more ambitious than the first, was undertaken. Address: Spencer Kellogg & Sons, Inc., Buffalo, New York.

102. Cargill, Inc. 1955. They're having a "hoe-down" on your flaxseed! (Ad). *Soybean Digest.* Jan. p. 34.
• ***Summary:*** The top half of this full-page black-and-white ad is a photo showing many people square dancing. A small numbered outline of the photo shows five farm products. For example, a plastic belt is made from soybeans.

"Well over 75% of all farm products are processed before being eaten or used. And, Cargill Creative Processing helps increase America's appetite for these crops with 3 research laboratories, 18 control labs and a 400-acre research farm–all staffed by scientists and technicians who are ever seeking new and better ways to 'eat up' the things you grow."

Across the bottom of the ad is written: "Cargill, Creative processors of farm products." To the right is the company's medallion-style logo, which reads: "Product of Cargill–Creative processing." Address: Main offices: Minneapolis, Minnesota.

103. Cargill, Inc. 1955. Fire or explosion in solvent extraction plant. Minneapolis, Minnesota. Feb. 14.
• ***Summary:*** Soderland, Sterling. 1955. "Spark blamed in blast at Cargill plant; 14 hurt." *Minneapolis Morning Tribune.* Feb. 15. p. 1, 7. A tremendous explosion at 10 a.m. Monday, Feb. 14, demolished a $500,000 Cargill, Inc. plant where hexane solvent is used to extract linseed oil from

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flaxseed; 14 workers were injured, five critically.

Broehl, Wayne. 1992. *Cargill: Trading the World's Grain.* p. 779. The most serious disaster occurred on 14 Feb. 1955 when Cargill's Minneapolis flax plant exploded. *Cargill News* reported that "The shock has hit the entire Cargill organization a staggering blow–the worst in our history." Four men were killed outright and 10 others seriously injured. Cargill MacMillan wrote: "We have no idea what caused the explosion and probably never will." No mention is made (at least on this page or the next) that the plant used highly-explosive hexane solvent.

Letter from Joe Givens of Edina (near Minneapolis), Minnesota. 2005. May 8. In the 1940s and 1950s, the extraction industry was plagued by hexane explosions in solvent extraction plants. Cargill had a number of hexane explosions, one at their flaxseed processing plant in Fridley, Minnesota (late 1946-1955), where several men were badly burned. Note: Fridley is about 6 miles north of Minneapolis, Minnesota.

Kingsbaker, C. Louis. 2005. "List of fires and explosions in extraction plants." Atlanta, Georgia. 3 p. Aug. 4. Unpublished manuscript. Location: Minneapolis. Date: 1955. This plant crushed flaxseed, not soybeans. We include it in this list because of its historical significance. Talk with Louis Kingsbaker. 2005. Aug. 11. This was a very important explosion for Cargill, because Ray Pound, the general superintendent of all of Cargill's plants, was very badly burned. Another person named Richard Ehrmann was badly hurt. Before that accident, Cargill's plants were not that safe; but after it, Cargill became a very safe operating company.

Letter (e-mail) from Joe Givens with more basic information about explosion or fire. 2005. Aug. 8. Magnitude: 10 (where 10 is the most severe).

Talk with Joe Givens. 2005. Aug. 20. Ray Pound, who was Cargill's general superintendent (in charge of operations at their plants) was badly burned in this accident. Joe knew another man who was injured in the same explosion. Joe saw him later and "his ears were burned right off."

Talk with Lou Kingsbaker. 2005. Aug. 20. Lou has been to this plant quite a few times. Ray Pound was badly burned in this explosion, but not killed. Lou thinks that nobody was killed in this explosion; he could find out for sure by contacting LeRoy Vain, of Cargill. Richard Ehrmann was also badly burned. Ray was the general superintendent for all of Cargill's plants. He stayed on the job until about 1971 or 1972. Lou worked with Ray at the new Cargill plant on Torrence Ave. in Chicago. Lou was the startup engineer. It was Cargill first new and large plant, 500 TPD at the time. Ray, who loved wrestling, always called Lou "young fella." Cargill's solvent extraction plant in Minneapolis was built by De Smet, whose world headquarters are in Belgium. De Smet had built only one other plant in the US at this time. After this accident, De Smet pulled out of the U.S. and didn't try to sell any more plants.

Hennepin County Medical Center website. 2005. Aug. 22. Under "Timeline" at 1955. "An explosion at Cargill Oil Extraction Plant injures 14, 10 of whom are admitted to MGH."

Talk with Joel McColl of Savage, Minnesota, fire department. 2005. Aug. 23. The explosion was on 14 Feb. 1955 at Cargill's flax plant near Minneapolis; 10 injured, 4 died. The best coverage would have been in the Minneapolis Star or Tribune. Savage is not part of Minneapolis; they are on different rivers. Minneapolis is on the mighty Mississippi River; Savage is on the much smaller Minnesota River. and Savage is 18-20 miles away.

Talk with Janet Williams, Savage Historian. 2005. Aug. 23. The 1955 Cargill explosion was not in Savage! It was in Minneapolis, on Valentine's day. She got the date from Chelsea in the Cargill archives. An article at the time about it appeared in the *Cargill Newsletter.*

Talk with Lou Kingsbaker. 2005. Sept. 11. After the 1955 fire and explosion at their flax solvent plant in Minneapolis at which Ray Pound was badly burned [and also perhaps the fire and scathing editorial at their soybean solvent plant less than a month later in Savage], Cargill established a new policy: Safety first! Safety takes precedence over production. If a plant manager becomes aware of a safety issue, he has this authority to stop production in order to deal with the safety issue. This was a big, important change. Address: Minneapolis, Minnesota.

104. Flanagan, Barbara. 1955. 'Suddenly there was fire all around me,' says victim: Cargill workers tell of being thrown in air. *Minneapolis Morning Tribune.* Feb. 15. p. 1.
• ***Summary:*** Three men describe the fire and explosion on Monday, Feb. 14, at the four-story Cargill linseed oil extraction plant, which used flammable hexane solvent in its extractor. They were the only three among the 14 injured employees who were able to talk about the explosions. Photos show the three burned men in the Minneapolis General hospital, wrapped in bandages, with only tiny slits of each one's eyes, nose, and mouth; each is being visited by relatives. Edward Parker, age 30, is in poor condition. Michael Whisney, 52, is in fair condition with multiple burns. Melvin Johnson, 27, is in poor condition. Address: Staff writer.

105. *Minneapolis Morning Tribune.* 1955. List of Cargill blast injured. Feb. 15. p. 7.
• ***Summary:*** Gives the name, home address, condition, and extent of burns for each of 8 men at the Minneapolis General Hospital, 4 men at the Fairview hospital, and two men at Northwestern hospital. For example at General: C.R. Pound, age 47, 29 Ashley road, Hopkins, critical, 65 per cent burns. Portrait photos (taken before the blast) show 8 of the victims. A blood bank will aid the victims. Address: Staff writer.

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106. Soderland, Sterling. 1955. Spark blamed in blast at Cargill plant; 14 hurt. *Minneapolis Morning Tribune.* Feb. 15. p. 1, 7. Tuesday.
• ***Summary:*** A tremendous explosion at 10 a.m. Monday, Feb. 14, demolished a $500,000 Cargill, Inc. plant where hexane solvent is used to extract linseed oil from flaxseed; 14 workers were injured, five critically. A spark is believed to have ignited "highly-explosive hexane gas," which caused the blast. In the plant, which had been shut down for repairs at the time, every effort was made to follow safety precautions.

The plant was located in northern Minneapolis, at 3700 Thirty-seventh avenue NE (at 5th St.) on the southern side of the border between Hennepin and Anoka counties. It was one of five buildings at Cargill's linseed oil facility, situated east of the Mississippi River just south of Columbia Heights, which itself is just south of Fridley.

The injured men were on a maintenance crew that had been working around the clock, after a breakdown, to get the relatively new plant back in production. The hexane gas may well have leaked from the extractor, which had been unsealed to enable workers to repair it. At the time, several workers wearing gas masks were trying to remove the flaxseed meal that had clogged the giant steel extractor. Fire later roared through some 70 tons of the meal left in the extractor.

Helping to supervise the repairs was C.R. Pound, age 47, the general superintendent of all Cargill's U.S. vegetable oil plants. A resident of Hopkins, Minnesota, he is among the critically burned and is reported to have been blown from the third story of the plant. Richard Ehrmann, the plant superintendent (age 30) and Harvey Marxhausen, plant manager, were both injured but not seriously.

Of the 10 men were taken to Minneapolis General hospital, 4 were in critical condition, 5 in poor, and 1 in fair. Of the 4 men at Fairview hospital, one was in critical condition and 3 satisfactory. All suffered burns. The blast was one of the worst in the Twin Cities area since 1951.

Put into operation in Oct. 1953, Cargill's plant had a capacity of 18,000 bushels/day of flaxseed and is considered one of the most up-to-date in the USA. The entire vegetable oil division employs 88 people. Another Cargill plant at Savage (Port Cargill) makes oil from soybeans. Address: Staff writer.

107. *Minneapolis Morning Tribune.* 1955. Two die of injuries from fire, blast at Cargill plant. Feb. 16. p. 1. Wednesday.
• ***Summary:*** The two are Joseph Silva and John M. Sleppy, Four of the injured men remain in critical condition. Address: Staff writer.

108. *Minneapolis Morning Tribune.* 1955. Fire prevention chief sees Cargill officials, suggests safety rules. Feb. 17. p. 1.
• ***Summary:*** Charles Johnson, Minneapolis fire prevention chief, suggested three safety rules for firms handling explosive gases. One key point is that hexane is heavier than air. Address: Staff writer.

109. *Shakopee Argus-Tribune* (*Shakopee, Minnesota*). 1955. Fight insidious fire for 11 hours (Photo caption). March 10. p. 1.
• ***Summary:*** This photo shows the fire that started on the bitter cold afternoon of Sunday, March 6, at the Cargill Inc. soybean oil extraction plant in Savage, Minnesota. Shakopee and Savage firemen fought the blaze in a soybean storage bin. The fire started in the soybean drying bin at the lower right and threatened to spread to other structures. "Dense smoke prevented close contact with the seat of the fire. This *St. Paul Pioneer Press* picture was taken at the early stages of the fire. As the day wore on firemen became drenched with water which became a coating of ice, and icicles formed on their helmets and equipment."

Talk with Joe Givens, former manager of Dawson Mills for 28 years. 2001. June 1. Savage is a small town just south of Minneapolis. Almost nobody lives in Savage and it may not even have a newspaper. Shakopee is about 10 miles west of Savage. The story of a 1955 explosion at the Cargill plant in Savage would probably be found in a Minneapolis newspaper, such as the *Minneapolis Star Tribune*.

110. *Shakopee Valley News* (*Shakopee, Minnesota*). 1955. Battle Cargill soybean fire at Savage 9 hours Sunday. March 10. p. 1, 4, 9.
• ***Summary:*** Firemen from Shakopee and Savage battled a stubborn fire that started on the bitter cold afternoon of Sunday, March 6, at the Cargill Inc. soybean oil extraction plant in Savage, Minnesota. "The fire broke out in a soybean dryer at the east end of the grain elevators shortly before 2 p.m.... The dryer is a metal structure about 20 feet square in which soybeans are first placed before processing.

"John Sheperd, Cargill superintendent, reported that it contained 800 bushels of soybeans at the time of the fire." "Damage is estimated at $5,000 to $10,000."

The baffle plates covering most of the dryer made it difficult for the firemen to reach the flames with water. "They finally took cutting torches and cut holes in the sides of the metal structure to get water on the hot spots. They were hampered by the extremely cold weather which quickly coated the building, ladders, and the firemen themselves in ice." It is estimated that the 2 fire departments poured more than a quarter million gallons of water in the fire. At no time were other parts of the plant threatened since the dryer is built against the concrete wall of the grain bins.

Large photos show: (1) The fire at the soybean plant. (2) Three firemen in gear observing operations during the all-day fire. (3) A fireman on a ladder using an acetylene torch to cut

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into the steel plates high up on the soybean dryer.

111. *Shakopee Valley News* (*Shakopee, Minnesota*). 1955. The Cargill fires. March 10. p. 10.
• ***Summary:*** A scathing editorial: "After watching the Savage and Shakopee firemen work in sub-zero weather at the Cargill elevator fire Sunday [in Savage, Minnesota], we began wondering just how much punishment a volunteer fireman is expected to take... The firemen were on the job for at least nine hours, battling with frosty hose lines up and down ice-encrusted ladders, all the time subjected to piercing wind."

"While the Cargill establishment is a tremendous asset to the community, the very nature of the operation also poses a dangerous fire problem for the department. Recently a similar plant at Columbia Heights was completely wrecked by a fire and hexane gas explosion. [Note: This happened on 14 Feb. 1955, less than 1 month ago, at the Cargill flax processing plant in northern Minneapolis]. At that disaster a number of men were injured and at least four men died. Already two men have been killed in fires or explosions at the Cargill plant in Savage.

"Which leads to the inquiry. Isn't it about time that additional plant fire protection is installed by Cargill at Savage?" Such as an internal sprinkling system or a carbon-dioxide gas system within the plant.

Firemen don't expect to be pampered when they respond to a fire. "We noticed but one Cargill official there for awhile, and perhaps there were others, but they were not particularly noticeable. The half-frozen, ice encrusted firemen of Shakopee and Savage were very noticeable however. So noticeable that a few ladies of Savage, some of the Shakopee fire ladies, and a state highway patrolman collaborated in getting some hot coffee and food to the firemen and in some cases went and rounded up dry clothes so that the firemen, most of whom responded in their best Sunday attire, could take off their wet, frozen and ruined clothes and change to dry, warm clothing.

"It seemed to us that one of the largest companies of its kind in the world could have thought of a 'cup of coffee' for the men fighting in the cold to save property and put out the fire."

112. Suel, John. 1955. Down in the valley. *Shakopee Valley News* (*Shakopee, Minnesota*). March 10. p. 10.
• ***Summary:*** A "stream of consciousness" view of the Cargill fire in Savage, Minnesota. "The Shakopee boys had rain coats and boots on and it was nasty but many of the Savage firemen worked the fire in their regular clothes. Sure hope the Village can find funds to add raincoats and boots to their full complement of firemen soon. They have a newly formed department and their basic equipment is tops but its too much to ask of those fellows to get drenched in freezing weather."

113. *Shakopee Valley News* (*Shakopee, Minnesota*). 1955. Drier fire Tuesday at Cargill plant. March 17. p. 1.
• ***Summary:*** "Savage firemen were called to extinguish a fire at the Cargill plant in Savage early Tuesday evening [March 15]. The fire, which was discovered by Russell Egan shortly after it had started, was in the upper portion of a soybean drier in Elevator C just north of the drier in which Savage and Shakopee firemen had battled a fire for nine hours March 6.

"Savage firemen were assembled for their regular firemen's meeting when they were summoned to the Cargill plant. They responded immediately and had the fire out in about 30 minutes."

Note: This is the 2nd fire in 9 days at the same Cargill soybean solvent extraction plant.

114. Cargill, Inc. 1955. End run... 1200 miles long (Ad). *Soybean Digest.* Sept. p. 24.
• ***Summary:*** The top half of this full-page black-and-white ad is a photo showing two teams playing football in a stadium. A small numbered outline of the photo shows five farm products. For example, a plastic helmet and the cleats on the football shoes are made from soybeans.

"This touchdown gallop actually started hundreds of miles from the gridiron–maybe on your own farm. You see, at least three farm products are playing an important part in that end run. Can you recognize them? Probably not, because they are so changed from the way you last saw them.

"Changing what you raise into other products millions of people want is the job we at Cargill call Creative Processing. Take that plastic in the football helmet, for instance. It was once just a patch of soybeans. But Creative Processors (like Cargill's Soybean Oil Division) have found ways to change raw soybeans into basic ingredients for plastics, shortening, cereals, livestock feeds–and dozens of other useable products for people all over the world.

"Creative Processing is one of the most important reasons today's farmers have bigger incomes, higher living standards, and better markets than their fathers and grandfathers had.

"So next time you buy any product for your farm or home, why don't you see if you can figure out which of your own farm products were used in making it–because of Creative Processors like Cargill. (Study the chart at right-and see what we mean)."

Across the bottom of the ad is written: "Cargill, Creative processors of farm products." To the right is the company's medallion-style logo, which reads: "Product of Cargill–Creative processing." Address: Main offices: Minneapolis, Minnesota.

115. National Soybean Processors Association. 1955. Year book, 1955-1956 (Association year). Chicago, Illinois. 48 p.
• ***Summary:*** On the cover (but not the title page) is written:

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"Year Book and Trading Rules, 1955-1956." Contents: Constitution and by-laws and code of ethics. Officers, directors and committees for 1955-56. Membership of the National Soybean Processors Association. Trading rules on soybean oil meal. Appendix to trading rules on soybean oil meal: Official methods of analysis (moisture, protein, oil, crude fiber {only method numbers listed}, sampling of soybean oil meal). Trading rules on soybean oil: Tentative refined oil specifications. Appendix to trading rules on soybean oil: Uniform sales contract, standard specifications for crude soybean oil for technical uses, grading soybean oil for color (N.S.P.A. tentative method), methods of analysis (A.O.C.S. official methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses; soap stock, acidulated soap stock and tank bottoms (only method numbers listed).

The section titled "Officers, directors, and committees" (p. 12-15) states: President: R.G. Houghtlin. V.P., Chairman Executive Committee: Dwight L. Dannen. Secretary: E.A. Cayce. Treasurer: H.A. Abbott. Executive Committee: Dwight L. Dannen, Chairman, D.O. Andreas, H.A. Abbott, R.G. Golseth (term ending Sept. 1956). E.A. Cayce, A.C. Hoehne, R.G. Houghtlin, W.E. Huge (term ending Sept. 1957).

Board of Directors (Term expiring Sept. 1956): E.A. Cayce, Jasper Giovanna, Willard C. Lighter, M.D. McVay, Ralph S. Moore, Clark Yager. Term expiring Sept. 1957: D.O. Andreas, Earl J. Brubaker, Dwight L. Dannen, R.B. Jude, W.H. Knap, Glenn Pogeler. Term expiring Sept. 1958: S.D. Andrews, Jr., S.E. Cramer, A.C. Hoehne, W.E. Huge, Donald C. Ogg, J.J. Quinlan.

Standing committees: For each committee, the names of all members (with the chairman designated), with the company and company address of each are given–Traffic and transportation. Technical. Soybean grades and contracts. Oil trading rules. Meal trading rules. Crop improvement council. Soybean research council. Uniform rules and standards for soybean oil meal. Safety and insurance. Lecithin. Regional: Ohio and East; Illinois, Indiana, Kentucky, Wisconsin and Northwestern Missouri; Iowa, Minnesota, Nebraska, South Dakota; Kansas, and Western Missouri; Southeastern Missouri and the Mississippi River Delta Sections.

The following organizations, and individuals are members of NSPA: Albers Milling Co., Los Angeles, California (W.P. Kyle). Allied Mills, Inc., Board of Trade Bldg., Chicago, Illinois; Peoria, Illinois; Taylorville, Illinois; Omaha, Nebraska. Archer-Daniels-Midland Co., Box 839, Minneapolis 2, Minnesota; Mankato, Minnesota; Decatur, Illinois; Baldwin Oil Mill, Inc., Foley, Alabama (W.H. Sessions). Belzoni Oil Works, Belzoni, Mississippi (Irby Turner). Big 4 Co-op. Processing Assn., Sheldon, Iowa (Chas. W. Hanson). Boone Valley Co-op. Processing Assn., Eagle Grove, Iowa (Edward Olson). Borden's Soy Processing Co., New York 17, New York (E.J. Brubaker); Waterloo, Iowa; Chicago 4, Illinois (James R. Pentis); Kankakee, Illinois. Buckeye Cotton Oil Co. (The), Cincinnati 1, Ohio (W.H. Knapp, R.B. Williams); Little Rock, Arkansas; Wilson, Arkansas; Louisville, Kentucky; Greenwood, Mississippi; New Madrid, Missouri; Raleigh, North Carolina; Memphis, Tennessee. Cargill, Inc., Minneapolis 15, Minnesota (M.D. McVay, Jay Haymaker); Chicago 3, Illinois (W.B. Saunders); Cedar Rapids, Iowa (C.W. Bohlander); Fort Dodge, Iowa (W.J. Wheeler); Washington, Iowa (Hugo Lensch); Philadelphia, Pennsylvania (R.F. Hubbard). Central Iowa Bean Mill, Gladbrook, Iowa (Paul H. Klinefelter). Central Soya Co., Inc., Fort Wayne 2, Indiana (W.E. Huge); Gibson City, Illinois (Newell Wright); Decatur, Indiana (T.H. Alwein); Marion, Ohio (W.E. Mann); Chattanooga, Tennessee (R.W. Fay). Checkerboard Soybean Co., Decatur 30, Illinois (R.E. Baer). Colchester Processing Co., E. St. Louis, Illinois (E.L. McKee). Consumer's Soybean Mills, Inc., Minneapolis 15, Minnesota (Riley W. Lewis). Dannen Grain and Milling Co., St. Joseph 1, Missouri (Dwight L. Dannen). Delphos Grain and Soya Products Co., Delphos, Ohio (Floyd E. Hiegel). Delta Cotton Oil and Fertilizer Co., Jackson, Mississippi (Alfred Jenkins). Drackett Co. (The), Cincinnati 32, Ohio (Roger Drackett). Farmers Cooperative Assn., Ralston, Iowa (Karl Nolin). Farmers Cooperative Co., Dike, Iowa (C.M. Gregory). Fremont Cake and Meal Co., Fremont, Nebraska (Harry E. Wiysel). Funk Bros. Seed Co., Bloomington, Illinois (H.A. Abbott). Galesburg Soy Products Co., Galesburg, Illinois (Max Albert). General Mills, Inc., Chem. Div., Minneapolis 1, Minnesota (Sewal D. Andrews, Jr.); Belmond, Iowa (Walter B. Hotvet); Rossford, Ohio (Glenn W. Martin). Glidden Co. (The), Chicago 39, Illinois (Willard C. Lighter). Gooch Milling & Elevator Co., Lincoln 1, Nebraska (M.R. Eighmy). Haynes Milling Co., Inc., Portland, Indiana (Clarence E. Peters). Holland Pioneer Mills, Ohio City, Ohio (G.A. Holland). Honeymead Products Co., Mankato, Minnesota (D.O. Andreas, L.W. Andreas); Huegely Elevator Co., Nashville, Illinois (J.W. Huegely). Illinois Soy Products, Springfield, Illinois (Jasper Giovanna, Eric Nadel). Iowa Milling Co., Cedar Rapids, Iowa (Joe Sinaiko, Bob Scroggs). Iowa Soy Co., Redfield, Iowa (Donald C. Ogg). Ipava Farmers Processing Co., Ipava, Illinois (Phil. Snedeker). Kansas Soya Products Co. (The), Emporia, Kansas (Elmer L. Buster). Lauhoff Soya Co., Danville, Illinois (R.G. Golseth). Marshall Mills Inc., Marshalltown, Iowa (J.I. Johnson). McKee Feed & Grain Co., Muscatine, Iowa (L.R. McKee). Mid-States Fats and Oils Corp., Peru, Indiana (Oren P. Cochran); Indianapolis, Indiana (Paul J. Sicanoff). Minnesota Linseed Oil Co., Minneapolis 21, Minnesota (R.J. Lindquist, Jr.). Mississippi Cottonseed Prod. Co., Jackson, Mississippi (H.E. Covington). Muscatine Processing Corp., Muscatine, Iowa (G.A. Kent). North Iowa Cooperative Processing Association, Mason City, Iowa (Glenn Pogeler). Ohio Valley Soybean Co-op, Henderson, Kentucky (A.I. Reisz).

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Owensboro Grain Co., Owensboro, Kentucky (William M. O'Bryan). Pacific Vegetable Oil Corp., San Francisco 7, California (B.T. Rocca, Jr.). Pillsbury Mills, Inc., Clinton, Iowa (Clark Yager, D.B. Long, E.A. Blasing). Planters Manufacturing Co., Clarksdale, Mississippi (A.K. Shaifer). Quaker Oats Co. (The), Chicago 54, Illinois (K.N. Tilden). Quincy Soybean Products Co., Quincy, Illinois (Irving Rosen, Norman Rosen). Ralston Purina Co., St. Louis 2, Missouri (Donald B. Walker); Kansas City, Missouri (F.G. Franze); Bloomington, Illinois (D.D. Rowland); Lafayette, Indiana (Ralph Guenther); Iowa Falls, Iowa (H.N. Johnson). Riverside Oil Mill, Marks, Mississippi (William King Self). Sisketon Cotton Oil Mill, Inc., Sisketon, Missouri (P.B. Bartmess). Sioux Soya Mills, Div. of Sioux Industries, Inc., Sioux City 2, Iowa (John W. Zipoy). Southern Cotton Oil Co. (The), Goldsboro, North Carolina (W.V. Westmoreland); Tarboro, North Carolina (W.A. Moore). Southland Cotton Oil Co., Div. of Anderson Clayton Co., Paris, Texas (James R. Gill). Soy-Rich Products, Inc., Wichita, Kansas (Ralph S. Moore). Spencer Kellogg and Sons, Inc., Buffalo 5, New York (Robert B. Jude); Chicago, Illinois; Decatur, Illinois; Des Moines 6, Iowa; Bellevue, Ohio; El Centro, California. Swift & Co., Union Stock Yards, Chicago 9, Illinois (S.E. Cramer). Tri-County Co-op Soybean Assn., Dawson, Minnesota (J.C. Givens). Wells (Ralph) & Co., Monmouth, Illinois (Ralph Wells). West Bend Elevator Co., West Bend, Iowa (R.W. Jurgens). West Tennessee Soya Mill, Inc., Tiptonville, Tennessee (Peter Frederickson).

Associate Members: American Feed Stores Home Organization (The), Minneapolis, Minnesota. Armour & Co., Chicago 9, Illinois (John H. Noble). Best Foods, Inc. (The), New York 17, NY. Capital City Products Co., Columbus 16, Ohio. Clinton Foods Inc., Clinton, Iowa. Cooperative Mills Inc., Baltimore 30, Maryland. Cox (Chas. M.) Co., Boston, Massachusetts. Humco Co. (The), Memphis 1, Tennessee. Kraft Foods Co., Chicago, Illinois. Lever Bros Co., New York 22, New York. Procter & Gamble Co., Cincinnati 1, Ohio. Spartan Grain & Mill Co., Inc., Spartanburgh, South Carolina. Tuckers (Mrs.) Products, Div. of Anderson Clayton Co., Sherman, Texas. Wilson & Co., Inc., Chicago, Illinois. Address: 3818 Board of Trade Building, Chicago 4, Illinois.

116. Cargill, Inc. 1956. What is a farm mother? (Ad). *Soybean Digest.* April. p. 13.
• ***Summary:*** The top half of this full-page black-and-white ad shows an illustration (painting) of a mother looking wistfully out the door and waving good-bye to her children as they are carried away through the snow in a school bus.

The answer to the title is: "Well, that depends on whom you ask." Twelve examples are given, such as: "To her chickens, she's an egg taker... To her preacher, she's a child of God... To her mother, she's still a child... To her husband, she's a reason for living."

The text explains: "As the job of the mother is caring for her children and feeding the children of other mothers, so the job of Creative Processors like Cargill is to serve the farm family. Cargill takes the farm crop to market... and if that crop must be changed in form to be sold... then Cargill must change it... Each day at Cargill we work to find better ways, and easier ways of farming so that the children of the farm mother may know a better life.

"We at Cargill pledge ourselves to continued support of our free farm economy and to continued research, in order to maintain the support and respect of the person we most respect and bow humbly to... The American Farm Mother.

"90 years of creative processing of farm products. Cargill. For free color reprints, suitable for framing, write Cargill, Inc., 200 Grain Exchange, Minneapolis 15, Minnesota." Address: Main offices: Minneapolis, Minnesota.

117. *Soybean Digest.* 1956. Grits and flakes... from the world of soy: Cargill to build at Memphis. May. p. 28.
• ***Summary:*** "Sale of an 11-acre tract on Presidents Island near Memphis, Tennessee, to Cargill, Inc., for the purpose of building a multi-million-dollar soybean processing plant, has been voted by the Memphis and Shelby County Port commission." The plant is expected to process about 700 tons of soybeans each 24-hour day. It will employ 50-100 people and operate 24 hours a day, 7 days a week, year-round. The plant will have a storage capacity of 2.2 million bushels of soybeans.

118. *Soybean Digest.* 1956. Cargill completes Chicago facilities [Soy oil refinery]. July. p. 31.
• ***Summary:*** "Improved service to users of soybean oil products will result from new production facilities recently completed by Cargill, Inc., according to an announcement by Fred Seed, vice president in charge of the company's oil division. "A newly constructed modern refinery which makes possible a more complete line of oil products is now in full operation in connection with Cargill's soybean extraction plant on the Calumet River in Chicago, Seed said. It is equipped with DeLaval hermetic centrifuges.

"The refinery, which was designed and built by Cargill engineers, is equipped for vacuum bleaching, soap stock acidulation, tanks for oil blowing, filtering and packaging. It includes facilities for loading out finished products in bulk or packaged, either by truck or rail.

"Seed said the new plant produces alkali-refined, bleached, degummed, non-break or blown oil for paints, alkyd resin producers and other industrial and edible users."

A photo shows: "Henry Sandvic, superintendent of Cargill's Chicago soybean oil plant is being shown a sample of oil which has just been put through the newly installed bleaching process equipment, shown in the background. Refinery superintendent Albert Bleakley, right, has just completed a test on the oil."

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119. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Memphis, Tennessee.
Date of Introduction: 1957 April.
Ingredients: Soybeans.
New Product–Documentation: *Soybean Digest.* 1956. "Cargill to build at Memphis." May. p. 28 "Sale of an 11-acre tract on Presidents Island near Memphis, Tennessee, to Cargill, Inc., for the purpose of building a multi-million-dollar soybean processing plant, has been voted by the Memphis and Shelby County Port commission."

Soybean Digest. 1957. "Cargill opens at Memphis: One of Cargill's nine vegetable oil plants, can process 8.5 million bushels annually and boost South's soybean crush." May. p. 30-31. On April 9, Cargill opened a new soybean crushing plant on President's Island near Memphis, Tennessee.

J. of the American Oil Chemists' Soc. 1985. "Soy pioneer bows out, others grow bigger." March. p. 474, 476. Cargill has a soybean crushing plant in Memphis, Tennessee.

Lauser, Greg C. 1982. "History of Cargill's involvement in the soybean processing industry." Minneapolis, Minnesota. 5 p. Unpublished typescript. March 15. Courtesy Cargill, Inc. In 1957 Cargill opened a soybean processing plant in Memphis, Tennessee. A second plant was added adjacent to the first in 1970.

120. *Soybean Digest.* 1957. Cargill opens at Memphis: One of Cargill's nine vegetable oil plants, can process 8.5 million bushels annually and boost South's soybean crush. May. p. 30-31.
• ***Summary:*** "A multipurpose soybean installation that will boost the South's total soybean crush by 15% to 20% was opened at Memphis, Tennessee, April 9 by Cargill, Inc.

"The new facility–an extraction, storage, shipping and merchandising center–includes a solvent-type extraction plant capable of converting 8.5 million bushels of soybeans yearly to 12.5 million gallons of oil and 200,000 tons of meal; large storage tanks for receipt of 2.2 million bushels of beans; loading and unloading facilities for trucks, river barges and rail and tank cars; and equipment for bulk pelleted and 'packaged' handling of 44% and 50% protein meal."

Fred M. Seed is vice president in charge of Cargill's vegetable oils division. The "plant is located in Memphis' new President's Island Industrial community, a 7,800 development on the Mississippi River's largest island 4 miles from [southwest of] Memphis and connected to the city proper by causeway. A 'still water harbor at the plant site enables river barges to load and unload," and to move by water to the Gulf of Mexico for export. The plant will further encourage soybean production in this part of Tennessee, Arkansas, and Missouri, and "will also stimulate the area's growing prepared-feeds industry. Seed said that "One of the most important aspects of today's southern economy is its remarkable increase in livestock numbers, especially poultry."

In the United States, Cargill now has 9 vegetable oil [oilseed processing] plants for soybeans, flax, and copra; "14 formula feed plants in its Nutrena Mills division; 45 terminal grain elevators at interior and coastal points, some 50 smaller grain elevators, and an extensive transportation division with facilities for rail, truck, and barge hauling.

The Memphis addition to Cargill comprises four 500,000-steel elevators and an 11-bin cement headhouse containing 200,000 bushels; oil storage tanks with a 380,000-gallon capacity; a large bean preparation plant in which the beans are hull, flaked and 'conditioned' under high temperature for the extraction process; an extraction plant in which hexane solvent [in a percolator-like Rotocel, 31 feet in diameter] removes the oil from the beans; recovery equipment to separate the oil from its solvent, and flakers, sifters and a large pellet mill to prepare the meal for distribution.

Photos show: (1) A ground-level view of the whole facility. (2) Part of the interior of the plant. (3) A rotary cooler that receives soybean oil meal after the oil has been extracted and the meal toasted. A man is inspecting the inside of the giant cooler.

Note: This is the earliest English-language document seen (Sept. 2016) that uses the word "pelleted" in connection with soybeans.

121. *Soybean Digest.* 1957. New Cargill research laboratory (Photo caption). Nov. p. 17.
• ***Summary:*** A large photo shows Cargill's new central research laboratory, which has been completed near the company's headquarters at Lake Minnetonka, 12 miles west of Minneapolis. The new three-story building will serve all divisions of the company and will enable it to increase research on industrial and edible oils, plus other fields in which the firm is interested.

122. Cargill, Inc. 1958. "You bet we're proud of our farm" (Ad). *Soybean Digest.* April. p. 35.
• ***Summary:*** The top half of this full-page black-and-white ad shows an illustration (painting) of a farm family (father, mother, son and daughter) with rolling farmland in the background. "'We like our way of life, too, because its been a good way and a useful one."'

"'We've all read about how much this country's population is booming so much, and how much more it's supposed to grow in just a few years.

"'But when a country grows–and a world for that matter–people need more of everything. And the things we produce here on the farm will be the key to a whole lot of that growth."'

"'Yes, from here the future looks good–good enough to make us mighty thankful we're a *farm* family.'

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"We at Cargill agree. There *is* going to be an increasing demand for farm products in the years to come... Just think, a predicted 220 million persons in the United States by 1975– and 3½ billion in the world by 1999!

From "our position as Number 2 man on the farmer-processor team, we can vouch for the kind of stock from which farm folks are made. They are rugged, honest, loyal, hard-working and warm-hearted people. They are a big part of our own future at Cargill.

"93 years of creative processing of farm products. Cargill."

Note: World population in 1999 was 6.00 billion, rather than the 3.5 billion predicted in this ad–or 1.7 times higher. Address: Main offices: Minneapolis, Minnesota.

123. Kantor, Max; Wilson, Samuel Guy. Assignors to Cargill, Incorporated (Minneapolis, Minnesota; a corporation of Delaware). 1958. Polymerized fatty oils and method of preparing same. *U.S. Patent* 2,838,551. June 10. 3 p. Application filed 9 Feb. 1953. [4 ref]

• ***Summary:*** "A further distinction in the present invention is in its application to the semi-drying oils such as soya bean oil. Normally this oil and its polymerization products are slow in drying, hence its use in normal products is greatly restricted. The soya bean oil polymerization product resulting from our process assumes a much faster drying rate approximating that of linseed oil, thereby greatly widening the use of this oil in paints and other similar coatings." "... in the case of refined soya bean oil the iodine value is reduced 10-60 units."

Nonpenetrating paint vehicles are made from soybean oil. Address: Minneapolis, Minnesota.

124. *Soybean Digest.* 1958. Soybean utilization conference at Peoria. Aug. p. 19.

• ***Summary:*** "The 1958 soybean utilization conference was held recently at the Peoria laboratories of the Northern Utilization Research and Development Division. The conference is an annual meeting of staffs of this division of the Agricultural Research Service, USDA, and the Soybean Research Council of the National Soybean Processors Association.

"Thirty-five attended this year. The Council had held its annual business meeting in Peoria prior to the conference with the division.

"Value of the exchange of information made possible by the meeting was mentioned by W.D. Maclay, director of the Utilization Division, as he welcomed the group to the laboratories. J.C. Cowan, chief of the Oilseed Crops Laboratory of the division, outlined the program in oilseed research, pointing out that emphasis is on industrial utilization of vegetable oils but that work is continuing on flavor stability and meal.

"W.W. Cravens, McMillen Feed Mills representative, speaking about research that is needed, suggested that more be done on the minor components of soybean meal. J.W. Cole, Glidden Co. representative, discussed research needed on soybean oil.

"Others on the program and subjects they discussed were: C.H. VanEtten, amino acids in soybean proteins; F.B. Weakley, the alleged antithiamin factor; C.D. Evans, research in edible soybean oil; L.E. Gast, plasticizer studies; and H.J. Dutton, labeling fatty acids."

A group photo shows those "attending the soybean utilization conference, all standing, left to right: First / Front Row–F.H. Hafner, General Mills, Inc., newly elected chairman of the Soybean Research Council; H.L. Wilcke, Ralston Purina Co., retiring chairman; R.L. Terrill, Spencer Kellogg & Sons, Inc.; W.D. Maclay, director Northern Utilization Research and Development Division [NU]; J.C. Cowan, NU; C.D. Evans, NU; and C.H. VanEtten, NU.

"Second Row–J.W. Cole, Glidden Co.; W.N. McMillen, A.E. Staley Mfg. Co.; W.W. Cravens, McMillen Feed Mills; J.W. Hayward, Archer-Daniels-Midland Co.; K.F. Mattil, Swift & Co.; A.R. Baldwin, Cargill, Inc.; and L.E. Gast, NU.

"Third / Back Row–M. J. Brinegar, Allied Mills; C.M. Wilson, Borden Co.; A.K. Smith, NU; R.W. Jackson, NU; R.G. Houghtlin, president, National Soybean Processors Association; H.J. Dutton, NU; F.B. Weakley, NU; E.L. Griffin, NU; H.M. Teeter, NU; and P.D. Aines, Buckeye Cellulose Corp."

125. Cargill, Inc. 1958. "My, they grow up *so* fast" (Ad). *Soybean Digest.* Sept. p. 33.

• ***Summary:*** The top half of this full-page black-and-white ad shows an illustration (painting) of a mother looking wistfully out the door and waving good-bye to her children as they are carried away through the snow in a school bus.

"'It seems such a short time ago that Joan was just a baby. And now she's starting high school!

"'Funny how youngsters seem to grow up so much faster than when I was a girl. But I guess it's just this day and age... everybody's so much busier... doing all kinds of new things... and so many new products and conveniences... why, you just lose all track of time.

"'Just imagine–now we have every single convenience on the farm that they have in the city. And it wasn't very long ago that keeping house on a farm meant working harder than other wives.

"'Oh, I'll admit life on the farm hasn't always been easy. But it seems like Ed and I have had a lot more good times than poor ones. We've made a good team. And things have changed so much since we started on the farm.

"'There are so many more people now! And judging from stories in the papers, there'll be almost twice as many people in years to come. My gracious, I wonder how many houses it will take to make enough homes for them all? And how much more food will it take to feed them? What a

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challenge it's going to be for our farms to produce so much more! I guess it means a man will have to be a really good farmer.

"'Of course, to be a good farmer means our youngsters, and we too, will have to be alert and smart. Things are bound to come along that will change some ways of farming, and we'll have to adjust to them.

"'I guess the best thing we can do is to bring Joan up properly. Then, let her make up her own mind what she'll do. Her farm background should be valuable in whatever she chooses. I can't help but think, though, that Joan will see things as I did and become a farm wife. A lot of work and responsibility–yes. But if the future rewards her as it has me, it will be the wisest decision she'll ever make."'

"* * *

"You know, that's the sort of thinking that's been going on at Cargill, too. It makes good sense to us.

"We have a lot of confidence in today's farm folks, and their youngsters. As a Creative Processor of farm products, we've worked closely with farmers for 93 years now–and we've learned just how much these people contribute to this country's economy. The farmer represents free enterprise in its finest form.

"With the statisticians predicting a U.S. population of 220 million by 1975–then topping that by predicting a world population of 3½ billion by 1999–it figures there will be a lot more farm products consumed than there are today. That means a larger demand on the farm than ever before... a tremendous new challenge to Cargill Creative Processing to find new ways to change raw farm crops into finished products, and to find new markets for those products.

"93 Years of Creative Processing of Farm Products. Cargill."

126. *Soybean Digest.* 1958. Index of advertisers. Sept. p. 4. • ***Summary:*** Aeroglide Corp. Air-O-Flex Equipment Co. Allied Mills, Inc. American Mineral Spirits Co. [Amsco]. V D. Anderson Co. William H. Banks Warehouses, Inc. Barrow-Agee Laboratories, Inc. Philip T. Berkley. Bin-Dicator Co. Blaw-Knox Co. R.W. Booker & Associates. R.J. Brown Co. Buhler Mill Engineering Co. Butler Manufacturing Co. Cargill, Inc. Central Soya Co., Inc. Chase Bag Co. Columbian Steel Tank Co. D.R. Comenzo & Co. Crippen Manufacturing Co. Crown Iron Works Co. Dannen Mills, Inc. Davidson-Kennedy Co. Delphos Grain & Soya Products Co. Albert Dickinson Co. Drake Petroleum Co. Dunbar Kapple Inc. Eastern States Petroleum & Chemical Corp. A.T. Ferrell & Co. Filter Fabrics, Inc. French Oil Mill Machinery Co. General Mills, Inc. Grain Analysis. B.F. Gump Co. Ben Gustafson & Son Mfg. Co. Jacob Hartz Seed Co., Inc. Hess Terminal Corp. Honeymead Products Co. Huntley Manufacturing Co. Industrial Commodity Corp. Inland Forwarding Co. Iowa Milling Co. Kansas Soya Products Co., Inc. Lauhoff Soya Co. Law & Co. George Lloyd Levin. Myers-Sherman Co. Nellis Feed Co. Nickel Plate Road. North Iowa Cooperative Processing Assn. Penola Oil Co. Phillips Petroleum Co. Pillsbury Mills, Inc. Port of New Orleans [Louisiana]. Prater Pulverizer Co. PTC Cable Co. Quincy Soybean Products Co. Rice Grain Corp. Rolfes Grain Aeration Companies. Seedburo Equipment Co. Shanzer Manufacturing Co. W.M. Simeral & Co. Simon-Carter Co. Standard Commission Co. Stillpass Transit Co. Suttle Equipment Corp. Twin City Machine Co. Urbana Laboratories. B.I. Weller Co. K.I. Willis Corp. Woodson-Tenent Laboratories.

Note: The September issue of *Soybean Digest* generally contains the most pages (and most advertisers) of any issue for the year, because it contains the report of the annual convention in the form of many of the papers presented there.

127. Strayer, George M. 1958. Export market programs begin to show results. *Soybean Digest.* Sept. p. 18-20, 22. • ***Summary:*** This long article begins: "Again it appears that in 1958 we are going to have the largest soybean crop in history. Acreage figures unmistakably are the highest ever recorded in the United States, and with anything like normal weather conditions it now appears we will go over the 500-million-bushel mark for the first time. It was 7 years ago at the Springfield, Illinois, meetings that Clyde Hendrix of Pillsbury Mills, Inc., predicted some day we would produce and utilize 500-million-bushel soybean crops. As I recall, he predicted it would come within a decade. Apparently it has arrived in just 7 years.

"And in spite of the largest soybean crop in history in 1957, the carryover of soybeans at the end of this crop year will be very small. CCC [Commodity Credit Corporation] took possession of more beans than ever before, started selling them immediately, and has moved a large portion of them into export and processing channels already. It does not now appear that we will have many more bushels of soybeans on hand on Sept. 30 than we did a year ago–which is in itself quite a remarkable feat.

"Consistently high monthly figures for the processing industry have whittled away at the stocks of soybeans. The largest exports in history have also helped. Exports would have been even greater on this date had it been possible to move the beans out of the Port of New Orleans as fast as buyers would have liked them. Japanese buyers planned on rather large quantities of Manchurian soybeans–in fact were being forced into buying the so-called Red Chinese soybeans by the Japanese governmental agencies, when one day the Red Chinese government decided it was going to cancel the contracts–and cancel it did! The move caught many Japanese buyers short, and they rushed into our market for unexpected purchases. The demand came at a time when corn and wheat were also moving, so there have been some very expensive and disconcerting delays in shipments. The situation is now

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being controlled, and the Port of New Orleans is taking steps to increase capacities to much greater levels of exports.

"This year we will export approximately 1 out of every 5 bushels of soybeans produced in the United States, with something over 90 million bushels going into export channels. We have also exported the oil from approximately another 100 million bushels, if my calculations are correct. In other words, in terms of oil, we have exported two-fifths of our 1957 soybean crop. Can there be any question that export markets are important to us as soybean producers? And to the processor as well? Can there be any question about the need for doing some extensive work in this field?

"Men from Abroad: Today we have with us here representatives from Japan, Italy and Spain, as well as from England. In the case of the first three countries we are operating, either through the American Soybean Association or the Soybean Council of America, market development programs in those countries. We can only begin to see results from those programs. We have a long way to go in developing those programs to their potential levels. But they do demonstrate some of the possibilities of well planned and executed programs designed to create greater markets for our products.

"Many of the countries of the world are still plagued with a so-called dollar shortage. They buy more from us than we buy from them. Thus, they do not have dollars with which to buy our soybeans and soybean products. There is an undisputed need for oil and protein. But we insist on dollars when we sell soybeans. As you heard in Mr. Sugiyama's speech yesterday, Japan is going to be forced to buy more soybeans elsewhere unless we are willing here in the United States to buy more Japanese goods. The same situation exists in Spain, in Italy, and in most other countries.

"We here in the United States, if we are going to sell more soybeans into world markets, are going to have to assume responsibility for stimulating purchase and usage of more goods from countries other than our own. Japanese porcelain and chinaware, Japanese soy sauce, German Volkswagens, English Fords, Italian cheeses, Italian women's clothes, Spanish leather goods, Spanish mercury, Dutch cheeses–all these items brought into the United States help those producing countries to earn dollars with which to buy soybeans. It is our job to see that the purchase of soybeans is more attractive than the purchase of Cadillacs! It is our job to get our share of the dollar earnings, as well as to stimulate them.

"Two years ago, at our meetings at Urbana, it was our pleasure to have with us a group of men representing the various segments of the soybean industry in Japan. You will remember their remarks to the convention. During the past year a similar delegation went from our industry to Japan, to meet with the leadership of the Japanese industry on their own soil. Our president, John Sawyer, was the leader of that team. Dave Wing and John Evans of your board of directors were also members. In addition, Jim Martin of the New Orleans Port Commission, representing the port elevator operation there; Jack Haymaker of Cargill, representing the shippers of export soybeans; and Howard McWard of Illinois Grain Corp., representing the country handlers, made up the team. Since their return these men have given innumerable speeches, and have explained the problems involved in the shipment of U.S. soybeans to Japan to many groups and many people.

"The Japanese American Soybean Institute is now over 2 years old. The second full year of operation has been completed. After our experience of the first year we doubled our budget, assumed new responsibilities for raising dollars for our share of the costs, made new contracts for the educational work, based on our previous experience, and really launched an aggressive campaign. You heard about it yesterday from Mr. Hayashi. With the combination of Japanese yen made available to us by the U.S. Department of Agriculture, our dollar expenditures, and the funds contributed by the Japanese trade groups, we have spent in the past year in Japan about $200,000 preaching the doctrine of your products.

"Osaka Trade Fair: I spent the month of March in Japan, and Albert Dimond and Cliff Gregory spent April there at the Osaka Trade Fair. I believe those men will agree with me that we are getting a job done. The combination of approaches is reaching millions of people with the story of the value of soy oil and soy protein products in the Japanese diet.

"On May 1 of this year we instituted, together with the Oregon Wheat League, the first joint market development project ever written. The Oregon Wheat League has been conducting a promotional program on wheat products, utilizing the so-called kitchen cars. In reality they are small buses, especially built and equipped to conduct demonstrations in the villages all over Japan. They were doing an excellent job with them. Wheat products and soybean products, in the Japanese diet, are complimentary products–they do not compete with each other.

"Why not combine our forces and operate a joint project to promote both wheat and soybean products? That has been done. Four new buses have been purchased to supplement the eight already in use. And those 12 buses, together with the crews, are today preaching the doctrine of miso, tofu, shoyu, natto and other soybean products throughout Japan.

"They are at the same time preaching the doctrine of noodles, bread, rolls, and other wheat products as a source of starch to go along with the soy protein and oil. In my estimation this is a very wise step forward in our whole philosophy of market development work.

"We have some problems in Japan. Convertibility of Japanese yen into dollars with which to buy international transportation prevents our having a Japanese delegation with us at this convention. In fact, it almost prevented the appearance of Mr. Hayashi. When I was in Japan in March

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I spent a large amount of time neutralizing the efforts being made by Japanese governmental agencies to channel soybean purchases away from the United States and toward Red China, because of the trade balance with that country. For the time being that problem has largely solved itself.

"We still have not solved all our problems of quality on exports to Japan, but we have made much progress. We still need to produce varieties adapted to their types of usage and establish some basis of trading so the Japanese buyer can be sure he will get the type of bean desired for his processing." Address: Executive Vice President and Secretary-Treasurer, American Soybean Assoc.

128. *Soybean Digest.* 1959. Cargill installs new storage at Fort Dodge [Iowa]. Feb. p. 16.
• ***Summary:*** Cargill, Inc. has completed installation of a 750,000 storage tank (750,000 bushels capacity) at the firm's soybean oil extraction plant in Fort Dodge, Iowa, bringing the total storage capacity at the site to 1.2 million bushels–according to Wendell J. Wheeler, plant manager.

"The [steel] tank is circular–140 feet in diameter and 52 feet high at the sides–with a cone-shaped top 78 feet at the peak. There are no internal posts... Filling and discharging is done by means of a reversible conveyor belt.

"The Fort Dodge installation is one of six Cargill soybean oil extraction and refining plants. Others are in Cedar Rapids and Washington, Iowa; Memphis, Tennessee; Chicago, Illinois; and Port Cargill, Minnesota."

129. Stanton, James M.; Roholt, D.M.; Wiff, J. 1959. Isophthalic alkyds in architectural finishes. *Paint Industry* 74(2):7-8, 10. Feb. (Chem. Abst. 53:8660c). [8 ref]
• ***Summary:*** Soybean oil is used in alkyd formulations. One of the largest volume alkyd resins produced is the 25% phthalic, 60% soybean oil resin. Address: Cargill, Inc.

130. *Soybean Digest.* 1959. Cargill buys site for grain exports. March. p. 8.
• ***Summary:*** "Purchase of land at Toledo, Ohio, for construction of a grain export elevator has been announced jointly by Cargill, Inc., grain handling and processing firm headquartered in Minneapolis, and the Toledo Port Authority. Owned formerly by the New York Central and Wabash railroads, the land fronts on the Maumee River 6 miles from Lake Erie in the Middle-grounds area.

"The company said details and date of construction will be developed in cooperation with the railroads and the Port Authority.

"The area was selected, Cargill said, because of its accessibility to rail and truck traffic as well as to lake vessels and seagoing freighters via the Maumee's proposed 27-foot channel that will accommodate any vessel capable of passing through the Seaway."

131. *Soybean Digest.* 1959. Cargill makes start on new Norfolk plant. April. p. 19.
• ***Summary:*** At South Norfolk, Virginia, Cargill, Inc. began construction of a solvent extraction plant to produce soybean oil and meal; it will boost soybean crushing capacity by 50-60% in the five-state production area of Virginia, Maryland, Delaware, North Carolina, and South Carolina. The estimated total crushing capacity of in those 5 states is about 12 million bushels.

At the ground-breaking ceremony, Cargill announced details of the processing plant and plans to expand its Norfolk grain export elevator from a present capacity of 2.25 million bushels to more than 4.5 million bushels. "The soybean installation–a multipurpose extraction, storage, domestic merchandising and exporting center–is being built adjacent to the elevator.

"Fred M. Seed, vice-president in charge of Cargill's vegetable oil division, said the new plant will be completed in time to handle this fall's soybean harvest." The Rotocel solvent extractor will have a capacity of 7 million bushels/year of soybeans. The storage expansion will include two 1-million bushel steel tanks and 13 smaller tanks totaling 325,000 bushels. South Norfolk city officials and Virginia and Carolina state agricultural officials were present at the ceremony.

An aerial-view illustration shows an artist's sketch of Cargill's planned plant in South Norfolk.

132. Blaw-Knox Construction Co., Chemical Plants Div. 1959. 33 plants built by Blaw-Knox extract 210,000,000 bushels of soybeans each year (Ad). *Soybean Digest.* June. p. 19.
• ***Summary:*** See next page. "Blaw-Knox, pioneer in this vital industry, sets the pace in developing processes, and designing and building plants for soybean extraction.

"In the United States more soybeans are extracted by Blaw-Knox equipment than by all other types combined.

"This leadership extends to the total fats and oils industry. Some 97 processors have relied on some phase of Blaw-Knox's engineering and construction services.

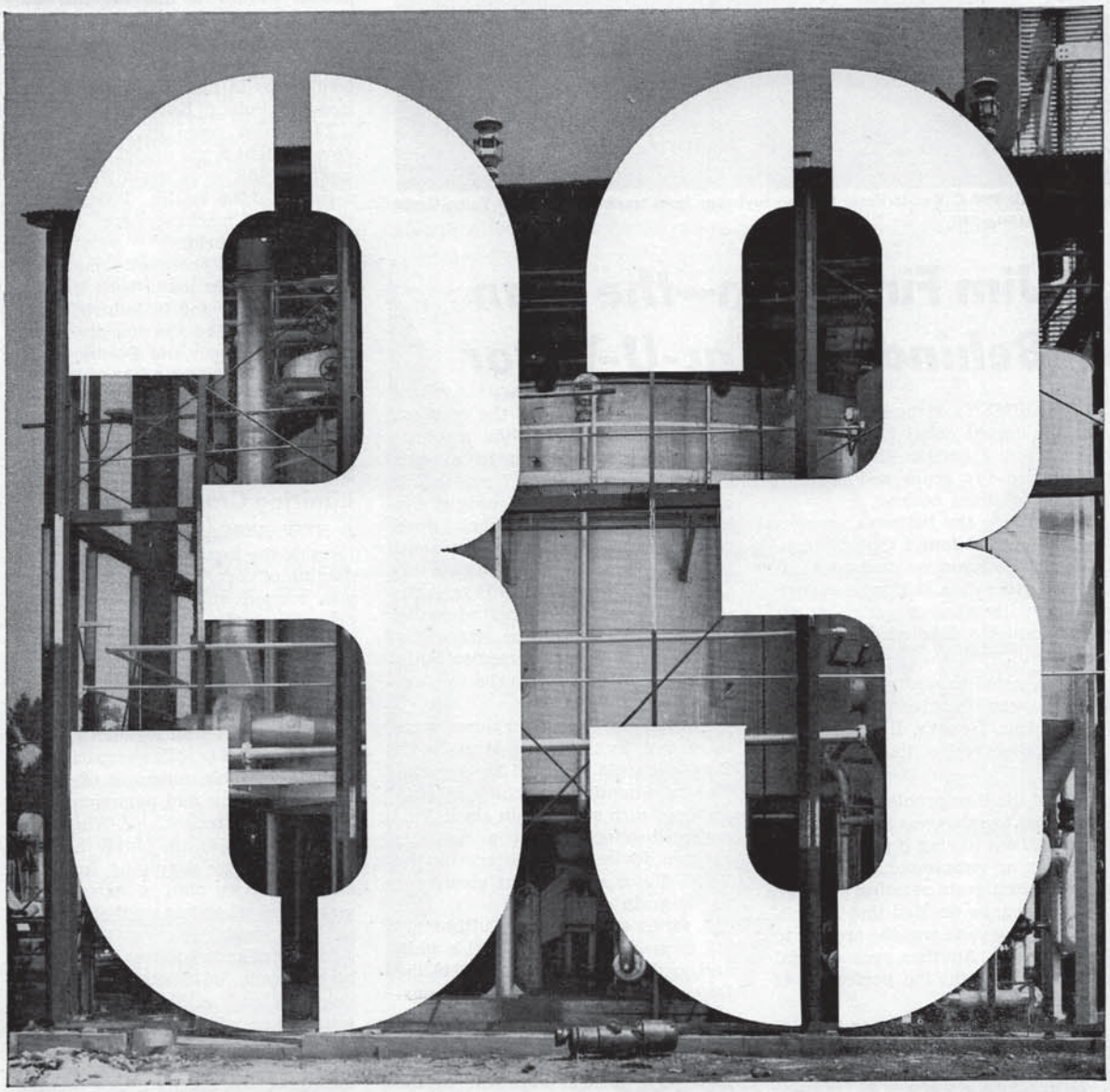
"For details, send for Bulletin 2515 which surveys plants and processes for the fats and oils industry, or contact our engineers for a preliminary discussion. Blaw-Knox Company, Chemical Plants Division with headquarters in Pittsburgh [Pennsylvania]. Branch offices in New York; Chicago [Illinois]; Haddon Heights, New Jersey; Birmingham [Alabama]; Washington, D.C.; and San Francisco [California].

plant builders for industry...

Across the top of the ad: "Blaw-Knox builds for Cargill, Inc., Spencer Kellogg & Sons, Inc., and Quincy Soy Products Company. These recent projects feature the widely used Blaw-Knox Rotocel Extractor. Rotocels have been built with capacities ranging from 100 to 1800 tons per day."

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Blaw-Knox builds for Cargill, Inc., Spencer Kellogg & Sons, Inc., and Quincy Soy Products Company. These recent projects feature the widely used Blaw-Knox Rotocel Extractor. Rotocels have been built with capacities ranging from 100 to 1800 tons per day.



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plant builders for industry...

BLAW-KNOX

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Address: Pittsburgh, Pennsylvania.

133. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Sioux City, Iowa.
Date of Introduction: 1959 July.
Ingredients: Soybeans.
New Product–Documentation: *Soybean Digest.* 1959. "Cargill buys Sioux City, Iowa, processing firm." July. p. 35. Cargill, Inc. has purchased Sioux Industries, Inc., a soybean processing and feed manufacturing firm, headquartered in Sioux City, Iowa. On July 1 Cargill took control of the Sioux Soya plant, Sioux Feed Mills, and a large elevator at Sioux City. Note: As of 1947 Nutrena Mills operated a feed mill in Sioux City, Iowa (Wherry 1947. *The Golden Anniversary of Scientific Feeding*).

134. *Soybean Digest.* 1959. Cargill buys Sioux City, Iowa, processing firm. July. p. 35.
• ***Summary:*** Cargill, Inc. has purchased Sioux Industries, Inc., a soybean processing and feed manufacturing firm, headquartered in Sioux City, Iowa–according to Fred M. Seed, vice president of Cargill's vegetable oil division, Minneapolis.

On July 1 Cargill took control of the Sioux Soya plant, Sioux Feed Mills, and elevator "B" in with 300,000 bushels capacity in Sioux City, plus Western Feed Mills, Sioux Falls, South Dakota.

Cargill plans immediate construction of a storage elevator of 1.1 million bushels capacity adjacent to the soybean processing plant, and will add a dried (1,500 bushels per hour), hydraulic truck dump and scale, and conveying equipment between the elevator and the plant. All should be ready to accept this year's soybean crop.

Cargill also plans to enlarge the plant's processing capacity, which is now about 250 tons/day. "The plant serves parts of Iowa, South Dakota, Minnesota, and Nebraska. Supervisory responsibilities will be assigned to M.D. McVay, assistant vice president of the vegetable oil division, Minneapolis."

135. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Norfolk, Virginia.
Date of Introduction: 1959.
Ingredients: Soybeans.
New Product–Documentation: *J. of the American Oil Chemists' Soc.* 1985. "Soy pioneer bows out, others grow bigger." March. p. 474, 476. Cargill has a soybean crushing plant in Chesapeake, Virginia.

Lauser, Greg C. 1982. "History of Cargill's involvement in the soybean processing industry." Minneapolis, Minnesota. 5 p. Unpublished typescript. March 15. Courtesy Cargill, Inc. In 1959 Cargill expanded the scope of its soybean crushing activities to the Southeast by opening a facility in Norfolk, Virginia.

136. McVay, M.D. 1960. More soybean oil goes abroad as exporting techniques improve. *Chemurgic Digest.* Jan. p. 6-7.
• ***Summary:*** "Never in history has food from soybeans been the bargain it is today. A hungry foreign buyer can get soybean oil at U.S. ports today for much less than the per-calorie cost of competing foods. One thousand calories of ready-to-ship soybean oil costs 2.2 cents; the equivalent caloric value in the form of wheat flour costs 3.2 cents; rice, 3.8 cents.

"One reason, as notable in the exporting of soybean oil as in the various stages of production and processing of the soybeans themselves, is a constant striving by the industry to improve efficiency and reduce consumer costs.

"This attitude, shared by producers, processors, exporters and the government, underlies the industry's phenomenal pattern of growth in recent years. The rate of future growth will be determined in great part by continued application of the same hope and vigor.

"Big Five-Year Increase: Past progress is best illustrated by the increase in exports. Soybean oil shipments abroad have gone from 50-million pounds in 1954 to 950-million pounds in 1958-59. This dramatic rise was brought about primarily by four factors:

"1. Farmers' great efficiency made it possible to increase production of soybeans and sell them to users of meal and oil at lower prices-prices competitive with the best sources of protein and calories throughout the world.

"2. A growing protein demand by our livestock industry which provides a domestic market for 80 per cent of the beans. This efficient feeding permitted production of meat, milk and eggs at less cost and thereby increased consumption of these products.

"3. The government's Public Law 480 program made possible payment with local currencies, giving buying power to many nations whose people need oils but who could not otherwise buy them. As their standards of living increase and as their currencies become more acceptable in international trade, many of these countries become free-dollar buyers. Italy is an excellent example.

"4. The processing industry and exporters have found new ways to serve customers cheaper, in addition to considerably lowered costs and margins.

"Waterways Much Used: Processors pioneered in making significant use of the inland waterways for less costly transports of soy-bean oil from interior to export locations. Even before P.L. 480's impact on overseas sales, oil was being loaded in barges at various installations on the Mississippi and its tributaries and moving downstream for export at the Gulf. This inland waterways traffic, begun only experimentally, expanded with each passing year and will doubtless continue to expand.

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"Since well before this year's opening of the St. Lawrence Seaway, the Great Lakes also received a share of soybean oil traffic."

"Advantages in Bulk: Nor have efforts to improve efficiency ended at seaboard. Especially in the export of crude or degummed soybean oil, large-scale bulk handling by ocean vessels is more and more the rule. Such oil has, to be sure, moved historically in bulk to a degree, but ten or a dozen years ago drummed crude accounted for a very large part of total shipments and bulk crude was shipped only in comparatively small lots, with full tank cargoes virtually unheard of. Today, while some drummed crude still moves to countries where no unloading facilities exist for bulk, such shipments represent only a fraction of the total.

"Elimination of drumming has cut handling costs by 2 cents per pound. Large quantity shipments have reduced freight costs 1 cent per pound. With lowered water and rail charges. there is an aggregate saving of 3 to 3½ cents per pound. Put beside the present seaboard price of 8.5 cents per pound, these savings assume obvious importance."

In Spain, soybean oil is now preferred to olive oil.

A photo shows an aerial view of a new Cargill soybean crushing plant. The caption: "New Soybean Processing Plant, foreground, has been opened in South Norfolk, Virginia, by Cargill, Incorporated, in connection with its recently expanded 4.5-million-bushel export grain elevator, background. The new plant, designed to process 7-million bushels annually, increases by 50 per cent the crushing capacity for rapidly expanding area soybean production and supply of soybean oil for export and for east coast industrial use." Address: Asst. vice president, Vegetable Oil Div., Cargill, Inc.

137. *Soybean Digest.* 1960. Cargill opens new plant at Norfolk. Jan. p. 12.
• ***Summary:*** Cargill's soybean solvent extraction plant at South Norfolk, Virginia, exported its first shipment of soybean meal on 1 Dec. 1959–3,000 tons destined for Denmark. State and local officials attended an opening day plant tour. The solvent extractor is a percolator-like Blaw-Knox Rotocel.

"Benjamin S. Jaffray, Cargill's southeastern regional manager, said the soybean plant's location on main rail, truck and water routes will make it 'highly competitive' in distribution of soybean meal to feed manufacturers serving both commercial livestock raisers and the South's expanding poultry industry."

"Tom C. Veblen, in charge of soybean purchases and sales of oil and meal, said soybean production in the surrounding five states [Virginia, Maryland, Delaware, North Carolina, and South Carolina] had increased 400% in 10 years to an estimated 30.2 million bushels last year."

Elsewhere in the U.S., Cargill operates 9 vegetable oil plants processing soybeans, flax and copra, and some 45 terminal and 50 country grain elevators.

An aerial photo show's the new soybean processing plant, with water in the background. Soybean storage appears to be mostly in round steel tanks.

138. *Soybean Digest.* 1960. Cargill in new $20 million addition. Feb. p. 22.
• ***Summary:*** Baker Properties, Inc. and Cargill, Inc. announced plans for a $20 million "package" of new downtown construction in Minneapolis, Minnesota, "including a 16-floor 'Cargill building' of offices, a large motel, above-street plaza and restaurant, new Northwestern National Bank services, rooftop garden and swimming pool, shopping arcade and 1,000 car parking ramp."

"On completion, Cargill expects to move approximately 650 employees into the new building. Some 400 others are employed by Cargill in this area [at the chateau]. The firm, founded in 1865 and now one of the nation's largest handlers and processors of farm products, with sales exceeding a billion dollars annually, employs more than 5,000 persons in approximately 200 plants and offices nationally."

139. Wilson, Guy; Stanton, James M. 1960. Reactions of isocyanates with drying oils. *Official Digest, Federation of Paint and Varnish Production Clubs* 32(421):242-50. Feb. (Chem. Abst. 54:18983a). [9 ref]
• ***Summary:*** Urethane oils prepared from alkali refined soybean oils showed superior dry and film hardness properties compared to products prepared from pre-boiled oils. Address: Cargill, Inc.

140. American Soybean Association. 1960. Soybean Blue Book. Hudson, Iowa: American Soybean Assoc. 144 p. Advertisers' index. 22 cm.
• ***Summary:*** See next page. Contents: American Soybean Association. Japanese American Soybean Institute. National Soybean Processors Association. Soybean Council of America. Midsouth Soybean and Grain Shippers Association. Ontario Soya-Bean Growers' Marketing Board. U.S. Department of Agriculture: Agronomic Research (ARS [Agricultural Research Service]), Disease Research, Entomological Research, Utilization Research and Development (Northern Utilization Division [NRRL], Eastern, Southern, Western), Marketing Research.

Tables: (1) World soybean production. (2) Canadian soybean production. (3) Soybean production, utilization and value, 1936-1959 Canada. (4) Soybean crushings in Canada. (5) Soybean production–United States (with acreage and yield), 1924-1959. (6) U.S. Soybean production by states (1959). (7) U.S. soybean production, supply, and utilization (incl. exports, carryover), 1924-1959. (8) U.S. soybean production, acreage, and yield by state, 1924-1959. (9) U.S. soybeans: Inspected receipts. (10) U.S. soybeans–supply and distribution, 1952-1959 (1,000 bushels). (11)

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WORLD SOYBEAN PRODUCTION

Soybeans: Acreage, yield per acre, and production in specified countries and the world, averages 1935-39 and 1950-54, annual 1957-59 1/

Continent and country	Acreage 2/ Average '35-39	'50-54	'57	'58	'59 3/	Yield per acre Average '35-39	'50-54	'57	'58	'59 3/	Production Average '35-39	'50-54	'57	'58	'59 3/
	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	Bu.	Bu.	Bu.	Bu.	Bu.	1,000 Bu.	1,000 Bu.	1,000 Bu.	1,000 Bu.	1,000 Bu.
North America:															
Canada ----------4/	10	188	256	263	251	4/21.3	22.4	25.4	25.3	27.2	4/ 207	4,131	6,508	6,649	6,828
United States 5/--	3,042	14,747	20,826	23,900	22,428	18.1	20.3	23.2	24.3	24.0	56,167	298,422	483,715	579,713	537,895
South America:															
Argentina -------	---	2	4	2	---	---	13.7	13.9	14.9	---	---	30	51	22	---
Brazil ----------	--- 4/	157	241	262	289	---	4/22.1	18.5	17.4	19.1	---	4/ 3,471	4,464	4,556	5,512
Europe:															
Italy ----------	6/	2	1	1	---	4/12.1	22.1	27.3	28.1	---	4/ 1	34	22	21	---
Yugoslavia ------	5	12	15	20	25	14.9	7.3	19.7	12.6	20.8	71	90	296	254	514
Other Europe (excl. U.S.S.R.) ----	95	75	55	40	40	---	---	---	---	---	1,065	480	410	215	260
U.S.S.R.															
(Europe and Asia)-7/	607	813	---	---	---	---	---	---	---	---	7/ 5,805	---	---	---	---
Africa:															
Belgian Congo and Ruanda Urundi --	---	9	15	15	15	---	7.4	9.9	9.9	9.9	---	69	147	147	147
Nigeria 8/ ------	---	---	---	---	---	---	---	---	---	---	---	250	538	123	---
Union of South Africa -----	--- 4/	12	---	---	---	---	6.6	---	---	---	---	76	67	---	---
Asia:															
Turkey (Europe and Asia)-7/	1	8	15	15	---	7/29.0	12.9	8.9	8.6	---	7/ 37	104	136	129	110
China, Mainland--	21,403	28,219	31,480	24,200	25,000	16.7	11.7	10.6	14.9	14.0	358,960	330,000	335,000	360,000	350,000
Indonesia -------9/	889	1,066	1,297	1,495	1,645	9/10.0	10.2	9.6	10.4	10.3	9/ 9,731	10,829	12,457	15,490	17,000
Japan ----------	797	1,040	899	856	855	15.6	15.7	18.8	16.8	18.4	12,338	16,521	16,855	14,374	15,708
Korea, South ----4/10/	1,921	625	685	664	---	10.0	7.8	8.2	8.5	---	10/17,654	4,835	5,610	5,635	---
Taiwan ----------	17	62	101	108	---	9.0	9.2	12.0	14.2	---	147	576	1,214	1,532	---
Thailand --------4/	15	54	63	50	---	4/15.4	13.0	16.0	15.9	---	4/ 232	700	1,009	797	---
Total excluding "Other Europe", U.S.S.R., China-Mainland and North Korea 11/----	5,670	18,070	24,620	27,850	26,555	---	---	---	---	---	87,180	340,790	534,635	630,735	594,120
Total world 11/ ----	29,000	47,880	57,645	53,580	53,085	---	---	---	---	---	463,718	681,070	879,710	1,000,615	954,045

1/ Years shown refer to years of harvest. Southern Hemisphere crops which are harvested in the early part of the year are combined with those of the Northern Hemisphere harvested the latter part of the same year. 2/ Figures refer to harvested areas as far as possible. 3/ Preliminary. 4/ Less than 5 years. 5/ Acreage harvested for beans. 6/ Less than 500 acres. 7/ One year only. 8/ Purchases for export. Local consumption is small. 9/ Java and Madura only. 10/ Includes North Korea. 11/ Includes estimates for the above countries for which data are not available and for minor producing countries. Foreign Agricultural Service. Prepared or estimated on the basis of official statistics of foreign governments, other foreign source material, reports of U. S. Agricultural Attaches and other U. S. representatives abroad, and related information. Prewar estimates for countries having changed boundaries have been adjusted to conform to present boundaries, except as noted.

U.S. Soybean oil meal and cake production, supply and utilization, 1924-1959 (1,000 tons). (12) Soybean oil, meal and cake production and stocks by states, 1955-1958. (13) Oilseed cake a meals, supply and distribution, Oct. 1950-59. Incl. soybean, cottonseed, linseed, peanut, copra, total. (14) Production of protein concentrates (cake and meal), 1937-41 (avg.) to 1951-59. Incl. soybean, linseed, cottonseed, copra, gluten feed and meal, tankage and meat scraps, fish cake and meal, dried milk products (dried and concentrated skim milk, buttermilk, and whey used for animal feed), other milk products (fed on farms), total. Note: In 1953-54,395,000 tons of dried milk products were fed to animals. (15) U.S. soy flour production. (16) Production and exports of soy flour and grits (incl. full fat, low fat, and defatted products, exported commercially or to military). (17) Production of mellorine [frozen dessert where vegetable oil replaces butterfat], 1953-59, by month. (18) U.S. fats and oils production, 1937-41 (avg.) to 1959. Incl. Butter, lard, edible beef fats, total edible animal fats, corn oil, cottonseed, edible olive oil, peanut oil, soybean oil, total edible vegetable oils, inedible oils. (19) Soybean oil utilization, 1931-1959 (million lb). Incl. Foods: Margarine, shortening, other, total, Non-food products: Soap, paint & varnish, other drying oil products, miscellaneous, loss, total, total domestic disappearance. (20) Same as No. 19 but in percentages.

(21) Utilization of soybean products, 1955-56 to 1958-59. Incl. meal and oil: Livestock feed, industrial, fertilizer, export; from 1955 to 1959, use of soybean oil meal as a fertilizer was negligible, whereas 2.5 to 3.9% was exported. (22) Prices of U.S. soybeans, by month and season average, 1923-1959. (23) Same as No. 22 but only for No. 1 yellow: Chicago, Illinois country shipping points, Minneapolis. (24) Same as No. 21 but soybeans for crushing, No. 2 yellow. (25) Value of U.S. soybean crop, 1925-59 (thousand dollars) in these states: Total USA, Illinois, Iowa, Indiana, Ohio, Missouri, Minnesota. (26) Soybean price support operations, 1932-33 to 1959-60. Started in 1941-42 and has continued to the present, with a peak of $2.56 per bushel in 1953-55. (27) Price spread, soybeans and end products, 1945-1958. Spread between price received by farmers and value of products. (28) Prices of U.S. soybean oil meal (44% protein), 1929-1959 by month. (29) Prices of U.S. crude soybean oil, by month, 1929-30 to 1959-60. (30) Imports, exports, soybeans, oil and meal.

(31) Soybeans: Inspections for export, 1957-59, with country of destination and port of departure. (32) U.S. trade in soybeans, fats and oils. (33) Oil and fat exports under P.L. 480. Total, cottonseed oil, soybean oil, Oct. 1954 to Sept. 1959. Incl. country of destination, the top four being Turkey, Pakistan, Israel, and Egypt. (34) Imports, exports cake and meal, 1929-1958, incl. cottonseed, soybean, linseed, peanut, copra. Exports incl. country of destination. (33) Soybeans: Crushings and yields of oil and meal. (35) Bar chart: Major markets for U.S. soybeans since 1953: West Germany, Netherlands, Other Europe, Japan, Canada, Other. (36) Composition of soybean seeds, by variety, incl.

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Maturity Group No., % protein, % oil, weight of 100 seeds in grams. (37) Amino acids of soy protein. (38) Composition of Lecithin. (39) Composition of soybean oil, by variety. Incl. linolenic acid, linoleic acid, oleic acid, saturated acids.

Official standards for soybeans, Revised effective Sept. 1, 1955. Soy flour standards, for full-fat, low-fat, and defatted. Densities of various soybean products. Map of the USA showing the best adapted soybean varieties for each major soybean producing state. Directories: Processors of soybeans, by state, with address and names of officers (p. 56-74). Canadian soybean processors (p. 74). Manufacturers of 50% protein soybean meal (by state, p. 76). Foreign soybean processors, by country (p. 78-81). Refiners of soybean oil, by state (p. 82-84). Manufacturers and handlers of soy foods (p. 86-93): Beverages, breakfast foods, canners of green vegetable soybeans, canners of mature soybeans, cookies, crackers, toasts and wafers, frozen desserts (companies that make vegetable oils used in frozen desserts), health food store & supply houses, lecithin, macaroni, spaghetti & noodles, margarine, meat substitutes, proteins (Griffith Labs, Gunther, Worthington Foods), pudding powders (Brockville, Ontario, Canada), Salad and cooking oils, shortening, sausage binders, seasonings, soups, soybean oil, soybeans for cooking and sprouting, soy butter (Town Food Co., Riverside, California, makes "Town: soy lecithin spread"; Shedd-Bartush Foods, Detroit, Michigan, makes "Willow Run" soy spread), soy cheese [tofu], soy flour, grits and flakes, soy flour mixes, soy milk, soy sauce, sprouts, vitamins, whipping agents.

Manufacturers of industrial products employing soybeans (p. 94-95): Caulking compounds & floor tile, coated papers & leather dressing, fire-fighting foam, glues, plywood & adhesives, insecticides, laminating, lecithin, oilcloth and coated fabrics, paints and varnishes (13 companies), paper sizings, wallpaper and wallboard coatings, resins, soaps, soybean fatty acids (8 companies), soybean oil. Services for the industry (p. 96-109): Analysts, appraisals, brokers, commission merchants & jobbers, consultants, engineering services, export elevators, exporters & importers, export warehousing and handling, farm management, field warehousing, futures market, market analysis, mill construction contractors, milling service, miscellaneous services, oil transports, transportation.

Equipment and supplies for the soybean industry (p. 110-32): Aspirators, bagging equipment, belting, chains, conveyors, elevators, defoliants, drying and aeration equipment (farm driers, grain driers, meal driers), dust control systems & dust collectors, elevator buckets, fans, farm equipment, fertilizers, fumigants, fungicides, germinators, grain and seed cleaning and separation equipment, grain grading equipment & moisture testers, grain handling equipment, granulators, grinding & mixing equipment, herbicides, insecticides & pesticides, inoculants, laboratory equipment, man-lifts, material level indicators, materials handling equipment, miscellaneous equipment, packaging materials, pelleting machines, power transmission equipment, pumps, respirators, seed protectants, sifters, soil testing, soybean storage (elevator & processing units, farm units), spraying and irrigating equipment, temperature systems, transportation equipment, truck lifts, unloaders, waterproofing, weighing and packaging equipment.

Soybean processing [crushing] and oil refining equipment and supplies (p. 134-42): Bleaching and filtering equipment, catalysts, complete plants [for crushing], continuous counter-current solvent extractors, continuous screw presses, degumming, deodorization, fractionation, hydraulic pressing equipment, hydrogenation, margarine, miscellaneous equipment, neutralization, shortening, solvent recovery, solvents, soybean seed [suppliers and private breeders], vegetable soybean seed. Advertisers' index. Incl. Allied Mills, V.D. Anderson, ADM, Arkansas Grain Corp., Big 4 Cooperative Processing Assn., Blaw-Knox Co., Buhler Mill Engineering Co., Cargill Inc., Central Soya Co., Crown Iron Works Co., Dannen Mills Inc., Delphos Grain and Soya Products Co., Albert Dickinson Co., Louis Dreyfus Corp., Esso Standard Oil, Farmers Cooperative Assn., Farmers' Cooperative Co., Felco Soybean Oil Meal Dealers, French Oil Mill Machinery Co., Funk Bros. Seed Co., Galesburg Soy Products Co., General Mills Inc., Jacob Hartz Seed Co., Inc., Honeymead Products Co., Huntley Mfg. Co., Illinois Soy Products Co., Iowa Milling Co., Iowa Soya Co., Jensen Mills, Kansas Soya Products Co, Inc., Spencer Kellogg & Sons, Inc., Lauhoff Soya Co., Albert Lea Engineering Co., North Iowa Cooperative Processing Assn., Penola Oil Co., Phillips Petroleum Co., Pillsbury Co., Port of New Orleans, Quincy Soybean Products Co., Rice Grain Corp., Seedburo Equipment Co. (measures oil content of soybeans in 10 minutes), Skelly Oil Co., A.E. Staley Mfg. Co., T.W. Wood & Sons (Seedsmen since 1879; Richmond, Virginia). Address: Hudson, Iowa.

141. Cargill, Inc. 1960. And now there are eight (Ad). *Soybean Blue Book.* p. 143.

• ***Summary:*** In the top half of this full-page black-and-white ad is a photo of two Cargill executives looking at a map unfolded on a desk. "With its eighth soybean extraction plant in operation, Cargill has again expanded its ability to efficiently serve the American soybean grower ad the world-wide users of soybean products."

In 1959, Cargill opened its first big new plant at Norfolk, Virginia. Its eighth and latest extraction plant is at Sioux City, Iowa.

Plant locations: 1. Port Cargill [Savage], Minnesota. 2. Cedar Rapids, Iowa. 3. Washington, Iowa. 4. Memphis, Tennessee. 5. Chicago, Illinois. 6. Fort Dodge, Iowa. 7. Sioux City, Iowa. 8. Norfolk, Virginia.

Note: Cargill no longer has plants in Spencer, Iowa, or Philadelphia, Pennsylvania.

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142. Baldwin, A.R. 1960. Cargill Inc., processor and handler of agricultural products. *J. of the American Oil Chemists' Society* 37(8):4, 8. Aug.
• ***Summary:*** Cargill Incorporated is involved in a very wide range of U.S. consumer products that originate on the farm. The firm has a long-established reputation as a leading grain trader.

Since World War II Cargill has been the largest U.S. vegetable oil producer, today crushing more than 50 million bushels of soybeans and flaxseed and more than 100,000 tons of copra, yielding coconut oil.

Cargill bought its first soybean plant, which used expellers, in Springfield, Illinois [in Oct. 1943]. In the years that followed, Cargill expanded to processing flax, copra, and alkyd resin.

In 1959 Cargill added soybean processing plants in Norfolk, Virginia, and Sioux City, Iowa.

In 1954 Cargill established a new research department at Wayzata, Minnesota. Oil research is conducted in three main areas: (1) Organic research on new chemicals from vegetable oils; (2) paint and varnish vehicle research to develop new oil-modified resins, e.g., special alkyds, polyurethanes, copolymer oils and water-thinnable resin emulsions and solutions; (3) Developmental work on commercial processing and production. The many other units in the research department include a series of four plant breeding stations in Minnesota, Illinois, and Iowa.

Cargill's vegetable oil operations, impressive as they are, are only one segment of the company's over-all operations. The company's operating divisions include grain, feed, transportation, research and product development, and vegetable oils. Cargill has 200 plants and offices and 5,000 employees, whose activities are myriad; applying a large electronic computer in Minneapolis to developing the best animal feed formula for a plant in North Carolina or Texas; buying and processing Tennessee soybeans to make cooking oil in the USA or in Pakistan or in Spain; producing meal for fattening pigs in Arkansas.

"The basic ingredients of the Cargill system are integration and efficiency... Linking all operations is a complex, leased-wire system capable of handling 1,000,000 words a day. Core of the network and headquarters for the firm are in a former private mansion on a 250-acre, wooded lakeside setting outside Minneapolis." The president is Cargill MacMillan. Address: Director of Research, Cargill.

143. McVay, M.D. 1960. The need for soybean research. *Chemurgic Digest.* Sept. p. 4-6.
• ***Summary:*** "You know the soybean: its tremendous increase in production in the last 25 years; the huge growth in demand for its meal and oil. The soybean has been called the miracle crop, and rightly so. It has changed midwestern agriculture more than any other crop. Because of soybeans all Americans eat better for less cost."

"Up 12,000 per cent: Thus, in just 34 years, acreage increased 50 times, yield per acre was boosted 250 per cent, and production skyrocketed 12,000 per cent.

"Marketing obviously has kept pace. Processing and export demand have been equal to the farmer's best. Or, put in proper order, I should say soybeans were grown because of processing and export demand.

"During the 1958-59 crop year we processed more than 400-million bushels of soybeans. This provided 9½-million tons of meal of which 9-million tons were used domestically–mostly for animal feeds–and 525,000 tons were exported. Those 400-million bushels also produced 4.3-billion pounds of oil–3.4-billion pounds for domestic consumption, 90 per cent for edible uses such as margarine, shortening and salad dressings; 10 per cent for industrial uses such as paint, varnish, alkyd resins and plastics. 900-million pounds were exported; the largest foreign customer was Spain who bought 450-million pounds." Address: Cargill, Inc.

144. *Soybean Digest.* 1961. John MacMillan dies; was Cargill chairman. Jan. p. 15.
• ***Summary:*** John H. MacMillan, Jr., chairman of the board and chief operating officer of Cargill, Inc. died on 23 Dec. 1960 at Durham, North Carolina, where he had been flown for treatment.

Born in 1895 in Fort Worth, Texas, he had been a resident of the Minneapolis area since 1904. He began his business career in 1919 as a grain buyer and trader for the Cargill Elevator Co. at Duluth, Minnesota, and in 1926 he was elected a director of the firm.

In 1932, when Cargill Elevator Co. became Cargill, Inc., Mr. MacMillan became vice president and general manager, succeeding his father, John H. MacMillan, Sr. He was named board chairman in 1937.

"Mr. MacMillan was well known for designing large elevators for efficient storage and handling of grain, and he was responsible for two developments–accurate temperature measurements inside huge storage bins and development of equipment for rapid loading and unloading of the bins–that were revolutionary in the grain industry. He also pioneered in the development of the integrated barge-and-towboat unit now widely used in the inland waterways.

"During his 20 years as president, Cargill more than tripled in size. Its annual sales volume is now well over $1 billion, making it the nation's largest grain handling firm. During his tenure, the company also became significant in production of vegetable oils.

"A brother, Cargill MacMillan, was president of Cargill until July of last year, when he was granted a leave of absence to recover from illness." A small portrait photo shows John MacMillan.

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145. *Soybean Digest.* 1961. Cargill buys Soy Rich Products Co. Aug. p. 8.
• ***Summary:*** "Purchase and expansion of Soy Rich Products Co., Wichita, Kansas, soybean processor and livestock feed firm, has been announced by Cargill, Inc. Properties involved in the transfer, effective Sept. 1, include a solvent extraction plant in Wichita and a feed mill in Pawhuska, Oklahoma. Cargill will add immediately a 1 million bushel steel storage tank and will install new equipment to increase the plant's annual processing capacity to 6 million bushels from the present 1.5 million bushels. Also under consideration are plans to add a second 1-million-bushel storage tank. Present storage capacity is 1.1 million bushels."

146. **Product Name:** Soybean Oil, and Soybean Oil Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Wichita, Kansas.
Date of Introduction: 1961 September.
Ingredients: Soybeans.
How Stored: Shelf stable.
New Product–Documentation: *Soybean Digest.* 1961. "Cargill buys Soy Rich Products Co." Aug. p. 8. "Purchase and expansion of Soy Rich Products Co., Wichita, Kansas, soybean processor and livestock feed firm, has been announced by Cargill, Inc. Properties involved in the transfer, effective Sept. 1, include a solvent extraction plant in Wichita and a feed mill in Pawhuska, Oklahoma."

147. *Soybean Digest.* 1961. Construction has begun at Sioux City, Iowa, on a 1-million-bushel tank... Sept. p. 27.
• ***Summary:*** "... that will virtually double storage capacity at Cargill Inc's soybean processing plant."

148. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Des Moines, Iowa.
Date of Introduction: 1961.
Ingredients: Soybeans.
New Product–Documentation: *J. of the American Oil Chemists' Soc.* 1985. "Soy pioneer bows out, others grow bigger." March. p. 474, 476. Cargill has a soybean crushing plant in Des Moines, Iowa.

Lauser, Greg C. 1982. "History of Cargill's involvement in the soybean processing industry." Minneapolis, Minnesota. 5 p. Unpublished typescript. March 15. Courtesy Cargill, Inc. In 1961 Cargill acquired the Des Moines, Iowa soybean crushing plant from Spencer-Kellogg Co. In 1967, Cargill opened its first domestic salad oil refinery adjacent to this crushing plant.

149. USDA Northern Regional Research Laboratory. ed. 1962. Proceedings of Conference on Soybean Products for Protein in Human Foods. Peoria, Illinois. iii + 242 p. Held 13-15 Sept. 1961 at Northern Regional Research Laboratory, Peoria, Illinois. No index. 26 cm.
• ***Summary:*** See next page. The earliest conference on this subject in the USA. A very important document, with many excellent articles by experts in their fields worldwide.

Contents: Introductory remarks. Session I: Nutritional deficiency problems in developing areas of the world. II: World marketing of soybeans and soybean products. III: Research and development on soybean foods. IV: Nutritional and biological studies. V: Processing and feeding value of fluid and dry soy milks. VI: Problems involved in increasing world-wide use of soybean products as foods–panel discussion. VII: Committee on quality and processing guide for edible soy flour and grits. VIII: Summary of conference. List of attendance. Most of the 106 attendees are PhDs or leaders in agriculture, business, government, or scientific research. The complete list follows:

Altschul, A. M. Southern Utilization Research and Development Division, ARS, USDA, New Orleans, Louisiana

Anderson, D. W., Jr. The Borden Company, 350 Madison Avenue, New York 17, New York

Andrews, J. S. General Mills, Inc., 9200 Wayzata Boulevard, Minneapolis 26, Minnesota

Anson, M. L. Consultant, 100 Eaton Square, London, S.W. 1, England

Bailey, E. M. A. E. Staley Manufacturing Company, Decatur, Illinois

Barnes, R. H. Cornell University, Ithaca, New York

Bean, L. H. Food for Peace, The White House, Washington, D. C.

Biddle, C. B. Biddle Farms, Remington, Indiana

Bitting, H. W. Agricultural Research Service, USDA, Washington 25, D. C.

Booth, A. N. Western Utilization Research and Development Division, ARS, USDA, Albany, California

Bowen, H. B. Spencer Kellogg and Sons, Inc., Decatur, Illinois

Brubaker, E. J. The Borden Company, 350 Madison Avenue, New York 17, New York

Buelens, Emil Central Soya Company, Inc., 1825 North Laramie, Chicago, Illinois

Cartter, J. L. Regional Soybean Laboratory, USDA, Urbana, Illinois

Circle, S. J. Central Soya Company, Inc., 1825 North Laramie, Chicago 39, Illinois

Clayton, R. A. General Mills, Inc., 9200 Wayzata Boulevard, Minneapolis 26, Minnesota

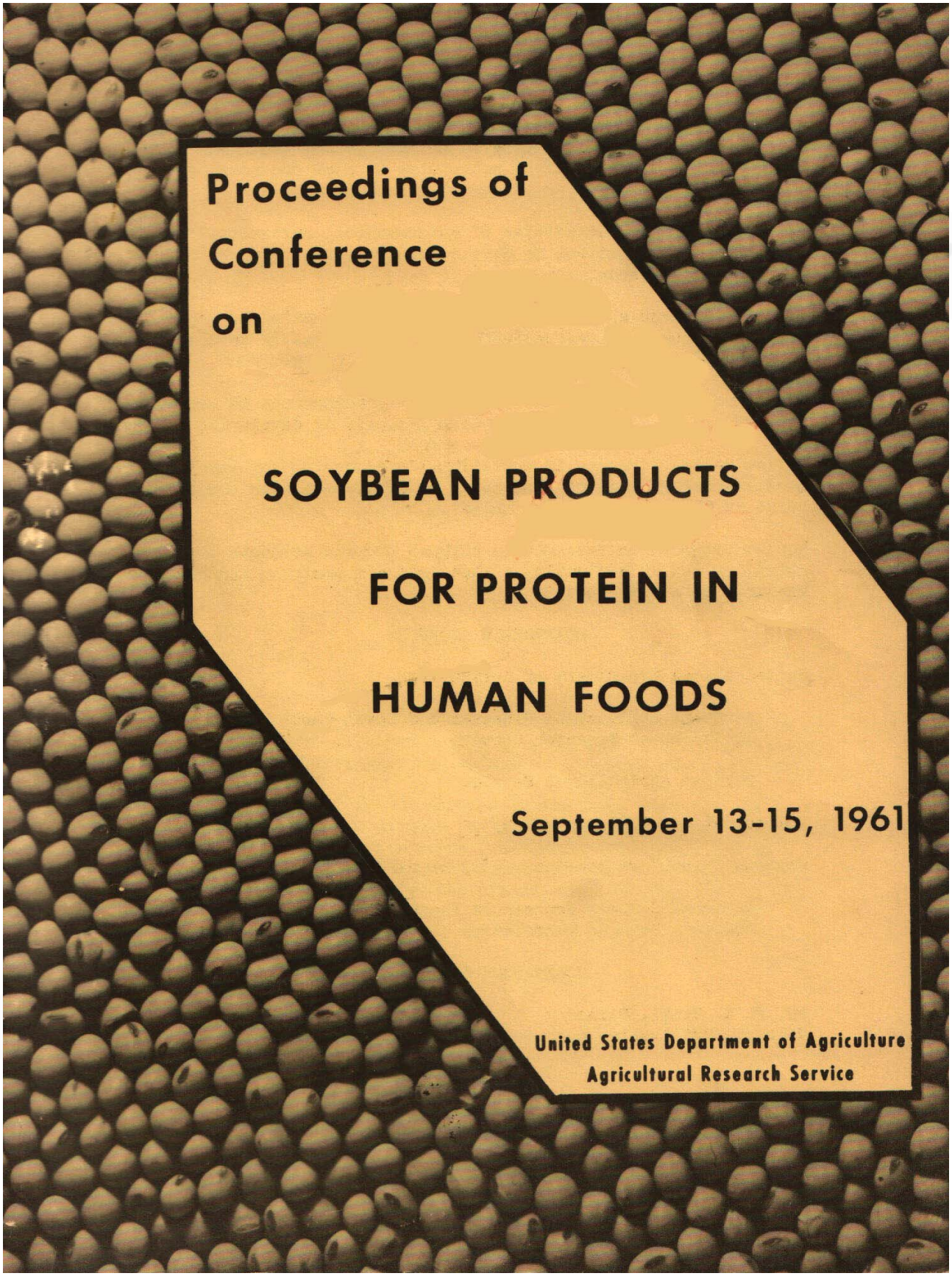
Cowan, J. C. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Cox, W. B. Honeymead Products Co., Box 50, Mankato, Minnesota

Cravens, W. W. Central Soya Company, Inc., 1825 North Laramie, Chicago 39, Illinois

Darby, W. J. Vanderbilt University, Nashville 5,

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Tennessee

Dimler, R. J. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Diser, G. M. Archer-Daniels-Midland Company, 3100 38th Avenue South, Minneapolis 40, Minnesota

Eichenberger, W. R. A. E. Staley Manufacturing Company, Decatur, Illinois

Eldridge, A. C. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Eversole, Russell Cargill, Inc., 200 Grain Exchange, Minneapolis, Minnesota

Fischer, R. W. Soybean Council of America, Inc., Waterloo, Iowa

Fomon, S. J. University of Iowa Medical School, Iowa City, Iowa

Frampton, V. L. Southern Utilization Research and Development Division, ARS, USDA, New Orleans, Louisiana

Griffin, E. L., Jr. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Groves, M. L. Eastern Utilization Research and Development Division, ARS, USDA, Philadelphia, Pennsylvania

Gyorgy, Paul Philadelphia General Hospital, Pediatrics Department, Philadelphia 4, Pennsylvania

Hackler, L. R. New York State AES, Cornell University, Geneva, New York

Hafner, F. H. General Mills, Inc., 9200 Wayzata Boulevard, Minneapolis 26, Minnesota

Hand, D. B. New York State AES, Cornell University, Geneva, New York

Hayashi, Shizuka Japanese American Soybean Institute, Nikkatsu International Building, Room 410, No. 1, 1-Chomo Yurakucho, Chiyoda-Ku, Tokyo, Japan

Hayward, J. W. Soybean Council of America, 304 Baker Building, Minneapolis 4, Minnesota

Heidinger, H. C. Archer-Daniels-Midland Co., Minneapolis 40, Minnesota

Hesseltine, C. W. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Hilbert, G. E. Foreign Research and Technical Programs, ARS, USDA, Washington 25, D.C.

Hildebrand, F. C. General Mills, Inc., 9200 Wayzata Boulevard, Minneapolis 26, Minnesota

Horan, F. E. Archer-Daniels-Midland Company, Minneapolis 40, Minnesota

Hougen, V. H. Foreign Marketing Branch, FAS [Foreign Agricultural Service], USDA, Washington 25, D. C.

Houghtlin, R. G. National Soybean Processors Association, 3818 Board of Trade Building, Chicago 4, Illinois

Hoover, S. R. Utilization Research and Development, ARS, USDA, Washington 25, D. C.

Hubbard, J. E. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Huge, W. E. Central Soya Company, Inc., 300 Fort Wayne Bank Building, Fort Wayne 2, Indiana

Jackson, R. W. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Johnson, D. W. Central Soya Company, Inc., 1825 North Laramie, Chicago 39, Illinois

Judd, R. W. National Soybean Crop Improvement Council, 3818 Board of Trade Building, Chicago 4, Illinois

Kemmerer, K. S. Mead Johnson Research Center, Evansville 21, Indiana

Kirk, Dorsey Oilseeds and Peanut RMA Committee, Oblong, Illinois

Kirk, L. D. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Krober, O. A. Regional Soybean Laboratory, ARS, USDA, Urbana, Illinois

Lemancik, J. F. Central Soya Company, Inc., 1825 North Laramie, Chicago 39, Illinois

Lighter, Willard Central Soya Company, Inc., 1825 North Laramie, Chicago 39, Illinois

Maclay, W. D. Utilization Research and Development, ARS, USDA, Washington 25, D. C.

Maddy, K. H. Monsanto Chemical Co., St. Louis, Missouri

Matchett, J. R. Utilization Research and Development, ARS, USDA, Washington 25, D. C.

Mattil, K. F. Swift and Company, Union Stock Yards, Chicago 9, Illinois

McGinnis, James Washington State University, Pullman, Washington

McKinney, L. L. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

McVay, M. D. Cargill, Inc., 200 Grain Exchange, Minneapolis 15, Minnesota

Melina, F. R. Catholic Relief Services, 451 Madison Avenue, New York 22, New York

Melnychyn, Paul Fruit and Vegetable Laboratory, ARS, USDA, Pasadena, California

Meyer, E. W. Central Soya Company, Inc., 1825 North Laramie, Chicago 39, Illinois

Miller, D. L. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Miller, H. W. International Nutrition Research Foundation, 11503 Pierce Boulevard, Arlington, California

Milner, Max United Nations Children's Fund, United Nations, New York

Mustakas, G. C. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Ogilvy, W. S. Mead Johnson Research Center, Evansville 21, Indiana

Oldham, Helen G. Human Nutrition Research Division, ARS, USDA, Washington 25, D. C.

Pellett, Kent The Soybean Digest, Hudson, Iowa

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Pence, J. W. Western Utilization Research and Development Division, ARS, USDA, Albany, California

Post, N. J. Food for Peace, 224 Executive Office Building, Washington 25, D. C.

Rackis, J. J. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Rhodes, E. E. A. E. Staley Manufacturing Company, Decatur, Illinois

Rist, C. E. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Roach, H. L. Soybean Council of America, Inc., 408 Marsh Place Building, Waterloo, Iowa

Rolvaag, K. F. Lieutenant Governor, State of Minnesota, St. Paul, Minnesota

Sabin, D. R. Food Conservation Division, United Nations Children's Fund, United Nations, New York

Salisbury, G. W. University of Illinois, Urbana, Illinois

Sarett, H. P. Mead Johnson Research Center, Evansville 21, Indiana

Schaefer, W. C. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois.

Scheiter, E. K. A.E. Staley Manufacturing Company, Decatur, Illinois

Sebrell, W. H., Jr. Columbia University, Institute of Nutrition Sciences, 562 West 168th Street, New York 32, New York

Sellner, J. J. Archer-Daniels-Midland Company, 700 Investors Building, Minneapolis, Minnesota

Senti, F. R. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Sherman, Norman State of Minnesota, St. Paul, Minnesota

Sikes, W. W. Fats and Oils Division, FAS, USDA, Washington 25, D. C.

Smith, A. K. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Steinkraus, K. H. New York State AES, Cornell University, Geneva, New York

Stewart, George F. University of California, College of Agriculture, Davis, California

Strayer, G. M. American Soybean Association, Hudson, Iowa

Tawa, Andre

Soybean Council of America, U.A.R., 8 Dr Abdel Hamid Said Street, Cairo, Egypt

Teeter, H. M. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Tjossem, W. E. Ralston Purina Company, St. Louis 2, Missouri

Trotter, W. K. Northern Utilization Research and Development Division, ERS [USDA's Economic Research Service], USDA, Peoria, Illinois

Van Buren, J. P. New York State AES, Cornell University, Geneva, New York

van Veen, A. G. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy

Walker, Alan D. Spillers Limited, Station Road, Cambridge, England

Wall, J. S. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Wilcke, H. L. Ralston Purina Company, St. Louis 2, Missouri

Witham, W. C. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Wolf, W. J. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Wolff, I. A. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Woods, L.C. A.E. Staley Manufacturing Company, Decatur, Illinois. Address: Northern Regional Research Lab., Peoria, Illinois.

150. *Soybean Digest.* 1962. Minneapolis a processing center. July. p. 8.

• ***Summary:*** Three of America's leading soybean processing firms are headquartered in Minneapolis, Minnesota: Archer-Daniels-Midland Co., General Mills, and Cargill, Inc.

"ADM Operations: Archer Daniels Midland Co., one of the largest soybean processors, has its general offices at 733 Marquette Ave., Minneapolis.

"The company presently operates three processing plants–two at Decatur, Illinois, including the former Spencer Kellogg plant there which ADM leased last November, and the third at Mankato, Minnesota. A fourth processing plant is under construction at Fredonia, Kansas, in the heart of a fast-growing soybean producing area.

"ADM's first plant was opened in 1929 and 5 years later the company introduced the continuous solvent extraction process in this country. The company produces a full line of industrial and edible soy products, including oils, flours, meals, lecithin and isolated soy proteins.

"General Mills: General Mills' soybean processing activity is now concentrated chiefly at Belmond, Iowa, where a very efficient solvent extraction plant produces basic oils and meals as well as refined soybean oils, soybean lecithin and upgraded high protein food specialties. Management and sales direction headquarters for oilseeds operations are in the specialty products division located at the new general office building of General Mills, Inc., 9200 Wayzata Boulevard, Minneapolis.

"For 34 years, General Mills has grown and prospered through increasing ability to serve well the people who make its business possible–its customers. Growing popularity of protein foods has increased the demand for soy proteins. New uses are now being developed for Toasted Soy Protein and Multi-Purpose Food which together provide one of General Mills most direct contributions to a better life for

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all mankind. Today, Multi-Purpose Food is distributed on 'hunger fronts' throughout the world and both of these General Mills products are used as components of survival kits for the nation's Civil Defense program. MPF consists of golden, protein-rich soy grits combined in a scientific blend with essential vitamins and minerals.

"Cargill in Minneapolis: Minneapolis is headquarters for Cargill, Inc.'s vegetable oil processing, merchandising and research operations.

"Buying and selling of raw beans, oil and oil meal through the vegetable oil division's 17 offices and 10 processing plants is directed from Cargill's executive offices near suburban Wayzata and from offices in downtown Minneapolis.

"Also near Wayzata is the firm's research center which houses analytical, biochemistry, organic chemistry, vehicle research and oil technical services laboratories.

"At nearby Savage, Minnesota, on the Minnesota river, is Port Cargill, a multi-transport terminal through which is handled soybeans and oil, grain and various commodities.

"Cargill's solvent extraction soybean plant at Port Cargill has an annual crushing capacity of 5 million bushels and storage for 1.2-million bushels."

Small portrait photos show: (1) James W. Stowell, manager of ADM's vegetable oil sales. (2) M.D. "Pete" McVay, vice president in charge of Cargill's vegetable oil division.

151. Baldwin, A.R. 1962. What's ahead for soybeans? The greatest single potential for soybeans is the growing concern about fats and health. *Soybean Digest.* Sept. p. 70-72.
• ***Summary:*** "To my mind the area in which lies the greatest single potential for soybean consumption is the rapidly growing concern about effects of fats and oils in the human diet. Never has there been so much stir, so much excitement, so much discussion about fats and oils as we have today regarding the benefits of polyunsaturated fatty acids. Pick up almost any periodical, be it technical or for the layman, and the issue is examined, turned this way and that, commented on and reviewed.

"The trend is as visible among the scientists of Western Europe as it is in the United States, as I learned on a recent 6-week visit to the Continent, and the interest in both this country and those overseas is paralleled by research efforts to establish once and for all the connection between blood cholesterol, polyunsaturated fatty acids and heart disease.

"The relationship, to be sure, has not been proved. If you submit the evidence on hand to an empirical formula, your answer inevitably will be negative.

"Among the most vocal in pointing this out has been the U.S. Food and Drug Administration, whose job among others is to check the validity of such claims. For the past 30 months they have said, 'The role of cholesterol in heart and artery diseases has not been established. A casual relationship between blood cholesterol levels and these diseases has not been proved. The advisability of making extensive changes in the nature of dietary fat intake of the people of this country has not been demonstrated.' One can scarcely be more definite than that.

"But although there is not yet proof, there is a growing accumulation of circumstantial evidence, assembled by responsible persons, to indicate more and more strongly that such a relationship may exist.

"The American Heart Association recommends restricted saturated fat intake under medical supervision for some persons.

"During my European tour I visited with a number of the more eminent fats and oils scientists, and their conclusions–arrived at separately and individually–all pointed in the same direction. For example:

"Professor Dam in Copenhagen and his associate, Professor Soltoft, report tests on animals (other than humans) have established a correlation between fatty acids and cholesterol levels. They also indicate a correlation between deposits in the circulatory system and cholesterol levels in the blood of rats.

"Similar work by Dr. Thomasson at the Unilever Laboratories in Vlaardingen showed virtually the same results. Professor Sinclair at Oxford was quite positive in declaring the relationship to exist. Professor Frazer at Cambridge agrees with the work on animals, but is more conservative, about human diets. Professor Hilditch at Liverpool, whom you all know, after reviewing much of the work done, feels that there is a correlation between unsaturated fats in the diet and blood cholesterol, but agrees that it still has not necessarily been proved that this is related to damage of the circulatory system.

"Much Work Under Way: Additional work is under way in this country in many laboratories. Under sponsorship of the National Heart Institute a program is being planned to provide complete diets for several groups of approximately 75 families in each of five locations. Special diets will be prepared for the participants, and the effects will be studied over several years. If this pilot feeding test of about 1,000 families is successful the hope is to expand it to about 100,000 families. This is strong evidence that responsible biomedical researchers in this country are concerned about the role of unsaturated fats in human diets.

"In the midst of all this preparation, the polyunsaturate band wagon–as a leading food trade publication described it recently–is rolling.

"*The Wall Street Journal* reported on March 27: 'Heart attack fears draw corn oil into more food products. Many people believe the oil, by lowering blood cholesterol levels, reduces chances of heart trouble. Joining margarine and salad oil makers in using the oil are processors of tinned tuna, salad dressings, canned meats, potato chips, sauces, bakery goods and frozen desserts.'

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"In the midst of this popular clamor, however, the silence is awesome if you wait to hear someone mention soybean oil. I find it understandable that soybean oil's competitors maintain a discreet silence when the product is mentioned, but I fail entirely to comprehend why we ourselves have not done a better job of selling and promoting our assets and virtues. I can assure you we have those qualities in great amounts."

The writer goes on to explain that soybean oil contains 62% polyunsaturated fatty acids; cottonseed oil has 50%, corn oil has 54%, peanut oil has 30% and olive oil has only 7%. Only safflower oil, with 78% rates higher.

Yet soybean oil still has flavor problems. Address: PhD, Asst. Vice President and Director of Research, Cargill, Inc.

152. *Soybean Digest.* 1962. Index of advertisers. Sept. p. 4.
• ***Summary:*** Advertisers include: Aeroglide Corp. Agricultural Laboratories, Inc. Allied Mills, Inc. Amchem Products, Inc. American Express Field Warehousing Corp. American Liberty Tank Terminals. American Mineral Spirits Co. Arkansas Grain Corp. Bache & Co. Barrow-Agee Laboratories. Berkeley Associates. R.J. Brown Co. Cargill, Inc. Central Iowa Bean Mill. Chase Bag Co. Coastal Laboratories, Inc. Continental Grain Co. Crippen Manufacturing Co. Crown Zellerbach Corp. Dannen Mills, Inc. Davenport Machine & Foundry Co. Day Co. Delhi-Taylor Oil Corp. Drake Petroleum Co. Louis Dreyfus Corp. Extraction Continue De Smet. Farmer City Grain Co. Farmers Cooperative Assn. A.T. Ferrell & Co. Fred Forsberg & Sons, Inc. French Oil Mill Machinery Co. General Mills, Inc. Great Plains Bag Co. Jacob Hartz Seed Co., Inc. H. Hentz & Co. Hess Terminals. Hica Petrochemicals, Inc. Humble Oil & Refining Co. H.D. Hume Co. Iowa Milling Co. Jensen Mills. Kansas Soya Products Co., Inc. Langston Bag Co. Lauhoff Soya Co. Law & Co. George Lloyd Levin. Lockwood Grader Corp. Douglas L. Mains Co. M & W Gear Co. Mico Inc. N. Hunt Moore & Associates. Muskogee Iron Works, Inc. Myers-Sherman Co. National Tank Co. New York Terminal Warehouse. Phillips Petroleum Co. Port of New Orleans [Louisiana]. Rudy-Patrick Seed Co. Signal Oil & Gas Co. Simon-Carter Co. Southern Soya Corp. Standard Commission Co. Stillpass Transit Co. Tri-County Co-op Soybean Assn. Twin City Machine Co. Universal, Inc. Urbana Laboratories. Viking Pump Co. West Bend Elevator Co. K.I. Willis Corp. Woodson-Tenet Laboratories. Albrecht H. Zetzsche.

Note 1. This is the earliest "Index of advertisers" section at the beginning of any issue of *Soybean Digest.* The "Convention Issue" in September had long been the biggest issue of the year, and the one with the most advertisements.

Note 2. The next such "Index of advertisers" did not appear until July 1963, but from that month on there was an Index at the front of every issue.

153. *Soybean Digest.* 1963. Illinois alkyd plant purchased by Cargill. July. p. 35.
• ***Summary:*** "Purchase of one of the nation's newest alkyd resin plants has been announced by the special products division of Cargill, Inc. The seller was American Alkyd Industries of Illinois.

"The plant, 30 miles west of Chicago, at Carpentersville, Illinois, will produce a full line of Cargill soybean-based alkyd resins and polyurethanes, according to Herbert B. Juneau, vice president and division head.

"' This plant, added to Cargill's alkyd resin facility in Philadelphia, will be especially helpful in serving Midwest paint manufacturers,' Mr. Juneau said.

"Mark B. Spitz, Cargill technical oil salesman in New York and formerly alkyd resin merchant in Philadelphia [Pennsylvania], has been named manager of the Carpentersville resin plant."

154. *Soybean Digest.* 1964. Soybean Council of America, Inc.: Send top experts to conference in Tehran. Oct. p. 31-32.
• ***Summary:*** "The Soybean Council of America plans to send three of America's top vegetable oil research and production men to Iran to work at the 'shirt-sleeve' level with technicians from Middle Eastern and Asian countries at a Council-sponsored Regional Oil Conference at Tehran, Oct. 20-24."

Representing the Council at the conference will be: Dr. A.R. Baldwin, director of research of Cargill, Inc., Minneapolis, Minnesota; Dr. Karl F. Mattil, associate director of research, Swift and Co., Chicago, Illinois; and Dr. John C. Cowan, chief, oilseeds crops laboratory, Northern Regional Research Laboratory, Agricultural Research Service, USDA, Peoria, Illinois.

The conference will put primary emphasis on modern methods of soybean oil extraction, refining, and processing. It will also discuss technical modification of soybean oil for use in vanaspati, margarine, shortening, cooking oil, salad oil and dressings, mellorine, filled milk, and other potential uses in the Middle East and Asia.

155. **Product Name:** [Soy Oil, Indusoja Soybean Meal].
Manufacturer's Name: Industrias de la Soja S.A. (Indusoja; Affiliate of Cargill, Inc.).
Manufacturer's Address: Muelle Transversal, Tarragona, Spain.
Date of Introduction: 1964 December.
Ingredients: Soybeans.
How Stored: Shelf stable.
New Product–Documentation: Soybean Digest. 1965. July, p. 26. Cargill opens a Spanish soybean processing plant [at Tarragona, Spain, located south of Barcelona]. A photo shows the soybean processing plant with a capacity of 660 tons per day. It began operation in December 1964. It is the largest soybean processing plant in Spain.

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Soybean Digest Blue Book issue. 1965. p. 108. De Smet solvent, capacity 600 metric tons per day. Storage capacity 550,000 bu.

156. *Soybean Digest.* 1965. Corn and soybeans in North Carolina future. Feb. p. 21.
• ***Summary:*** "A large part of the future of North Carolina agriculture lies with corn and soybeans, a Wilson, N.C., grain merchant says. He is Raeford Flowers, branch manager for Cargill, Inc., one of the world's largest grain companies.

"Mr. Flowers, pointing to steadily increasing yields and production in the two crops, said that, as tobacco acreage allotments are cut back (there was a 10% cut in the 1964 crop), more and more North Carolina farmers will 'realize the opportunity offered by corn and soybeans for replacing this lost income.'

"He said U.S. Agriculture Department figures bear out what he called a 'continuing agricultural revolution in the state–particularly in the Coastal Plain.'

"The state's growth in soybeans has been spectacular, Mr. Flowers said. He noted that the North Carolina average yield of 26 bushels an acre is more than 3 bushels over the national average and well above four major soybean producing states of the mid-west–Ohio, Minnesota, Missouri and Kansas.

"'Of course, weather conditions have been very favorable this past year, but that fact certainly doesn't have anything to do with the continued growth in these crops over the past 6 or 7 years, because they weren't all good years,' he said."

157. *Soybean Digest.* 1965. New process for making whole soybeans tasty. April. p. 24.
• ***Summary:*** "Development of a process that makes the whole soybean, usually shunned as human food because of its bitter taste, adaptable to a variety of food uses has been announced by an official of Cargill, Inc., Minneapolis.

"Dr. A. Richard Baldwin, vice president and executive research director of the agricultural services company, said the Cargill-developed process 'makes the soybean not only more edible, but tasty, too.'

"The whole soybean's use as a human food has been narrowly limited because of its taste and 'other inhibiting factors,' he said. It is usually processed to separate its high-protein meal for animal feed and its high-fat oil for human food and industrial uses. He added that the new process has been patented by Cargill in the United States and Canada. Dr. Baldwin said the method, which involves treatment of the soybean by infrared heat, 'essentially cooks the whole bean or processed beans, thereby making them more nutritious and more palatable for a variety of uses.'

"The process makes possible the development of new types of 'ready-to-eat foods, especially new snack foods, such as roasted and salted soybeans,' Baldwin said. He said Cargill already has licensed the method to a snack food processor.

"He explained that nutritionists have known for years that raw soybeans could be cooked by conventional methods. However, he claimed, the Cargill process is an improvement because it greatly enhances not only the digestibility of the bean's proteins but also the palatability.

"The process treats soybeans containing their naturally-occurring oils with infrared radiation for a controlled period of time at a specified temperature and moisture content, he explained. The treatment gives the soybean a 'toasted, nut-like flavor that is delicious' and improves the nutritional value of its proteins, Baldwin said. He claimed the treatment is 'easily accomplished, economical, requires relatively simple equipment, and can be done on either a small or large scale.'

"Cargill has no plans itself for manufacturing finished foods under the process, but will license other manufacturers to use it, he said."

A portrait photo shows A.R. Baldwin.

158. Cargill, Inc. 1965. Cargill: Symbol of service to agriculture and industry (Ad). *Soybean Digest.* May. p. 65.
• ***Summary:*** A full-page ad. "The complete line of soybean meal and oil products.

Plant locations:
"Port Cargill [Savage], Minnesota.
"Cedar Rapids, Iowa.
"
Washington, Iowa.
"Memphis, Tennessee.
"
Chicago, Illinois.
"Fort Dodge, Iowa.
"Sioux City, Iowa.
"Norfolk, Virginia.
"Des Moines, Iowa.
"Wichita, Kansas" Address: Cargill Building, Minneapolis, Minnesota.

159. *Soybean Digest.* 1965. Grits and flakes... from the world of soy: Cargill opens a Spanish soybean processing plant. July. p. 26.
• ***Summary:*** "Operators are nearing capacity production at a new soybean crushing plant and import elevator just completed at Tarragona, Spain. The facilities were built by Cargill, Inc., of Minneapolis and a group of Spanish partners.

"Tarragona is a Mediterranean coastal city of 50,000 people located south of Barcelona. Work on the multimillion-dollar plant and elevator began in 1963. The 750,000-bushel elevator, first of its type in Spain, has been filled and emptied several times since its first use in December 1964. The processing plant, where soybean oil and meal are extracted from the beans, started production in February. It is the

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largest soybean plant in Spain, with a full capacity of 660 tons of soybeans per day, according to M.D. McVay, Cargill vice president. An additional refinery, to produce edible soybean oil, is planned this year, he said.

"McVay explains the function of the elevator as, 'primarily an importing facility, to bring soybeans and corn, chiefly from the United States, within easy reach of Spain's developing poultry industry. Ready availability of corn and high protein meal to Spanish users increases their demand and in so doing expands the market for U.S. farm products,' McVay said.

"The operation is an independent Spanish corporation, half Cargill and half Spanish businessmen. The name is Industrias De La Soja S.A. and this abbreviates to Indusoja and is pronounced 'Indu-soya.'

"Operating management includes Joaquin Guardiola, general manager, with offices in Madrid; Hendrik Van Veen, formerly with Cargill's vegetable oil division in Minneapolis, who is now lndusoja's commercial director headquartered in Tarragona; and Henry Sandvig, former superintendent of Cargill's Norfolk oil plant. Project manager on construction was Ewald Gustafson, Cargill engineer from Minneapolis."

A fairly large photo shows the plant with this caption: "New landmarks on the skyline at Tarragona, Spain, are these structures built and operated by Cargill, Inc., of Minneapolis and a group of Spanish investors. In the foreground is the 600-ton capacity soybean crushing plant. Behind that is shown the 18,000-ton grain elevator. Both units are now in full production."

160. *Soybean Digest.* 1965. Grits and flakes... from the world of soy: Dr. Richard Baldwin, vice president and executive director of research for Cargill, Inc... Aug. p. 45.
• ***Summary:*** "... of Minneapolis, has received the French Chevreul medal for chemistry. Dr. Baldwin, editor of the *Journal of the American Oil Chemists' Society,* was honored for his research work in the chemical properties of fats and oils."

161. National Soybean Processors Association. 1965. Year book, 1965-1966 (Association year). Chicago, Illinois. 63 p.
• ***Summary:*** On the cover (but not the title page) is written: "Year Book and Trading Rules, 1965-1966." Contents: Constitution and by-laws and code of ethics. Officers, directors and committees for 1965-66. Membership of the National Soybean Processors Association. Trading rules on soybean meal. Appendix to trading rules on soybean meal: Official methods of analysis (moisture, protein, crude fiber, oil {only method numbers listed}, sampling of soybean meal {automatic sampler, probe sampler}). Trading rules on soybean oil. Definitions of grade and quality of export oils. Tentative soybean lecithin specifications. Appendix to trading rules on soybean oil: Uniform sales contract, grading soybean oil for color (N.S.P.A. tentative method), methods of analysis (A.O.C.S. official methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses; soap stock, acidulated soap stock and tank bottoms (only method numbers listed).

The section titled "Officers, directors, and committees" (p. 12-15) states: President: Robert G. Houghtlin. Secretary: J.W. Moore. Treasurer: R.E. Fiedler. Executive Committee: L.W. Andreas, Chairman, Wilfred F. Carle, T.W. Bean, B.A. Townsend (term ending Sept. 1966). J.W. Moore, M.D. McVay, R.E. Fiedler, E.B. Copeland (term ending Sept. 1967). R.G. Houghtlin.

Board of Directors: Chairman of the board: L.W. Andreas. Vice chairman of the board: T.W. Bean. Immediate past chairman of the board: S.E. Cramer. (Term expiring Sept. 1966): R.A. Denman, Joe C. Givens, R.G. Golseth, Floyd E. Hiegel, H.D. Rissler, R.B. Williams. Term expiring Sept. 1967: T.J. Barlow, Elmer L. Buster, Elster B. Copeland, F.L. Morgan, H.R. Scroggs, B.A. Townsend. Term expiring Sept. 1968: Donald B. Walker -> Win Golden, Wilfred Carle, Arthur Frank, M.D. McVay, William King Self, Harry E. Wiysel. General counsel: Raymond, Mayer, Jenner & Block, Chicago, Illinois. Washington counsel: Sellers, Conner & Cuneo, DC. Washington representative: George L. Prichard, DC. Managing director, National Soybean Crop Improvement Council: Robert W. Judd, Urbana, Illinois.

Standing committees: For each committee, the names of all members (with the chairman designated), with the company and company address of each are given–Traffic and transportation. Technical. Oil trading rules. Industrial oil. Lecithin. Meal trading rules. Uniform rules and standards for soybean meal. Crop improvement council. Soybean research council. Soybean grades and contracts. Safety and insurance. Regional: Illinois, Indiana, Ohio, Kentucky, and eastern Missouri; Iowa, Minnesota, Nebraska, the Dakotas, Kansas, and Western Missouri; Mississippi River Delta Sections.

The following organizations, and individuals are members of NSPA: Allied Mills, Inc., Chicago, Illinois; Taylorville, Illinois; Guntersville, Alabama. Archer-Daniels-Midland Co., Minneapolis, Minnesota; Decatur, Illinois; Mankato, Minnesota; Fredonia, Kansas; Bloomington, Illinois. Arkansas Grain Corp., Soybean Division, Stuttgart, Arkansas (Wilfred F. Carle); Helena, Arkansas (W.E. Higginbotham). Big 4 Co-op. Processing Assn., Sheldon, Iowa (Kenneth J. McQueen). Buckeye Cotton Oil Div. of, The Buckeye Cellulose Corp., Cincinnati Ohio (R.B. Williams); Little Rock, Arkansas; Augusta, Georgia; Memphis, Tennessee. Cargill, Inc., Minneapolis, Minnesota (M.D. McVay, Jay Haymaker); Chicago, Illinois (Robert Cournoyer); Cedar Rapids, Iowa (C.W. Bohlander); Des Moines, Iowa (W.J. Wheeler); Fort Dodge, Iowa (George J. Cox); Sioux City, Iowa (A.L. Peterson), Washington, Iowa (William R. Matson); Wichita, Kansas (Ralph S. Moore); Memphis, Tennessee (Philip St. Clair); Norfolk, Virginia (D.H. Leavenworth). Central Soya Co., Inc., Fort

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Wayne, Indiana (B.A. Townsend); Decatur, Indiana (T.H. Alwein); Indianapolis, Indiana (R.E. Syster); Chicago, Illinois (Willard C. Lighter); Gibson City, Illinois (George R. Walter); Belmond, Iowa (J.R. Wright); Bellevue, Ohio (Harry Stokely); Marion, Ohio (Leroy Rich); Chattanooga, Tennessee (Jack Rosenberger). Delphos Soya Products Co., Delphos, Ohio (Floyd E. Hiegel). Delta Cotton Oil and Fertilizer Co., Jackson, Mississippi (Alfred Jenkins). Farmers Grain Dealers Assn. of Iowa (Cooperative) Soybean Processing Division, Mason City, Iowa (H.D. Rissler). Farmers Union C.M.A. [CMA], St. Joseph, Missouri (Arthur E. Frank). Fremont Cake & Meal Co., Fremont, Nebraska (Harry E. Wiysel). Galesburg Soy Products Co., Galesburg, Illinois (Max Albert & Regi Simon -> Elnathan Anderson, Box 711). General Vegetable Oil Co., Fort Worth, Texas (J.D. Morton). Gooch Milling & Elevator Co., Lincoln, Nebraska (M.R. Eighmy). Grain Processing Corp., Muscatine, Iowa (G.A. Kent, F.J. Prochaska, H.P. Woodstra). Honeymead Products Co., Mankato, Minnesota (L.W. Andreas, W.B. Cox, J.I. Maslon, C.T. Mullan, L.K. Rasmussen); Huegely Iowa Milling Co., Cedar Rapids, Iowa (Joe Sinaiko, Bob Scroggs, Les Liabo). Kansas Soya Products Co. (The), Emporia, Kansas (Elmer L. Buster). Lauhoff Grain Co., Danville, Illinois (Ralph G. Golseth, Loren R. Larrick, Laurie J. Slocum). Marshall Mills Co., Marshalltown, Iowa (J.B. Saccaro). Minnesota Linseed Oil Co., Minneapolis, Minnesota (R.J. Lindquist, Jr.). Mississippi Cottonseed Products Co., Jackson, Mississippi (H.E. Covington). Missouri Farmers Assn., Grain Div., Mexico, Missouri (Kermit F. Head). Owensboro Grain Co., Owensboro, Kentucky (William M. O'Bryan). Paymaster Oil Mill Co., Houston, Texas (T.J. Barlow, C.R. Bergstrom); Phoenix, Arizona (O.C. Harris); Jackson, Mississippi (John Bookhart). Perdue (A.W.) & Son, Salisbury, Maryland (Robert L. Brodey). Planters Industries, Inc., Rocky Mount, North Carolina (W.T. Melvin). Planters Manufacturing Co., Clarksdale, Mississippi (A.K. Shaifer). Quincy Soybean Products Co., Quincy, Illinois (Theodore W. Bean, John Franks). Ralston Purina Co., St. Louis, Missouri (Donald B. Walker, W.L. Golden); Kansas City, Missouri (A.V. Couch); Bloomington, Illinois (R.C. Witte); Decatur, Illinois (R.E. Baer); Lafayette, Indiana (A. Hardy); Iowa Falls, Iowa (W. Bower); Louisville, Kentucky (J. Gardner); Raleigh, North Carolina (J.L. Bumgardner); Memphis, Tennessee (J.K. Sartain). Riverside Oil Mill, Marks, Mississippi (William King Self). Sisketon, Missouri (P.B. Bartmess). Southern Cotton Oil Div., Hunt Foods and Industries, Inc., New Orleans, Louisiana (F.L. Morgan); Newport, Arkansas (Jerry Jeffrey); Macon, Georgia (M.S. Long); Greenville, Mississippi (M.D. Kolb); Goldsboro, North Carolina (W.W. Davis). Southern Soy Corp., Estill, South Carolina (R.A. Denman). Southern Soya Corp. of Cameron, Cameron, South Carolina (Charles Everett Bullard). Staley (A.E.) Manufacturing Co., Decatur, Illinois (J.W. Moore, E.C. Lane, H.E. Lents); Painesville, Ohio (D.J. Hopkins). Swift & Co., Chicago, Illinois (Scott E. Cramer, W.W. Moore). Townsends, Inc., Millsboro, Delaware (P.C. Townsend). Tri-County Co-op Soybean Assn., Dawson, Minnesota (Joe C. Givens). West Tennessee Soya Mill, Inc., Tiptonville, Tennessee (Tyler Terrett). Yazoo Valley Oil Mill, Inc., Greenwood, Mississippi (N.F. Howard).

Associate Members: American Feed Stores Home Organization, Inc., Minneapolis, Minnesota. Anderson Clayton & Co., Foods Div., Dallas, Texas. Armour & Co., Chicago, Illinois (Harry K. Bean [crossed out]). Capital City Products Co., Div. of Stokely-Van Camp, Inc., Columbus, Ohio. Cereales y Concentrados, Mexico City, Mexico (Francis Tovar [crossed out]). Colchester Processing Co., East St. Louis, Illinois [crossed out]. Cooperative Mills Inc., Baltimore, Maryland. Corn Products Co., New York City, New York (R.W. List). General Mills, Inc., Kankakee, Illinois (Gerald G. Wilson) [handwritten in]. Grasas Vegetales, S.A., Guadalajara, Jalisco, Mexico (Mr. Collighon) [handwritten in]. Greendale Soy Products, Inc., Kinmundy, Illinois (Elwin G. Ingram) [handwritten in]. Glidden Co. (The), Durkee Famous Foods, Div., Chicago, Illinois (Gerald J. Daleiden). Hartsville Oil Mill, Hartsville, South Carolina (Edgar H. Lawton, Jr.). Huegely Elevator Co., Nashville, Illinois (J.W. Huegely). HumKo Products–Div. of National Dairy Products Co., Memphis, Tennessee (Sam Cooper). Kraft Foods Div. of National Dairy Products Corp., Chicago, Illinois (G.M. Gibson). Lever Bros Co., New York City, New York. Maple Leaf Mills Ltd., Toronto, Ontario, Canada (W.G. Milliken) [handwritten in]. Nebraska Consolidated Mills Co., Omaha, Nebraska [crossed out]. Pacific Vegetable Oil Corp., San Francisco, California. Procter & Gamble Co. (The), Cincinnati, Ohio. Quaker Oats Co. (The), Chicago, Illinois. Spencer Kellogg Div. of Textron Inc., Buffalo, New York. Supersweet Foods Div., International Milling Co., Minneapolis, Minnesota. Valley Mills, Vicksburg, Mississippi. Wesson Div., Hunt Foods and Industries, Inc., Fullerton, California. Ralph Wells & Co., Monmouth, Illinois (Willis H. Wells). Address: 3818 Board of Trade Building, Chicago 4, Illinois.

162. Kay, Hubert. 1965. The two-billion-dollar company that lives by the cent. *Fortune.* Dec. p. 166-69, 196, 200, 202.
• ***Summary:*** Cargill, the biggest U.S. grain merchant, is a family-owned firm of great affluence, that operates in relative secrecy. "Among the fast-moving men who live by dealing in the stuff of life called grain, Cargill is a name to chill the heart. Competitors speak of Cargill, Inc.–of its huge size and diversity, of its 'audacity' and 'smartness' and 'aggressiveness'–in a tone of mixed admiration, envy, and caution, for in the split-second business of commodity trading, where volume is measured in billions of bushels and prices in fractions of a cent, Cargill is the shrewdest, toughest trader of them all. Yet among the multitudinous

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people who eat the end products of what Cargill sells, its name is little known. Even people who live in Minneapolis [Minnesota], asked about the Minneapolis-based company, have been known to reply: 'Cargill? What do *they* do?'

Contains a good history of the company and dynasty, founded when Will Cargill began buying wheat for Milwaukee commission houses 100 years ago. "Will set up a number of companies in partnership with his younger brothers. In 1873 he fatefully settled his family across the street from another prosperous Scotch Presbyterian family named MacMillan. The children of the two families became close friends. In 1895 John Hugh MacMillan married Will's elder daughter and soon went to work for his rich father-in-law. Will's elder son, William S. Cargill, married John's cousin.

"After Will died intestate, a family struggle ensued to save and control his companies. The winner was Will's steady, reliable son-in-law John MacMillan, who had become general manager of the Minneapolis-based Cargill Elevator Co. that Will founded. MacMillan became president of an expanded Cargill Elevator, after displacing a Cargill and leaving Cargills and MacMillans to a feud of festering bitterness and mutual recrimination. But, despite the feud, Cargill Elevator kept climbing, especially after war in Europe created an enormous demand for American food. By 1916, Cargill Elevator–which became Cargill, Inc., in 1930–had a net worth of more than $4 million, and it has been gaining ever since.

"The man who propelled the company to its great growth was John H. MacMillan Jr., who succeeded his father as president in 1936. 'John Junior,' as Cargilians still call him, was a contentious, abrasive, uncompromising free enterpriser who embroiled Cargill in many a hassle with competitors, the Chicago Board of Trade, and the U.S. Government."

163. **Product Name:** Lecithin.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Cargill Building, Minneapolis, Minnesota.
Date of Introduction: 1965.
New Product–Documentation: Soybean Blue Book. 1965. p. 111.

164. Work, John L. 1965. Cargill beginnings... an account of early years. Minneapolis, Minnesota: Cargill Inc. [viii] + 154 p. Illust. (black and white photos). Maps. Portraits. 24 x 24 cm.

• ***Summary:*** Cargill was founded as a frontier grain business in 1865; this book was published to coincide with the company's 100th anniversary. Yet it is not simply a history of Cargill; this history ends by about 1930. The book is had to read because the print is too small; it is set in small type. The story of Cargill is largely the story of two families: The Cargills and the MacMillans. The Cargill name comes from Scotland. As far as we know, all its present day bearers have their roots there, in the midland county of Perth (see map, p. 13). Donald Cargill achieved martyrdom in July 1681 when he and a group of some 80 Covenanters proclaimed revolution. He was hanged in Edinburgh.

Contents: 1. Origins in Scotland: Recent factual failings, Donald the martyr, Clan MacMillan, verifiable ancestries, MacMillan contingent to the U.S., Orkney Island Cargills. 2. Captain's [William Dick Cargill's] maritime years, 1829-58: James Cargill's 1849 letter, the captain's kin, the captain's life in brief, recent riverboats and early ships, official ships' name sources, ships probably British, voyage farthest north, some unmatched pieces, why U.S. became home, lure of America, shift to U.S. of English talent, China voyage [not related to grain trade], U.S. ship registries, foliage on family tree, the earliest thread, named Smith, the artist-brothers Mount, Cargill legacy from Mounts, children born to the Captain and Edna, a catalog of ships. 3. Ties to the sea in Wisconsin: Pressure of panic of '57, underlying panic, Edna's influence, Cargill-Baker stories mix, fragments of Barker maritime background, religious affiliations. 4. Landlocked in Janesville: The Cargill farm, the Barker farm, a distant war, return to isolationism, farming in the war years, agriculture's hub in Wisconsin, school and church, those who remained in Janesville. 5. Will and the farming frontier: Boom town at Conover, alternatives to Conover, obscurity of Iowa years, the one-crop economy, early tendency to monopoly, growth in Iowa; Sylvester's start, Iowa's elevators' worth.

6. Marriage and the move to Minnesota: Couldn't say no?, mostly about Sam, Albert Lea begins Minnesota expansion, panic and partnerships, mule farm experiment. 7. The view from LaCrosse: Expansion of the Line, northerly swing: mainly about Jim, back in LaCrosse. 8. In LaCrosse–the two families: The house itself, the LaCrosse MacMillans, the MacMillan and Cargill relationship, the young lions, John D. and William S. 9. The time of troubles: Prior to 1903, 1903, first of the critical years, father and son, after 1903, the black sheep role of William S., in conclusion. 10. Death and reorganization: The estate and its handling, corporate reorganization.

Genealogical table–William Dick Cargill descendents. Genealogical table–predecessors of William Dick Cargill and Edna Davis. Barker maritime references by C.C. Culter. Cargill elevators in Minnesota 1882-1886; in North and South Dakota 1887-1909. Genealogical table–Duncan D. MacMillan descendents. Accountant's report–Cargill, 1935.

On p. 13 are maps of Scotland and the Orkney Islands. On p. 20 is a family tree, the descendants of William Dick Cargill and Edna E. Davis, down to the 1940s. On p. 35 is a family tree, the ancestors of William Dick Cargill and Edna E. Davis, back to the 1600s.

Note: "The History of Cargill" (a paper-bound, brown-

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covered pamphlet) was printed in 1945 [sic, 1946] (see p. 2, 148, and record in this book). Address: Minneapolis, Minnesota.

165. *Soybean Digest.* 1966. Cargill to build big plant at Gainsville. March. p. 49.
• ***Summary:*** "Cargill, Inc., will build a large soybean processing plant in Gainesville, Georgia, M.D. McVay, vice president of the company headquartered there, announced.

"Construction of the facility will begin immediately, Mr. McVay said. First phase of the construction, to be completed next fall, will include an elevator for receiving and storing the soybeans.

"'This plant will broaden Cargill's service to broiler and egg producers in north Georgia and the Carolinas by providing them a convenient source of high-protein soybean meal for their feed,' Mr. McVay said. 'The Southeastern United States is steadily expanding its production of soybeans, and this plant will provide a ready market for producers in the area.'

"The plant also will acquire soybeans from southern Illinois and southern Indiana."

166. Haymaker, J.N. 1966. The world market potential for soybeans. *Soybean Digest.* May. p. 27-30.
Address: Cargill, Inc.

167. *Soybean Digest.* 1966. Three U.S. firms are processing [soybeans] in Spain. May. p. 51, 54.
• ***Summary:*** "The A.E. Staley Manufacturing Co. has announced that its new joint venture processing plant in Santander, Spain, will begin production in May... When fully operational it will have a daily processing capacity of more than 350 metric tons of soybeans. The joint venture company, Sociedad Iberica de Molturacion, S.A., known as SIMSA, is owned equally by Staley and Sonaco, S.A., a prominent Madrid commodities firm... The Spanish plant marks Staley's first overseas venture in soybean processing."

Cargill, Inc. of Minneapolis, Minnesota, and a group of Spanish investors have a processing plant in Tarragona, Spain. It has been operating at peak capacity (700 tons/day of soybeans) since Feb. 1965. It is "operated as an independent Spanish corporation and is know formally as Industrias de la Soja S.A. which shortens to Indusoja and is pronounced 'Indu-soya.'"

"Archer Daniels Midland Co.'s affiliate in Spain, Oleotecnica, S.A., produces soybean-based margarine at its plant in Castro-Urdiales. Oleotecnica refines soybean oil imported from the United States for its margarine. The plant also crushes some soybeans imported from the United States."

168. Humphries, Bill. 1966. Soybean group formed, assessment vote OK'd. *News and Observer* (*Raleigh, North Carolina*). June 8.
• ***Summary:*** "A new organization known as the North Carolina Soybean Producers Association, Inc., has filed its charter with Secretary of State Thad Eure.

"The State Board of Agriculture, meeting here Tuesday, authorized the association to hold a referendum. To determine whether producers of soybeans wish to assess themselves not more than one-half cent per bushel to maintain and protect the future of this important crop in North Carolina. Tentative plans call for the referendum to be held in early fall–probably in September so that the program can become effective on this year's crop.

"Funds should be collected from producers by grain buyers at assembly or first-handler markets. In addition there would be associate membership fees from related agribusiness.

"Officers of the new association are Leroy W. Powers of Moyock, president; John G. Reed Jr., Planters Industries, Rocky Mount, vice president; Dr. Howard G. Small, N.C. State University, Raleigh, secretary; and S.M. Cozart, Wilson, treasurer.

"Big Business: Soybeans are big business in North Carolina and soon will become the third largest income producing crop in the State. Some 810,000 acres were harvested last year with yields averaging 24½ bushels an acre. Gross value of the crop to producers was about $47.6 million. By 1971 it could be $90 million."

"Also, soybeans are harvested after completion of tobacco marketing and in many cases tobacco warehouses can be used for soybean storage. Cargill operates six soybean buying stations in Western Carolina and is a substantial factor in the soybean market."

169. *Minneapolis Tribune.* 1966. Cargill will build Dutch soybean plant. July 1.
• ***Summary:*** The large soybean processing [crushing] facility will be located in the Port of Amsterdam, and will have an initial capacity to crush 300,000 tons of soybeans a year to make 240,000 tons of soybean meal and 55,000 tons of oil–according to M.D. McVay, vice-president and head of the company's Vegetable Oil Division.

The plant is expected to begin operations in Oct. 1967.

This is Cargill's second soybean processing facility outside the United States; it "has an interest in a somewhat smaller facility in Spain." Address: Minnesota.

170. Bowen, William; Shook, Edgar. 1966. Why they call those soybeans "golden." *Fortune* 74:126-29, 186, 191. Aug.
• ***Summary:*** Soybeans have become a $2.5-billion crop in the U.S., a major U.S. export, and the basis of a hefty

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domestic processing industry. In the futures market, soybeans have outdistanced all other commodities in dollar volume of transactions. At Chicago's Board of Trade soybean futures are bought and sold in the largest of the seven commodity pits–*the* pit, the famous arena formerly occupied by the old-time champion, wheat...

"The U.S. produces about 70 percent of the world's soybeans, and is the only nation with a substantial surplus for export. The only other big producer of soybeans, Red China, consumes most of its crop at home...

"Last fall's crop was four times as big as 1945's, and about 170 times as big as that first officially recorded crop in 1924...

"Since the early 1950's, demand for meat, and hence for soybean meal, has grown faster in Western Europe and Japan than in the U.S., and as a result U.S. soybean exports have expanded at an average annual rate of 16 percent since 1953... In dollar earnings, soybeans and soybean products now rank as the U.S.'s No. 1 agricultural export...

"In recent years margins have tended to be uncomfortably narrow...For a big, efficient crusher, the breakeven crushing margin comes to about 17 cents a bushel. During the past several years average industry-wide crushing margins... have tended to run considerably below that breakeven level...

"Intense competition and meager margins have driven many companies out of soybean processing. The number of companies in the business has shrunk from about ninety in 1946 to sixty-five or so today. Some big companies have dropped out, including Spencer Kellogg and General Mills. The companies still in soybean processing include six giants, all headquartered in the Midwest. Among them they have something like 60 percent of the industry's total crushing capacity. The biggest are Central Soya Co. of Fort Wayne, Indiana, with a capacity of 84 million bushels a year, and Cargill, Inc., of Minneapolis [Minnesota]. Cargill claims to have about the same capacity as Central Soya. The other four members of the Big Six all have capacities on the order of 50 million to 60 million bushels a year: Archer Daniels Midland Co. (Minneapolis), Ralston Purina Co. (St. Louis), Swift & Co. (Chicago), A.E. Staley Manufacturing Co. (Decatur, Illinois).

"These companies all have large interests apart from soybeans, Archer Daniels, Cargill, Ralston, and Staley in grains, and Swift in meats. Even Central Soya, despite its name, gets less than half its revenues from soybean processing; the company has spread out on a grand scale into other fields, including feed manufacturing and grain merchandising...

"Soybean futures work like other commodity futures. The future bought or sold constitutes an enforceable contract to take delivery of, or deliver, a specified quantity at a specified price in a specified month at a specified place. But at any time prior to the delivery month the buyer or seller can cancel out the contract at will (though not always, of course, without loss), simply by taking an equal action in the opposite direction. The trader who bought sells, or the trader who sold buys, and, lo, everything washes out. The earlier and later transactions offset each other. Most futures contracts are offset in this way, prior to maturity; at the Board of Trade only 1 percent or so are settled by actual delivery of the commodities.

"Basically, the commodity-futures market enables holders of large inventories to hedge against inventory losses resulting from price declines."

Contains a detailed discussion of hedging and its complexities and uncertainties. "Hedging is more sophisticated than crushing."

171. *Soybean Digest.* 1966. Honorary life members [American Soybean Assoc.]: D.W. McMillen and Dwayne O. Andreas. Sept. p. 6.

• ***Summary:*** "Dale W. McMillen, a pioneer in the soybean processing industry, demonstrated his belief in the future of the soybean by founding Central Soya at Decatur, Indiana, in the depression year of 1934 when he was 54 years of age.

"He believed that soybean meal could become an important ingredient in animal feeds, and the founding of Central Soya to process soybeans and manufacture Master Mix feeds was his way of putting his belief into action.

"Mr. McMillen was one of the first in the industry to take the major step in 1937 of converting from the expeller method of processing soybeans to the now universally accepted solvent extraction method of processing soybeans into meal and oil. For a company scarcely 3 years old, this was a courageous move.

"In the late thirties, soybean meal had so little standing in the feed industry that one of Mr. McMillen's first jobs was that of making soybean meal respectable. Through cooperative work with agricultural colleges, utilizing nutrition conferences for veterinarians and livestock feeders, Mr. McMillen and his staff helped dispel false ideas about soybean meal and give soybean meal the place it deserved in the nation's feedlots. Mr. McMillen's personal salesmanship and his continuing emphasis on improving the product through technological advances in processing techniques also contributed significantly to building a market for soybean meal, and thus for the soybean itself.

"Now an active 86 years of age, Mr. McMillen has lived to see the soybean crop grow from 23 million bushels in 1934 to a figure approaching the 1-billion-bushel mark in 1966.

"Dwayne O. Andreas, of Excelsior, Minnesota, has had a lifelong association with the processing of soybeans. He believes he has been involved in planning, building, or actually operating about 30% of the soybean processing capacity of the nation at one time or another. Also, he has had a hand in the manufacture of almost every product made

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from soybeans.

"Mr. Andreas was born on a farm near Worthington, Minnesota, and spent his early years on the farm. During his school years he worked in the family country elevator and seed business at Lisbon, Iowa.

"From 1938 to 1945 he was principal executive officer of the family-owned company, Honeymead Products Co., which had soybean processing facilities at Cedar Rapids and Washington, Iowa.

"From 1946 to 1952 he was vice president of Cargill, Inc., with soybean processing plants in Chicago, Illinois; Fort Dodge, Iowa; Springfield, Illinois; Savage, Minnesota; and Memphis, Tennessee.

"From 1961-65, he was executive vice president of Farmers Union Grain Terminal Association, which owns a processing plant [Honeymead] at Mankato, Minnesota.

"At present, Mr. Andreas is a member of the board of directors and the executive committee of Archer Daniels Midland Co., which has soybean processing plants at Bloomington, Galesburg and Decatur, Illinois; Fredonia, Kansas; and Mankato, Minnesota.

"Mr. Andreas is also chairman of the board of directors of First Interoceanic Corp., a privately owned investment company, Minneapolis; chairman of the executive committee, National City Bank of Minneapolis; and president of the Andreas Foundation, Minneapolis."

Photos show D.W. McMillen and Dwayne O. Andreas.

172. *Soybean Digest.* 1966. Grits and flakes... from the world of soy: Three new directors elected by Cargill. Oct. p. 22.
• ***Summary:*** "Stockholders of Cargill, Inc., Minneapolis, have elected three new directors of the firm. The three are Whitney MacMillan and William Duncan MacMillan, both of Minneapolis, and Walter F. Gage, Geneva, Switzerland.

"The meeting accepted the resignation as director of Cargill MacMillan, retired president of the firm, and approved expansion of the board from nine members to eleven.

"Whitney MacMillan has been a vice president and assistant to the president of Cargill since 1962. He joined Cargill in 1951 as a trainee. He merchandised vegetable oils in Minneapolis and San Francisco and returned to Minneapolis in 1956."

A small portrait photo shows Whitney MacMillan.

173. *Soybean Digest.* 1966. Cargill to build a plant in Amsterdam. Oct. p. 26.
• ***Summary:*** "Cargill, Inc., has announced plans to build a large soybean processing facility in the Port of Amsterdam.

"M.D. McVay, Cargill vice president and head of the company's vegetable oil division, says the new plant will have capacity at the start to process 300,000 tons of soybeans per year, producing 240,000 tons of meal and 55,000 tons of oil. It is designed so that capacity can be expanded to 500,000 tons of soybeans when the demand for products is adequate to support such expansion. Construction of the plant is to begin immediately and is scheduled to begin production in October 1967.

"Oil and meal produced from U.S. soybeans at the Amsterdam plant will go to markets in Western Europe, Great Britain and Scandinavian countries."

174. Cohen, Maxim M. 1966. Seaport of Chicago–Gateway to the Midwest's soybean lands. *Soybean Digest.* Dec. p. 15-16, 19-21, 23.
• ***Summary:*** The cover story of this issue of Soybean Digest is "Seaport of Chicago." This story reads more like an advertisement than an article, although it does contain valuable information. The entire first page of the article is an aerial photo of the "Seaport of Chicago," with those words written in red across the middle.

Contents: Introduction. Other facilities (on the Calumet River). International port. Calumet elevators. Bulk terminals. Access to all roads.

Photos show: (1) Chicago Harbor Lighthouse. (2) Portrait photo of Maxim M. Cohen. (3) General Mills Chicago installation with 2½-million-bushel Rialto elevator at left. The elevator supplies domestic and export demand. (4) Cargill's 20-million-bushel elevator on the Calumet channel–largest on the Great Lakes. (5) Archer Daniels Midland Co.'s 4,800,000-bushel Calumet elevator. (6) Continental Grain Co.'s B elevator. Continental has three big elevators at Chicago, A, B, and C. All these elevators are domestic and export terminals, with facilities for receiving soybeans by rail, barge, and truck, and shipping out in rail cars, barges, and ships. Address: General Manager, Chicago Regional Port District.

175. *Soybean Digest.* 1966. Calumet harbor and river improvement. Dec. p. 19.
• ***Summary:*** See next page. Lake Calumet is the largest body of water within the city of Chicago. This map shows Lake Calumet, the Calumet River, Calumet Harbor, and Lake Michigan.

On the map are shown 17 numbered terminals or elevators, including: (9) ADM's Calumet Elevator. (10) Cargill Chicago Elevator. (11) Continental Elevator A. (12) Continental Elevator B. (17) Continental Elevator C.

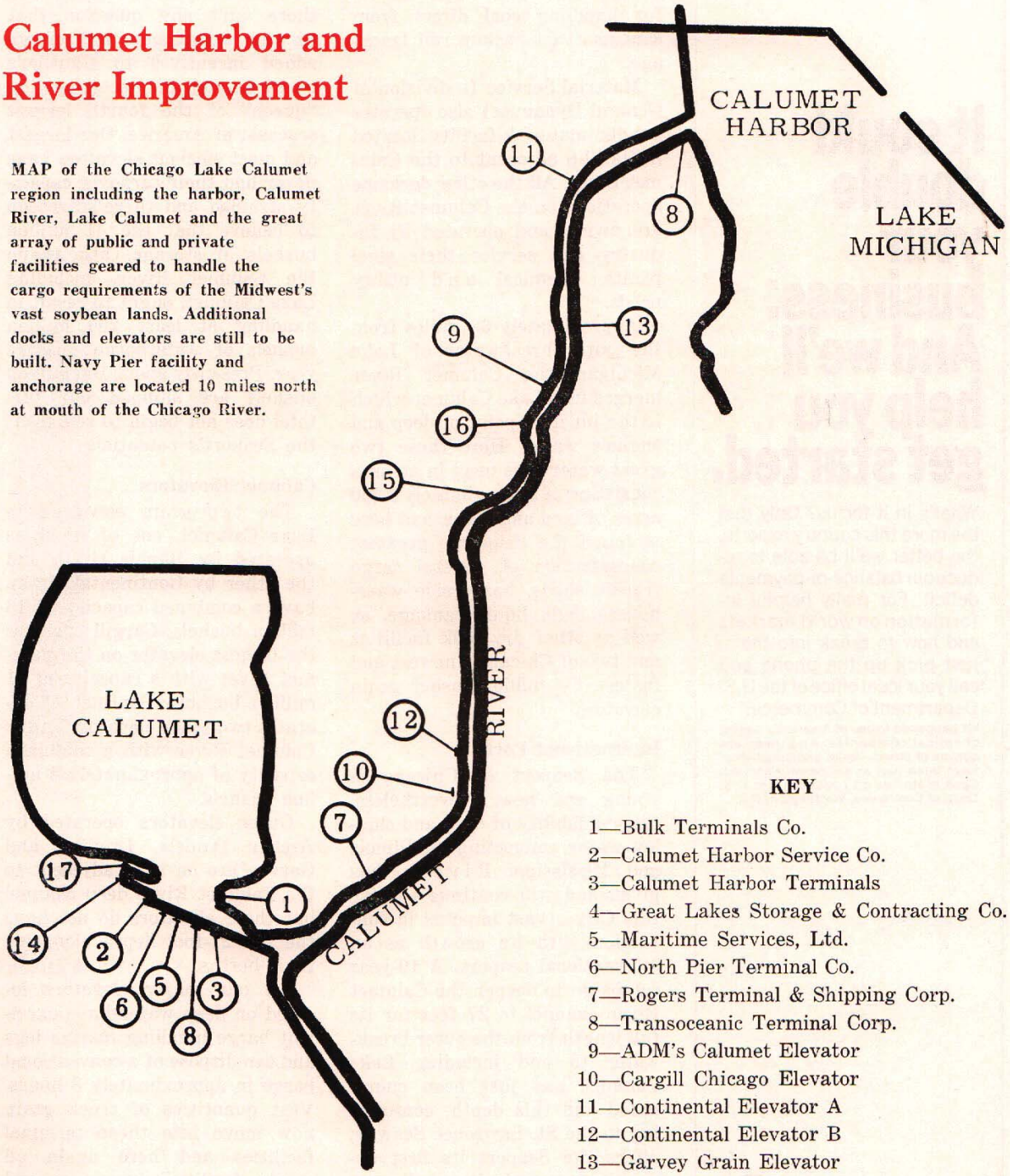
176. *Cedar Rapids Gazette* (*Iowa*). 1967. Cargill to lease Corn Starch and Iowa Milling Co. May 11. p. 1.
• ***Summary:*** "Cedar Rapids News–The agricultural processing facilities of the Corn Starch and Syrup Co. and the Joseph Sinaiko interests in Cedar Rapids will be leased to Cargill, Inc.

"A joint announcement on the lease was made Thursday by Sinaiko, president of Corn Starch and Syrup and M.D. McVay, vice-president of Cargill, Minneapolis.

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Calumet Harbor and River Improvement

MAP of the Chicago Lake Calumet region including the harbor, Calumet River, Lake Calumet and the great array of public and private facilities geared to handle the cargo requirements of the Midwest's vast soybean lands. Additional docks and elevators are still to be built. Navy Pier facility and anchorage are located 10 miles north at mouth of the Chicago River.



KEY

1—Bulk Terminals Co.
2—Calumet Harbor Service Co.
3—Calumet Harbor Terminals
4—Great Lakes Storage & Contracting Co.
5—Maritime Services, Ltd.
6—North Pier Terminal Co.
7—Rogers Terminal & Shipping Corp.
8—Transoceanic Terminal Corp.
9—ADM's Calumet Elevator
10—Cargill Chicago Elevator
11—Continental Elevator A
12—Continental Elevator B
13—Garvey Grain Elevator
14—Gateway Elevator
15—Dreyfus Corp. Irondale Elevator
16—Rialto Grain Elevator
17—Continental Elevator C

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"The lease arrangement will provide Cargill its first operation in corn milling, McVay said. His firm, founded in Iowa 102 years ago to market grain, also manufactures animal feed and oilseed products.

"Cargill will begin operating the plant, located at 1710 Sixteenth street SE, Sept. 1. Sinaiko said the plant has capacity to process 14,000 bushels of corn per day into starch and syrup and gluten feed products. The plant was built in 1965 and employs 70 persons.

"McVay said he expects no changes in plant personnel when Cargill takes over the operation.

"The Cargill firm opened a grain marketing office in Cedar Rapids in the 1930s. Its feed division, Nutrena, has manufactured animal nutrition products here since 1945. Iowa Milling Co., 411 Sixth street NE, which Cargill operated during the 1940s, also is involved in the lease arrangement with Sinaiko."

177. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Gainesville, Georgia.
Date of Introduction: 1967.
Ingredients: Soybeans.
New Product–Documentation: *J. of the American Oil Chemists' Soc.* 1985. "Soy pioneer bows out, others grow bigger." March. p. 474, 476. Cargill has a soybean crushing plant in Gainesville, Georgia.

Lauser, Greg C. 1982. "History of Cargill's involvement in the soybean processing industry." Minneapolis, Minnesota. 5 p. Unpublished typescript. March 15. Courtesy Cargill, Inc. In 1967 Cargill opened the Gainesville, Georgia, soybean processing plant. A refinery, Cargill's first to produce hydrogenated or "hardened" oil for the Southeastern food manufacturing industry, was built adjacent in 1979.

178. *Soybean Digest.* 1968. Cargill associated in French processing plant. Jan. p. 34.
• ***Summary:*** Cargill, Inc. (based in Minneapolis, Minnesota) and three French associates, will build a major soybean processing complex at St. Nazaire, France. The group, named Industrie du Soja, will be capitalized at 11 million francs; Cargill will own 50%, with the remainder belonging to Provimi (a leading animal feed producer), Synoxy (a chemical company with a plant near St. Nazaire), and Soprorga (a Kuhlman-Rousselot company). The plant capacity will be 500 tons/day initially, but this could be doubled later.

179. *Soybean Digest.* 1968. CPA plans soybean plant in Georgia. Jan. p. 37.
• ***Summary:*** Cotton Producers Association (CPA) plans to construct a $6-million soybean processing plant (1,500 tons/day capacity) and grain storage facility (4 million bushels) at Valdosta, Georgia. It will be operated as Gold Kist Soya, a division of CPA. The location will provide easy access to the export areas of Savannah, Georgia, and Jacksonville, Florida.

The soybean facility will be designed and engineered by Blaw-Knox Co. of Pittsburgh, Pennsylvania. The grain storage will be designed and constructed by Gulf States Construction Co., Atlanta, Georgia. The plant will make both 44% and 50% protein soybean meal.

Cargill also recently constructed a plant in Georgia, at Gainesville.

Note: This is the earliest document seen (March 2008) concerning Gold Kist in connection with soybeans.

180. Cargill, Vegetable Oil Division. 1968. Always on the grow for agriculture and industry: finding and filling the need for soybean meal and oil products (Ad). *Soybean Digest.* April. p. 15.
• ***Summary:*** In the top three-fourths of this full page ad is a large, vertical stylized soybean pod bearing three round seeds. On the first is printed "Products," on the second "Research" and on the third "Marketing.

In the lower left are listed Cargill's processing "Plant locations" in the USA: "Port Cargill, Minnesota. Cedar Rapids, Iowa. Washington, Iowa. Memphis, Tennessee. Chicago, Illinois. Ft. Dodge, Iowa. Sioux City, Iowa. Norfolk, Virginia. Des Moines, Iowa. Wichita, Kansas. Gainesville, Georgia."

In the lower center is the round Cargill Vegetable Oil Division logo.

Note: This ad also appeared in the March 1970 *Soybean Digest Blue Book Issue.* The pod, beans and logo are green. Address: Cargill Building, Minneapolis, Minnesota.

181. *Soybean Digest.* 1968. Mann elected Central Soya vice president. June. p. 36.
• ***Summary:*** Wendell E. Mann has been elected a vice president of Central Soya with responsibility for the operation of the chemurgy division of the company. Mann replaces Willard C. Lighter, who has requested an early retirement for health reasons.

"Mr. Mann has been chemurgy division general manager since January of 1966. He will continue to be located at the divisional headquarters in Chicago. He has been with Central Soya since 1936.

"Lighter has been vice president in charge of the chemurgy division since 1961, when that Chicago [Illinois] facility was purchased by Central Soya from the Glidden Co. He was with Cargill, Inc., from 1934 to 1952. He joined Glidden in 1952 as manager of the soya products division and was made a Glidden vice president and director in 1953.

"Central Soya's chemurgy division is the world's largest supplier of soy products to the food industry."

Portrait photos show W.E. Mann and W.C. Lighter.

182. *Soybean Digest.* 1968. Cargill has opened plant in

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Amsterdam. Aug. p. 42.
• ***Summary:*** The plant began operations in late March 1968, but it officially opened on May 22. Cargill Industries N.V. is a subsidiary of Cargill, Inc. (Minneapolis, Minnesota).

"The plant will be able to process 500,000 tons of soybeans annually, however it will crush 300,000 tons."

The manager of the plant is Adrianus Blankestijn, former manager of Cargill's soybean plant in Memphis, Tennessee. Cargill is also associated with a plant in Tarragona, Spain.

A photo shows the Amsterdam plant and its many tall silos for storing soybeans.

183. Haymaker, J.N. 1968. Selling soybeans overseas. *Soybean Digest.* Sept. p. 48-51.
• ***Summary:*** "They say there is a fine line between keeping your chin up and sticking your neck out and it well behooves one to know the difference. For years I have been searching for the difference. This afternoon we are going to discuss a business that is surely different–the export bean business.

"It is viewed differently by all the participants–you the producer, the country elevator, the terminal elevator, the export merchants, the consumer overseas–your customer–and finally Uncle Sam, who is hungry for the monetary exchange it generates and its effect on the U.S. balance of payments.

"First, let's talk about how the overseas buyers view U.S. soybeans. We have various categories of buyers with different interests. The buyer in Japan, who is manufacturing the traditional Japanese foods for human consumption, is interested in finding a source of soybeans that are very clean, evenly sized–preferably a large seed, a variety with a white or colorless hilum and with the highest protein content possible.

"The emphasis placed on the various characteristics mentioned varies depending on the type of food to be manufactured from it, be it soy sauce, soy paste [miso] or soy curd [tofu]. It will also vary from manufacturer to manufacturer and year to year, depending on alternative soybean choices.

"Try to Get Quality: To meet their particular demands, the Japanese food buyers are constantly trying various schemes to get the quality they want in an ever-continuing effort to reduce the premium they have to pay over ords–trade jargon for the most traded grade, ordinary 2YSB (No. 2 yellow).

"As the years have gone by they have paid premiums for Minnesota origins (believe it or not), Illinois origins and most recently Ohio/ Indiana/Michigan origins. This area selection system requires that they pay the least premium on a delivered basis.

"Several years ago, we were selecting Harosoy beans as they came into our Illinois river houses and selling a 95% pure variety bean. This was, obviously, more expensive than area selection as it tied up valuable space in river and terminal elevators or incurred barge demurrage to keep identity preserved.

"Some buyers have arranged with country elevators to contract with growers for the variety that best fits their needs. This is, obviously, raising the cost over the selection system. Some buyers prefer their beans shipped in bulk and others go to the additional expense of having their seed cleaned and bagged. In addition to the expense of cleaning and bagging goes the much higher ocean freight cost for sacked commodities versus bulk commodities.

"Soy sauce manufacturers require 15,000 m/t of soybeans and 180,000 m/t of high protein soybean meal. They have the least critical quality requirements. Normally, they will select a certain area of production and be willing to pay a premium.

"Soy paste has an annual requirement of 170,000 m/t. They require a white hilum. Manchurian beans cover 150,000 m/t, U.S. Kanrich variety 15,000 m/t and U.S. Harosoy the balance.

"Soy curd has an annual requirement of 290,000 m/t. Manchurian beans cover 90,000 m/t, U.S. Hawkeyes 25,000 m/t, and the past couple of years Ohio, Indiana, and Michigan, 120,000 to 130,000 m/t. The balance comes from the domestic Japanese crop. They have no hilum requirement, but prefer Hawkeyes.

"All three products, curd, sauce and paste, are protein products. Therefore, their most critical requirement is a high content of water soluble protein. A clue as to why the Manchurian beans are so highly regarded can be seen in the average grade factors of receipts of Ohio/Indiana/Michigan reported by food manufacturers in Japan (see table above).

"Manchurian beans are largely hand harvested and handled and consequently low in f.m. [foreign matter]. The higher U.S. nitrogen content is preferred, but the Manchurian beans have another factor going for them. They trade at a $4 to $6 m/t discount to U.S. beans delivered in Japan.

"The Japanese buyers realize that weather during the maturing season and at harvest time affects quality, but their buying programs are based on comparisons. This year's lower protein and higher damage in the Ohio/Indiana/Michigan area has lost some markets for those origins, diverting buyers to special varieties in other areas even at premiums.

Constant Change: I would like to be able to give you the relative value that the Japanese food trade places on the various items we have been discussing, but it is a constantly changing premium as the quality factors of the alternative choices change. Likewise, premiums vary at certain times of the year and as the relationship of Gulf ocean freight changes relative to Great Lakes ocean freight.

"The Ohio/Indiana/Michigan beans are usually shipped on liner freight which trades at higher prices than large bulk self-trimmers, normally used to ship the ords. In 1966, the quality of O/I/M beans was very good and narrowed the

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spread to recleaned special variety beans to 100 a bushel. This past year with poor quality O/I/M, the spread has been as wide as 30¢ a bushel in Japan.

"Of one thing we can be sure–the search for the answer to the problem at the lowest premium to ords will continue. Japan takes about 250,000 m.t. of soybeans from Manchuria yearly. As indicated earlier, 150,000 m.t. of that quantity are earmarked for the miso trade, 90,000 t. for soy curd or tofu, and the balance are crushed. If we want that market we have to produce and ship a competitive product and be willing to meet the price. The other overseas customer we have in Japan, Europe and other areas of the world is the processor who services the mixed feed industry with soybean meal and the margarine, shortening and salad oil manufactured with soybean oil. Minor quantities of oil go to the technical trade, but primarily it's a food oil.

"Here again we have various categories of customers. Some have the flexibility in their operation to allow them to choose the oilseed available in world markets that shows the best crushing margin–that is, the highest gross monetary return from the sales of the two products manufactured from a ton of raw material relative to the cost of the new material. Among their choices are soybeans, rapeseed, flax, copra, cottonseed, groundnut seed, sunflowerseed and others of lesser importance.

"In earlier years much of the capacity of Europe and Japan was of such a switch nature. In later years, as the dramatic growth of the soybean crop took place in the U.S., more and more processors worldwide built and expanded plants designed to process soybeans only. They bet on the availability of year-around supplies at prices competitive with competing oilseeds.

"Cadillac of Quality: Soybeans had other factors going for them–a low oil content relative to other oilseeds during a period when many areas of the world were fast moving from oil deficit to oil surplus. However, the biggest factor was the gain in nutritional knowledge and feeding technology which resulted in the acceptance of soybean meal as the Cadillac of quality in world protein markets. This corresponded with a period of rapidly expanding mixed feed business in the U.S., Europe and Japan.

"Until recently, U.S. soybeans have warranted the faith of those who counted on their competitive position. They were becoming a larger and larger percentage of total available world oilseed supplies until they became the dominant crop–last year 36%.

"Pleasing our overseas customers is of vital importance to us as they buy about 40% of the annual disappearance of the crop. In the current situation of depressed oil and meal prices, both in Europe and Japan, you can imagine how a foreign processor, who is limited to soybeans, which to him are artificially high-government-support priced, and is facing the competition of cheap rapeseed oil, fish oil and sunflowerseed oil, feels. He has been running at a loss and probably feels like Jose Jiminez. Jose put out a phonograph record in which he played the part of the astronaut who was preparing for the first trip to the moon. He was being interviewed and was asked what he planned to do with his time on that trip. He replied, 'Well I don't know–I plan to cry a lot!'

"I guess processors' complaints against U.S. soybeans haven't changed much over the years, aside from the recent complaint that they are not a competitively priced raw material. What a processor wants above all is a raw material that allows him to sell the resulting end products in the market place at prices that leave him a profit after costs. Soybeans have failed to meet that requirement for some time" (Continued). Address: Asst. Vice President, Oil Div., Cargill, Inc.

184. Haymaker, J.N. 1968. Selling soybeans overseas (Continued–Document part II). *Soybean Digest.* Sept. p. 48-51.

• ***Summary:*** (Continued): "Still Complain of FM: We still hear complaints of high foreign material. The Japanese trade say they spent $200,000 in ocean freight last year to move dirt, weed seeds and other unwanted material to Japan. There is the occasional complaint about grades and weights.

"The past several years have shown a declining trend in both oil content and protein content. This is an area of concern. They point to an increase in damage and split content in recent years, as well as increased moisture. There are no complaints in regard to their ready availability.

"Next let's note how the exporter looks at U.S. soybeans. He must look at it as a romantic business, as many times romance is all he gets out of it. It is a highly competitive and risky business. He is asked to sell, and he does sell, new-crop beans even before they are planted. He doesn't know for sure he can make the 2YSB grade–it could be a crop high in damage, while only 3% is allowed in a 2YSB grade.

"One year we failed miserably to make grade due to high field damage during a wet year. Another year it was stinkbug damage. Yet another year it was bicolored beans that gave us a headache.

"In an inverse year, that is when old-crop beans are trading at a premium over new-crop, the exporter can count on all the overseas customers having their ships waiting for the first harvested new-crop beans at places like New Orleans, Destrehan, Lake Charles, Mobile, Pascagoula, Baton Rouge, to mention a few Gulf ports, and Duluth/Superior, Chicago, Toledo, Canadian and Atlantic ports.

"He gambles on the harvest date and prays it doesn't rain. If it rains (and it often does) he is penalized. If it is a wet crop he may be unable to make grade. If it is a dry crop, the beans break up in handling and he suffers severe shrinks in cleaning.

"With Corn Mixed in: He may receive beans with corn

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mixed in, either picked up in country or terminal elevators in the interior or from the fields. This grades as f.m. and can't be cleaned out.

"He is often forced to go short ocean freight because vessel owners don't care to sell freight in positions where his buyers want to buy. He is asked to take large flat price risks as he offers beans overnight. The quantity offered per vessel is increasing so fast and with it goes the increase in the flat price risk. In 1946, the normal vessel size was 9,000 tons. Today we have self-trimming bulk carriers that run 50,000 to 55,000 tons–that's 2 million bushels. A 2¢ market increase overnight would cost him $40,000. But sometimes the market price drops.

"In some cases there are credit risks, foreign exchange risks, collection risks, to name a few others. And if that isn't enough, he is betting against the U.S. Treasury–that is, that the government loan program won't be effective.

"As an example, with the current level of the November futures in Chicago at $2.52, the exporters are bidding $2.54 delivered Gulf. Backed up by a 11½¢ freight rate to an origin in Arkansas and giving the country elevator a 5¢ margin leaves the farmer a price of $2.371/2. He can sell them to the government under the price support program at $2.52 to $2.54, depending on the county in which he resides. The current bid of 161/20 discount to loan price gives the farmer quite an incentive to find storage space and frightens an exporter who is short cash beans. We have mentioned the trend to larger vessels. As they get larger, their earnings potential per day increases and delay costs rise. The current ocean freight market for large bulk carriers is $4.25 free in and out to the vessel per long ton, Gulf to Amsterdam/ Rotterdam. The comparable cost figure for the old 9,000-ton vessel would be $6.75 per long ton. That $2.50-per-long-ton reduction equals 6.690 per bushel. Export elevators have been speeded up to the point where many can load at speeds up to 100,000 bu. per hour. New facilities are being built overseas to speed up the discharge at places like Kawasaki and Chiba in Japan and in Rotterdam, Holland, to name a few. Handling grain at high speeds reduces costs of transportation, but increases the breakage and foreign material.

"Lower barge rates and recent innovation in the rail freight-rate structure have reduced the cost of interior transportation. Larger tow boats that can handle larger tows of larger barges, together with extreme competition within the industry have resulted in a reduction in barge rates by as much as 50%. From Minneapolis to the gulf that is a savings of 6.95¢/bu.

"Competition among the various elevators to load the grain to vessels is keen. Many new export elevators have been built in the last 10 years. In fact, in theory, if every Gulf elevator could turn its house twice a month, there is enough capacity there to load 3¼ to 3½ billion bu. at the gulf alone. Total grain exports from the U.S. were 1.7 billion bu. in calendar 1967.

"Force Modernization: The effect of all the new capacity at the Gulf has been to force modernization and speed up projects at older elevators. The cost of elevating a bushel of grain goes down. Exporters fight for business to keep their facilities busy. That competition lowers elevation costs. We have seen instances when the spread between the price delivered Gulf to free on board vessel has been as low as 1¢/bu. The current new-crop bid is 2 over the Chicago November futures price delivered Gulf and beans have sold as low as 3½ over the November f.o.b. vessel. Several years ago a more nearly normal spread would have been 3¢ to 5¢. Here again the exporter has done his share of cutting costs with the savings ultimately going to the producer or the overseas buyer, or both.

"Every facet of the trade has cut costs, including the producer. We must remember that as highly sophisticated as is U.S. agribusiness (farming plus transportation and handling), we see the emerging competitive oilseed producing countries of the world starting to make progress in the same direction and they will fast narrow the gap.

"Plenty of Competition: To summarize, there is lots of competition the world over for U.S. soybeans and for the products of soybeans to our customer who buys them. Over the past 6 years the growth rate of soybean exports has been about 10% per year of an ever-increasing figure.

"This year we may not exceed last year. The prospects for next year don't look good. There are many theories on how to attack the problem–increase yields, build a better image for soybean oil, lower price supports and others, all of which have merit.

"The transportation industry has spent millions of dollars to lower costs, modernize equipment and to remain competitive. The same is true in the case of elevator facilities. Producers have likewise been concentrating on a program designed to increase yields and reduce costs. State and national government agronomists are at work in behalf of producers.

"Sound programs to make soybeans competitive from a production point of view have been formulated and put into effect.

"I also believe in a program designed to promote all the good qualities of soybeans and their products, directed at buyers and the ultimate consumers, provided the dollars are spent promoting a product that is competitive.

"I believe we must exert all our efforts to see that national policies permit soybeans to compete and do not allow other nations to set up duties, tariffs, levies, taxes, or other 'newly to be dreamed up' restrictive devices that may prevent soybeans and their products from competing."

A small portrait photo shows J.N. Haymaker. Address: Asst. Vice President, Oil Div., Cargill, Inc.

185. *Soybean Digest.* 1968. Grits & flakes: Cargill enters

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field of soy protein foods. Oct. p. 31-32.
• ***Summary:*** "Cargill, Inc., has entered the field of soy protein foods for humans with the operation at Cedar Rapids, Iowa, of a plant for production of soy flour. The flour, obtained from specialty processing of soybean meal, is becoming widely used to supplement diets of undernourished persons and by the baking and meat packing industries. It is also used for pet foods, as a milk replacer for calves and in industrial adhesives.

"Cargill said the flour and grits products from the plant include a wide range of granulations and heat treatments.

"Larry Fogdall and Robert Walker, both of Minneapolis [Minnesota], are in charge of sales."

186. *Soybean Digest.* 1968. Grits and flakes... from the world of soy: Cargill MacMillan of Cargill, Inc. is gone. Dec. p. 40.
• ***Summary:*** "Cargill MacMillan, 68, former president of Cargill, Inc., and a grandson of the founder of the 103-year-old company died at Minneapolis Oct. 16. Mr. MacMillan was a grandson of W.W. Cargill. founder of the firm, and a son of the late John H. MacMillan, Sr., a former Cargill president.

"Mr. MacMillan began working for Cargill in 1923. During his association with Cargill, the company grew from what essentially was a regional grain firm to an international organization merchandising, processing or manufacturing animal feeds, oilseeds, chemicals, paint products, molasses, fish meal, hybrid seedcorn, and mining rock salt." Address: Cargill Building, Minneapolis, Minnesota.

187. Eastman, Whitney H. 1968. The history of the linseed oil industry in the United States. Minneapolis, Minnesota: T.S. Dennison & Co. 277 p. Illust. No index. 24 cm. Sponsored by First Interoceanic Corporation. Foreword by Thomas L. Daniels. Reviewed in Soybean Digest, June 1968, p. 31. [460* ref]
• ***Summary:*** A good, very readable work–with a large bibliography but no documentation of individual sources. All references pertain to flax. Chapter 2, titled "Growth and decline of flaxseed production in the United States along with the rise and fall of the linseed oil processing industry" offers a chronology of early developments concerning linseed oil:

Early colonists brought flaxseed to America, primarily for the production of fiber to be spun and woven into linen cloth. As population increased, there was a growing need for linseed oil at home to use in making paints for buildings and machinery, and for linseed cake as a livestock feed.

1793–The first linseed oil was produced in the USA (p. 18)–the same year the cotton gin was invented. Note: This may also have been the first vegetable oil produced in the USA. Small family-owned processing plants, usually bearing the family name, began to spring up along the Atlantic Seaboard. This new industry followed the westward movement of American civil and the flax crop.

1795–The horizontal hydraulic press is invented; efficient but expensive, it soon comes to be used for making linseed oil (in the early 1800s).

1810–There are now 283 flaxseed processing plants in the USA, with a combined annual capacity of less than 300,000 bushels. About 60% of these plants are located in Pennsylvania. Many of them used hand-turned screw presses (resembling apple cider presses), which were much less efficient than the Dutch (stamper) press or the new horizontal hydraulic press. The movement of flax westward often left East-Coast processors in short supply.

1850–The vertical hydraulic press, invented and patented by Edwin Hills, appears on the market. It is widely used in larger, modern plants until the 1930s.

1860–East Coast linseed processors now feel the competition of inland processors; 26 plants are concentrated in the Miami River Valley near Dayton, Ohio. For many years Ohio was the leading flaxseed producing area in the USA.

1870–Thirty Eastern Seaboard processing plants are still in business, many using imported flaxseed with a higher oil content. 1887–The National Linseed Oil Company is established to consolidate small processors into a so-called Trust to improve processing margins. It ends up controlling about two-thirds of processing capacity, but 21 of its plants were so old and inefficient that they soon had to be dismantled and written off. At this time 70 linseed oil plants are in operation in the USA, with 20 of them in Ohio. During the 1880s many such trusts–but smaller–were formed.

1900–Only 13 Eastern Seaboard processing plants remain in business, six each in New York State and Philadelphia, and one in New Jersey.

1909–Spencer Kellogg and Sons, Inc. builds a large, modern linseed oil processing plant on the Hudson River in Edgewater, New Jersey; it had its own deep-water pier and was equipped with hydraulic presses.

1911–Midland Linseed Products Co., a fast-growing oil processor based in Minneapolis, Minnesota, also builds a large, modern linseed oil plant on the Hudson River in Edgewater, New Jersey; it has 64 hydraulic presses and a deep-water pier.

1912–317 million lb. of linseed oil are produced in the United States.

1922–Archer-Daniels Linseed Co., based in Minneapolis, Minnesota, is the third major company to build a large, modern linseed oil processing plant on the Hudson River in Edgewater, New Jersey; it has 48 hydraulic presses.

1944–Production of linseed oil in the USA reaches an all-time peak of 732 million lb. It is used mostly in paints and varnishes.

Contains an excellent, detailed history of Spencer Kellogg and Sons, Inc. The company, which has headquarters in Buffalo, New York, dates back through 5

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generations of the Kellogg family. The Kellogg name has been prominent in the linseed oil industry longer than any other family, dating back to 1824, only 31 years after the first linseed oil was produced in America.

Spencer Kellogg was the "first linseed oil processor in America to do any serious fundamental research on linseed oil in this country. They built a modern research laboratory at Buffalo, New York, in 1909, and under the able leadership of Dr. Alex Schwarcman, carried on an aggressive program in fundamental research on linseed oil. Dr. Schwarcman received thirty-four United States and Canadian patents over a period extending from 1914 to the present time." The company was sold in 1961 to Textron, Inc. It has since been operated as the Spencer Kellogg Div. of Textron, Inc., a publicly owned corporation.

Also contains a history of Archer-Daniels-Midland Co. (p. 40-), one of the largest linseed oil processors in the industry. Formed under that name in 1923, it has roots going back 130 years. ADM was said to be a bit slow in recognizing the value of research. As late as 1932 ADM's entire technical staff consisted of only a few people, but when the new laboratory was completed the following year, the department was expanded. The list of new products developed through research began to grow rapidly starting in about 1940, so that an increasingly large proportion of ADM's output of linseed oil was sold in refined or chemically processed form.

Chapter 4, titled "The Evolution of Processing Equipment" (p. 107+) gives a good history of the subject. The horizontal hydraulic press, invented in 1795, came into use in the early 1800s. The vertical hydraulic press first appeared on the market in 1850 and was widely used until the 1930s; French Oil Mill Machinery Co. of Piqua, Ohio, dominated the market. The French Oil Mill Machinery Co. made an excellent model. The Spencer Kellogg plant at Edgewater, New Jersey, built in 1909, eventually had 190 hydraulic presses–the largest in the USA. Mechanical screw presses replaced the vertical hydraulic press in the 1930s. The main manufacturer of these presses were V.D. Anderson (Expeller) and French.

"The continuous solvent extraction of oilseeds was first developed in Europe and had been used successfully there for a number of years before the process was used in the United States. The first continuous solvent extraction plant in this country was placed in operation in Chicago [Illinois] in 1934 by Archer-Daniels-Midland Company to operate on soybeans. This plant, like several others of the earlier plants in this country, was designed and built in Europe." Early U.S. manufacturers of continuous solvent extraction equipment were Allis-Chalmers of Milwaukee (Wisconsin), V.D. Anderson of Cleveland (Ohio), French of Piqua, and Blaw-Knox of Pittsburgh (Pennsylvania). Flaxseed, which has a much higher oil content than soybeans, required prepressing by use of the mechanical screw press.

When [in 1960] Honeymead sold their Mankato soybean processing plant to Farmers Union Grain Terminal Association (FUGTA a farmers co-op), the flaxseed prepressing unit was included. Sometime later [in 1961], First Interoceanic Corporation purchased the solvent extraction plant of the Minnesota Linseed Oil Co., and after operating it for a while, resold it to FUGTA.

A review of this book in *Soybean Digest* (June 1968, p. 31) shows a small photo of Whitney Eastman, who started in the vegetable oil processing industry in 1911, and in addition to linseed oil has been associated with the soybean crop and industry since its early beginnings in the USA. "Mr. Eastman has served as vice president of both Archer Daniels Midland and General Mills, Inc. In recent years he has been a director of First Oceanic Corp., which is the largest stockholder of ADM."

188. Eastman, Whitney H. 1968. The Andreas brothers' linseed oil operations (Document part). In: Whitney H. Eastman. 1968. The History of the Linseed Oil Industry in the United States. Minneapolis, Minnesota: T.S. Dennison & Co. 277 p. See p. 53-54. [460* ref]

• ***Summary:*** During the 1930s in Iowa, R.P. [Reuben Peter] Andreas built several small soybean processing plants and feed plants. At an early age, the Andreas boys [his sons] began to learn the intricacies of the buying and processing of oilseeds.

Four of his sons–Albert, Dwayne, Lowell, and Glenn–devoted themselves to linseed oil processing and refining. Albert was the first of the four brothers to take an interest in this industry.

In 1937 Joseph Sinaiko established The Northwest Linseed Company. He built a linseed oil processing plant in Fridley (a north suburb of Minneapolis) and installed four French mechanical screw presses. At a later date he installed three French screw presses. Note: Ray Lindquist, Jr. (personal communication 10 July 2003) says that the Northwest Linseed Co. was in Minneapolis, not in Fridley. He does not know who founded it, but Albert Andreas later owned it. Talk with Sally Dogon, Joseph Sinaiko's daughter. 2003. Oct. 25. Sally's husband recalls clearly that Joe Sinaiko established The Northwest Linseed Company near Minneapolis.

In 1940 Albert Andreas purchased financial control of the company and in 1948 sold the plant to Cargill, Inc. None of the other Andreas brothers were involved in this venture with Albert. Glenn Andreas went into banking.

Meanwhile, Dwayne and Lowell Andreas had become involved with soybean processing in Iowa and Minnesota. In 1945 Dwayne became associated with Cargill, Inc. at its headquarters in Minneapolis. That same year he was elected assistant vice president, and in 1946 a vice president. He was hired by Cargill to develop its vegetable oil processing and refining division to include flaxseed processing. In 1952 he

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"retired" from Cargill to be able to devote more attention to Honeymead Products Company, a rapidly expanding business owned by Dwayne and his brother, Lowell. For a while, Honeymead was operating one of the largest soybean processing plants in the USA–or the world. In 1958 Honeymead added a prepressing auxiliary unit ahead of its continuous solvent extraction unit in order to be able to process flaxseed as well as soybeans.

In 1960 the Andreas brothers sold the Honeymead plant to Farmers Union Grain Terminal Association (GTA)–a farmers' cooperative. For a while, Whitney Eastman served as a director of Honeymead along with Dwayne and Lowell.

"At the time of the sale of the Honeymead plant to GTA, the Andreas group organized Interoceanic Industries, Inc.–later changed to First Interoceanic Corporation–to act as a family investment corporation for their far-flung activities. Interoceanic then entered into a management contract with GTA to manage the operations of Honeymead. This management contract continued until 1967.

"In 1961, Interoceanic purchased Minnesota Linseed Oil Company–jointly owned by National Lead Co. and Minnesota Linseed Oil Paint Company. Interoceanic operated this large, modern, continuous solvent extraction plant and refinery located in Fridley–a suburb of Minneapolis–until 1964, when Interoceanic sold the Minnesota Linseed Oil Company to GTA. Interoceanic entered into a management contract with GTA to manage their linseed oil operations. This arrangement continued from 1964 to 1967.

"The two Andreas brothers, Dwayne and Lowell, and the author [Eastman] are still serving as directors of First Interoceanic Corporation.

"In 1966 Interoceanic purchased a large block of stock of Archer-Daniels-Midland Company, becoming the largest stockholder." That same year Dwayne was elected to the Board of Directors and the company's Executive Committee. Lowell was elected to the Board of Directors and a member of the executive and finance committees. In 1967 he was elected executive vice president. On 2 Feb. 1968 he was elected president.

189. *Feedstuffs.* 1969. Cargill: $2 billion-a-year ag products firm discloses scope of U.S., international operations. Nov. 1. • ***Summary:*** This detailed, 2-page article begins: "Minneapolis–Cargill, Inc., this week disclosed publicly for the first time that its sales exceeded $2 billion during each of the past four years and that sales in 1968-69 declined nearly $200 million from the previous year. Company earnings have averaged better than $14 million in each of those years.

"Cargill board chairman Erwin E. Kelm revealed these and other financial and operating details about the privately-held agricultural products firm in a speech before the Harvard Business School Club of the Twin Cities. In accepting the club's 'honored company' citation, he told more about the 104-year-old company than had ever been reported in public. He also discounted any thought that Cargill might become a publicly-owned corporation.

"Cargill's sales of $2 billion would place it alongside the top 30 or 40 U.S. industrial corporations which are publicly held.

"Cargill is known as the world's leading grain merchant and largest U.S. processor of vegetable oils. In addition, Kelm told the Minneapolis audience, Cargill believes itself to be the second largest producer of animal feeds in the world, with 35 U.S. feed plants and more than 20 overseas. Its commercial trade contacts extend to every major part of the world except Mainland China.

"Kelm explained that Cargill has developed its own individual set of characteristics, with private ownership the dominating factor. He added that Cargill has 'no plans whatsoever of going public.'"

Also: Cargill employs 9,000 persons worldwide.

"Although parts of Cargill's business exert a cyclical effect on earnings, diversification has begun to have a steadying influence, Kelm reported. Despite the cycles, the company's net worth has doubled every seven or eight years and today surpasses $150 million. Working capital is close to $90 million and long term debt is about $55 million."

"Company sales abroad have contributed to the U.S. balance of payments as much as $1 billion in single year–the second largest of all U.S. corporations."

"Oilseed Processing: In the U.S. and Europe, Cargill operates 18 processing plants that handle soybeans, copra, flax, sunflower and safflower. A vegetable oil group was begun two years ago to apply its processing experience to wet corn milling. It now turns out corn syrup and starch products for use in the food, paper, textile and other industries.

"Cargill is continuing is expand and shift its plant capacity as oilseed production patterns change. It will soon open a new plant in France, the third in Europe. All three will process soybeans exported from the U.S.

"In recent years the company has begun to reline the oil and now bottles it in France for grocery sale.

"Animal Feed Production: Kelm said that Cargill is a growing factor in the production of beef, pork. poultry, eggs and milk on four continents. It plays 'a basic role' in development of improved breeding stock, computer formulation of animal feeds, devising management systems for growing, and actual production and processing of broilers, eggs and turkeys.

"Most of the U.S. feed plants produce under the Nutrena label. (Recently, the company acquired Hales & Hunter Co. which has its own feed brand.) Cargill is also rapidly expanding feed plants in Europe, Latin America and Asia."

"In large measure, Cargill's growth is related to its progress in transportation," Kelm added.

"Overseas Operations: Kelm pointed out that Cargill's

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operations overseas were almost nonexistent 15 years ago [i.e., in about 1954]. Today those operations claim 27% of the total invested capital and are growing rapidly."

"When named president in 1960. Kelm was the first reason outside the Cargill and MacMillan families to hold that post. Now 58 years old. Kelm has served as chief executive officer and chairman of the board since 1968."

190. **Product Name:** Toasted, and Untoasted Soy Flour, and Grits; Defatted, and Lecithinated Soy Flours.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Cargill Building, Minneapolis, MN 55402.
Date of Introduction: 1969.
New Product–Documentation: *Soybean Digest Blue Book.* 1969. p. 113. Listing continues into the 1980s.

191. National Soybean Processors Assoc. 1969. Year book & trading rules–1968-1969. Washington, DC: National Soybean Processors Association. 64 p. 23 cm. Spiral bound.
• ***Summary:*** Contents: Constitution and by-laws (As amended Aug. 6, 1968). Officers and directors. Names of members. List of standing committees. Trading rules on soybean meal. Appendix to trading rules on soybean meal: Official methods of analysis (moisture, protein, crude fiber, oil {only method numbers listed}, sampling of soybean meal {automatic sampler, probe sampler}). Trading rules on soybean oil. Definitions of grade and quality of export oils. Tentative soybean lecithin specifications. Appendix to trading rules on soybean oil: Uniform sales contract, grading soybean oil for color (N.S.P.A. tentative method), methods of analysis (A.O.C.S. official methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses; soap stock, acidulated soap stock and tank bottoms (only method numbers listed). Foreign trade definitions (for information purposes only). Address: 1225 Connecticut Ave., N.W., Suite 314, Washington, DC 20036. Phone: 202/659-4610.

192. *Soybean Digest.* 1970. Cargill: Major supplier to the food industry. Feb. p. 50.
• ***Summary:*** "From the speech of Erwin J. Kelm, chairman, Cargill Inc., at annual distinguished company dinner of Harvard Business School Club, Minneapolis, Minnesota."

"In each of the past 4 years, Cargill's sales have exceeded $2 billion [$2,000 million]. It is one of the world's largest privately held companies. Cargill has 18 processing plants in the U.S. and Europe operating on soybeans, flax, copra, sunflower, and safflower. It will soon open a large new plant in France, the third in Europe–all making use of U.S. soybeans. In recent years Cargill has begun to refine soybean oil which it now bottles in France for grocery sale.

"At least 80% of refined vegetable oil goes into edible products. Cargill is also a major supplier to the resins, paints, and protective coatings industry, which it entered 15 to 20 years ago, building largely on chemical modification of its own vegetable oils."

A photo shows the Cargill soybean plant in Amsterdam, opened in 1968.

193. *Wall Street Journal.* 1970. Cargill, 3 French firms to build processing unit for soybeans in France. Feb.
• ***Summary:*** The companies will build a major soybean processing plant at St. Nazaire, France. The group, named Industrie du Soja S.A. will be half owned by Cargill, "with the remainder held by Provini, a leading animal feed producer, Synoxy, a chemical company with a plant near St. Nazaire, and Soprorga, a Kuhlmann-Rousselot company."

Cargill, a leading oilseed processor, has plants in the U.S., Spain, and the Netherlands.

194. *Soybean Digest.* 1970. Cargill opens a major soybean plant in France [Soja France S.A.]. March. p. 54.
• ***Summary:*** A new soybean crushing plant has begun full-scale operation at St. Nazaire, France. Cargill Inc. of Minneapolis, Minnesota, is a partner in the project. "The plant is operated by Soja France S.A.–a partnership of Industrie du Soja, S.A., in which Cargill has controlling interest, and Eurosoya, S.A., a French firm.

"The new plant with a daily input capacity of 1,200 metric tons, is processing U.S. grown soybeans into high-protein meal for France's animal agriculture and crude soy oil for distribution throughout Europe. The plant is operated by Soja France S.A.–a partnership of Industrie du Soja, S.A., in which Cargill has controlling interest, and Eurosoya, S.A., a French firm.

"The plant is located on 6.5 acres on the Quai Pereire. A unique feature is its use of converted World War II submarine pens for the storage of raw soybeans. The plant receives soybeans from ocean ships and distributes processed products by rail, truck, and coastal vessels.

"Cargill also operates soybean plants in the U.S., Spain, and the Netherlands, where a large-scale plant expansion is underway."

195. *Soybean Digest.* 1970. Cargill plans soy plant in Carolina [Fayetteville, NC]. April. p. 53.
• ***Summary:*** "Cargill Inc., international farm products firm headquartered in Minneapolis, will build a major soybean processing plant at Fayetteville, North Carolina, the company has announced.

"Construction is to begin immediately. The new plant will have initial capacity to process 1,000 tons (33,000 bu.) of soybeans per day. Storage units for soybeans will be ready for the 1970 harvest and the processing unit will be completed in the spring of 1971. The company said the plant is designed to be expanded to 2,000 tons later.

"Cargill said that one factor deciding its location in

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Fayetteville is the rapidly expanding production of soybeans in the coastal area of North Carolina. Another is the steadily increasing demand for the protein meal from soybeans by the poultry and livestock industry of the region.

"Cargill Inc. will nearly double the capacity of its soybean processing plant in Memphis, Tennessee, by adding the processing unit from its shutdown plant in Redfield, Iowa.

"James Spicola, head of the vegetable oil division, said crews at Redfield have begun to dismantle the Rotocel extractor and auxiliary equipment that will be erected beside the Memphis facility on President's Island this spring.

"The expansion will boost the Memphis plant's processing capacity from 50,000 to 90,000 bushels/day.

"Three plant superintendents in Cargill Inc.'s vegetable oil division have new responsibility, according to an announcement by James R. Spicola, vice president and head of the division.

"Uli Sander, superintendent of the company's copra processing plant in San Francisco, will become superintendent of soybean processing at Port Cargill near Savage, Minnesota.

"Dallas Rahn, soybean oil refinery superintendent in Des Moines, will become superintendent of the San Francisco plant.

"Ronald Rogers, on completion of a special engineering project at Wichita, will become the new superintendent of the Des Moines refinery."

196. *Cedar Rapids Gazette* (*Iowa*). 1970. Groundbreaking next week for Corn Sweeteners. May 20.
• ***Summary:*** Corn Sweeteners, Inc., a newly formed company, will break ground next week for a fully-automated corn syrup plant at 1350 Waconia avenue SW. Leslie C. Liabo [pronounced LAI-bo], president of the new company, said the total cost of the project will exceed $5 million. The plant will cover 60,000 square feet and have a capacity of 1,400 tanks cars per year of corn syrup. Liabo was previously general manager of Cargill's Corn Starch and Syrup Plant–a position from which he resigned in February.

Note: Les Liabo used to work for Joe Sinaiko.

197. *Cedar Rapids Gazette* (*Iowa*). 1970. Industrial groundbreaking (Photo caption). May 28. p. 4A.
• ***Summary:*** This photo shows three men, dressed in coats and ties, standing in a field of dirt. From left: Mayor Donald Canney, breaking ground with a shovel. Arling Langhurst, vice-president of the new company, Corn Sweeteners, Inc., in charge of engineering. Leslie C. Liabo [pronounced LAI-bo], company president. Ground was broken on the morning of May 28 in Cedar Rapids. The plant is expected to be operational within 15 months.

Note from Sally Dogon, daughter of Joe Sinaiko. 2000. Dec. 5. Joe signed an agreement with Cargill not to start a competing business, yet she is sure he had some input. Les Liabo worked for Joe for years.

198. *Soybean Digest.* 1970. Grits and flakes... from the world of soy: Cargill Soya Industrie of Amsterdam... May. p. 90.
• ***Summary:*** "... has announced plans to raise the capacity of its plant from 300,000 to 500,000 metric tons yearly, the project to be completed by midyear. About 75% of the plant's production moves into exports with the most important markets Germany, France, the United Kingdom, and Scandinavia."

199. Witham, W.C. 1970. Re: Memorandum–Three items of information regarding soybean operations. Letter to F.R. Senti, Deputy Administrator, USDA, ARS, NCIUR [Nutrition, Consumer, and Industrial Use Research], Washington, DC, Aug. 27. 1 p. Typed, without signature (carbon copy).
• ***Summary:*** While at the annual meeting of the American Soybean Association, Dr. Cowan was given the following information. (1) Cargill is constructing a plant to manufacture textured soy proteins from soy flour at their facility in Cedar Rapids, Iowa. These products will be similar to those produced by Swift and ADM. Staley also announced its intention to make such products, but may be delayed because of a strike that is now 4 weeks old.

(2) Land O'Lakes has purchased the Felco operations, a cooperative in Iowa with one division operating a 700- to 1000-ton a day soybean processing plant. Note: This is the earliest document seen (March 2008) that mentions "Land O'Lakes" in connection with soybeans, or that mentions Felco (in any connection).

(3) "The General Mills' plant at Cedar Rapids has gone on-stream for the manufacture of Bac*Os. They expect to be making a complete line of Bontrae products shortly before or just after Labor Day [the first Monday in September]. The latter will be sold to institutions, restaurants, etc. initially." Address: Acting Director of Div., Northern Regional Research Lab., Peoria, Illinois.

200. Spicola, James R. 1970. Fifty years of soybean marketing. *Soybean Digest.* Aug. p. 62-64.
• ***Summary:*** "It has been commonplace lately to refer to soybeans as the 'Cinderella' crop. If by that is meant sudden discovery and overnight 'belle-of-the-ball' status, the term is more popular than accurate.

"The recorded history of the soybean goes back to 2838 B.C.

"Its present wide acceptance in the U.S. and world markets came painfully and slowly.

"As early as 1804 a Pennsylvanian named James Mease advocated the cultivation of soybeans and development of markets. But it didn't happen. The U.S. Department of Agriculture undertook some initial soybean research projects

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in 1898 and recorded the first soybean statistic in 1919 with a scant report that there had been 99,000 acres of U.S. farmland planted in beans during that year.

"It wasn't until 1924 that the Department reported acres, yields, and production figures on soybeans grown for beans, as they had long done for other crops.

"In the early stages of commercial soybean production in the U.S. the marketing system was basic and quite simple, far different from the highly competitive, price-sensitive marketplace we know today. Buyers, primarily processors, contracted with producers to grow a specific acreage. The buyer would guarantee a price for the total production on that acreage prior to planting time. When the crop was harvested, whatever the farmer produced was delivered to the buyer and payment was made at the contract price.

"This marketing system gave producers confidence to plant the new crop, to experiment and to concentrate on production with no concern whatever for marketing problems. It provided the buyer with a reasonably well guaranteed source of supply at an agreed price, enabling him to plan and develop markets for the products.

"Under the contract production system, markets for products were developed and acreage expanded.

"Contract buying no longer needed: By the mid-thirties, production had grown to 49 million bushels and it became clear that the industry had reached a point when the contract market system was no longer needed to stimulate production and that soybean producers wanted to expand their horizons, to open their crop to the opportunities that a broad competitive marketplace could provide. The industry had reached an important point in its maturity.

"Even so, the typical country elevator had space for perhaps 20,000 bushels of all grains and served a radius of 5 to 10 miles. They reshipped beans to pioneer processors in small lots and on irregular schedules.

"Then a soybean futures market was established by the Chicago Board of Trade in 1936. Country elevators and grain merchandising firms began to compete aggressively for the soybean crop.

"World War II marked the end of the beginning. Stimulated by wartime restrictions on imports of oils and proteins from traditional world sources, soybean production expanded rapidly. Production increased from 78 million bushels in 1940 to 201 million bushels in 1946.

"Many in the industry expressed fearful concern that with peace would come a severe restriction of demand for soybean products. This fear proved to be ill-founded, as it soon became clear that soybean products had firmly established their favor with consumers and, as we have seen so happily, the greatest growth was still to come.

"Until 1948, prices received by producers for their soybeans were determined basically by meal and oil demand conditions within the U.S. That demand for products, converted to raw soybean price values, was transmitted back through the market system to farm price values. During 1948-49, there began a development that was to have long-term beneficial effects, not only for the American soybean farmer, but for U.S. industry and the taxpayer.

"What happened was that the U.S. began to turn the balance from a net importer of oils, proteins, and oilseeds to a net exporter. In 1948-49, 23 million bushels of soybeans were exported, and there was presented to America the opportunity to become a major supplier of edible oil and protein to the world.

"Competition is keen in the export market: As with every opportunity, there comes challenge; the opportunity to serve world markets presented the challenge of competition. Foreign buyers had a wide range of supply sources, and if U.S. farmers were, together, to become a major exporter they would have to prepare to compete vigorously.

"And by that time, the competitive marketing system had developed the capacity to demonstrate its vigor, its creativity, and its ability to serve producers effectively.

"To build sound, growing markets for soybeans and soybean products overseas as well as at home a number of difficult challenges had to be overcome.

"1–Interior handling costs had to be reduced. To this end, large capital investments in faster, larger, more efficient country elevators were required. The 20,000-bushel crib house gave way to the high-speed, 100,000-to-2-million-bushel elevator, equipped with modern drying, cleaning, and conditioning facilities.

"2–Transportation costs had to be reduced. To that end, water movement by barge on the river system was initiated. Trucks increased capacity from 100 bushels to 800 bushels. Railroads, spurred by new competition and encouraged by the ingenuity of grain marketing and processing firms, increased car size, instituted unit shipments and trainload movements of soybeans and soybean products. The results have brought a reduction of about 50% (adjusted for inflation) in the cost of moving soybeans and soy products to domestic consumers and to positions for marketing both beans and products abroad.

"3–Highly efficient handling facilities at ports and processing locations were developed. Export elevators made multimillion-dollar investments to perform the job of transferring soybeans and other grains more efficiently from barges and railcars to ocean vessels. Export elevators now can load ocean vessels at the rate of 100,000 bu/ hour, making possible the most efficient use of modern low-cost ships, many with capacities of more than a million bushels.

"4–Although processing is covered in another article in this issue, it is not possible to review marketing developments without reference to the remarkable technicians who have pushed processing to the fine degree of efficiency that they have. Without that efficiency–that saving of cost between producer and consumer–the entire development of marketing of soybeans would not have been

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possible.

"But it has been possible. The product is good. The quality is there. The need is expanding. The price is right. Soybeans already produce more cash income for the U.S. than any other agricultural product. Push that growth of efficiency in production, processing, and marketing another 50 years and we will have the most fabulous product in America!"

Photos show: (1) An early Cargill elevator in Northern Iowa. (2) "Barge traffic has helped reduce transportation costs." Here we see the barge Capt. W.D. Cargill at Baton Rouge, Louisiana, on the Mississippi River. (3) A portrait photo of James R. Spiccola, vice president and head of the processing and refining division of Cargill, Inc. Address: Vice President, Cargill Inc.

201. Weller, Paul. 1970. Birth of an industry. *Soybean Digest.* Aug. p. 58-59, 61.

• ***Summary:*** A fairly good, brief history of the soybean crushing industry in the USA, and the National Soybean Processors Association. Soybeans had been grown in America "since about 1804. Civil War soldiers carried them as 'coffee berries,' using them to brew 'coffee' when the real product became scarce."

The first soybeans in America "were likely crushed as early as 1910, among the Chinese in California. Oriental emigrants were then importing soybeans from China and Manchuria, and crudely crushing them for cooking oil. These early efforts were followed by commercial activity among several North Carolina cottonseed mills. In 1915, when cottonseed became scarce, the mills substituted locally grown soybeans."

"On a warm fall day [Sept. 30] in 1922, A.E. Staley Sr. pulled a master switch on the nation's first commercial soybean processing plant. He helped inaugurate a new industry offering, for the first time, a key commercial market for America's soybean crop. The place was Decatur, Illinois..."

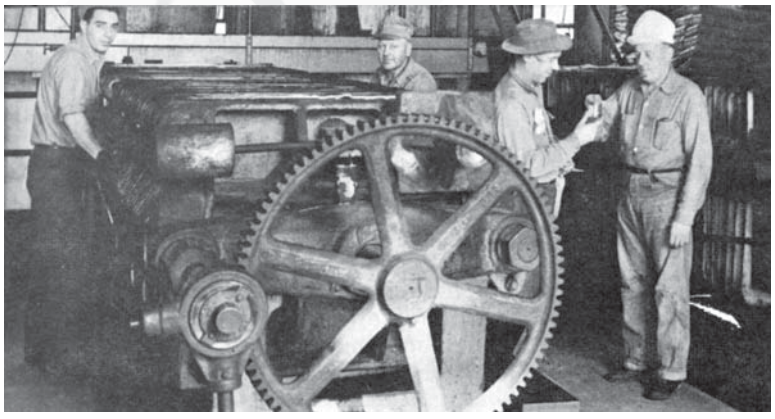
"Role of the processors: Several commercial leaders saw the promise of soybeans by 1920. They also saw a need for expanded markets, if farmers were to receive a fair return for their crop. Acreage was expanding fast–Illinois had 16,000 acres in 1919, with Indiana having only several hundred. But by 1922, this total had doubled, and farmers were rushing to plant more. A.E. Staley Sr. started with his processing mill at Decatur. The following year, Eugene D. Funk Sr. set up the nation's second commercial processing plant at Bloomington, Illinois. Funk, a pioneer seed producer and an organizer of the American Soybean Assn., recognized that domestic processing operations would be necessary to move the fast-growing soybean crop–by then estimated at over a half-million acres.

"These early processors faced seemingly insurmountable odds. It was nearly impossible to obtain a steady supply of soybeans to maintain their plants. It was just as difficult to dispose of soybean oil meal and flour. No one would buy it in 1924, and few persons would accept it as a gift. It was even difficult to sell the domestically produced soybean oil, because buyers considered it grossly inferior to imported oils.

"The answer lay in extensive programs of education, and the early processors accepted this responsibility. Working closely with state universities and extension services, they helped develop bulletins to help farmers produce more soybeans. Marketing teams fanned out to 'sell' U.S. soybean oil and meal products.

"One of the most unique projects ever attempted was a special Soybean Exhibit Train, supplied by the Illinois Central Railroad. Soybean processors and USDA extension personnel equipped and staffed the train to tell the soybean story to the nation. In 21 days [during 1927], the six-car soybean train traveled 2,478 miles, to 105 towns across America. Nearly 34,000 persons toured its varied soybean product exhibits.

"Formation of NSPA: The soybean processing industry was expanding enough by 1930 to warrant a national association of processing firms. A committee was set up under the leadership of Whitney H. Eastman of Archer Daniels Midland Co. Eastman called an organizational meeting for May 21, 1930, at Chicago's downtown City Club. Twelve processing firms were represented, including A.E. Staley Mfg. Co.; Archer Daniels Midland Co.; Allied Mills Inc.; Funk Bros. Seed Co.; and Spencer Kellogg & Sons.



"The meeting gave birth to the National Soybean Oil Manufacturers Assn., forerunner of today's National Soybean Processors Assn. Eastman, now retired in suburban Minneapolis, recalls the original Association objectives: "To promote in the industry a mutual confidence and a high standard of business ethics; to eliminate trade abuses; to promote sound economic business customs and practices; to foster wholesome competition; to provide ultimately for individual efficient business management operating independently and thus generally to promote the

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service of the industry in the public welfare."

"Other industry benefits came out of the formation of a processors' association. Prior to this time, prices for soybeans were largely determined by demand and supply for soybean seed. Establishment of new markets for processed products and the rapid expansion of soybean acreage due to new demand changed this structure. During the early 1930's, prices were based on demand for oil and meal, and generally improved as demand increased. At one point, the price per bushel increased from 60¢ to $1.23.

"NSPA formed a variety of committees to service the burgeoning industry. There was a research and trade promotion group, a soybean grades and contract group, traffic and transportation group, as well as committees on statistics and industry liaison. These formed the nucleus of NSPA's current slate of 13 specialized committees.

During NSPA's first 25 years, U.S. soybean acreage jumped from 3,473,000 acres yielding 13,929,000 bushels– to 21 million acres yielding a crop of 457 million bushels. By 1956, soybeans were second only to corn in cash farm income on the nation's farms.

"It was during this first 25 years that most of today's major soybean processors entered the business. Central Soya Co. shipped its first load of soybean oil on December 8, 1934, from its plant at Decatur, Indiana. Swift & Co. built its first expeller soybean mill at Champaign, Illinois, in 1937, followed by a second mill at Des Moines, Iowa in 1939. At about the same time, Quincy Soybean Co. was formed at Quincy, Illinois, Cargill Inc. entered the field in 1943 at Minneapolis [Minnesota], and other major processors followed quickly the industry's challenge."

Photos show: (1) The Elizabeth City Oil & Fertilizer Co. in North Carolina, generally believed to have been the first to process U.S. grown soybeans. A test run was made on 10,000 bushels in Dec. 1915. (2) The soybean crushing plant in the Funk Bros. Seed Co., Bloomington, Illinois, installed in 1924. (3) The Archer Daniels Midland Co. solvent extraction plant in Chicago, Illinois, in about 1946. (4) One group of the nearly 34,000 people visiting the "Soybean Special" train in 1927. Inside its six cars was the story of the soybean industry as it existed at that time. Address: National Soybean Processors Assn.

202. Cargill, Processing and Refining Division. 1970. Handle with care! (Ad). *Soybean Digest.* Sept. p. 6.
• ***Summary:*** On the right side of this full page ad is a hammer, seemingly in motion, about to smash a single soybean.

On the left side we read: That's just what Cargill does. We buy... handle... store... and transport soybeans. We break them apart, Then build them up to marketable end products... meal, grits, flour, oil for example.

"We find and develop new uses for soybeans. We also find and develop new markets and expand established outlets... foreign and domestic.

"For your soybeans... our plans call for continued aggressive expansion of our total soybean research, processing and marketing operations."

In the lower left are listed Cargill's "Plant locations: "Port Cargill, Minnesota. Cedar Rapids, Iowa. Washington, Iowa. Memphis, Tennessee. Chicago, Illinois. Ft. Dodge, Iowa. Sioux City, Iowa. Norfolk, Virginia. Des Moines, Iowa. Wichita, Kansas. Gainesville, Georgia. San Francisco, California. Fayetteville, North Carolina. Tarragona, Spain. Amsterdam, Holland. St. Nazaire, France.

In the lower left is the round Cargill logo. Address: [Minneapolis, Minnesota].

203. *Food Processing* (*Chicago*). 1970. Protein adds nutritional 'punch' to snacks. Autumn. p. F6-F7. Foods of Tomorrow section.
• ***Summary:*** The section titled "Soy protein" notes: TVP Smoky Chiplet is a high-protein snack made by Archer Daniels Midland Co. (Decatur, Illinois). Soy specialties as ingredients for high protein snack foods are available from Cargill Inc. (Minneapolis, Minnesota). For soy protein isolate ingredients contact Ralston Purina Co. (St. Louis, Missouri). For soy flour information contact A.E. Staley Mfg. Co. (Decatur, Illinois). Three brochures about soy protein, soybean oil, and soybean processing are available from the National Soybean Processors Assoc. (1225 Connecticut Ave., N.W., Washington, DC). "Soy protein concentrate for snack formulation is available from Swift Chemical Co." (Oak Brook, Illinois).

204. *Soybean Digest.* 1970. Grits and flakes... from the world of soy: Cargill promotes three executives. Dec. p. 28.
• ***Summary:*** "Three top executives of Cargill Inc. were moved up by action of the board of directors.

"H. Robert Diercks was promoted from executive vice president to vice chairman of the board, and M.D. McVay and Whitney MacMillan both from group vice president to executive vice president. All will retain their present executive responsibilities.

"Sales of Cargill linseed oil, technical soybean oil, and industrial lecithin have been assigned to company offices at Morristown, New Jersey, and Northbrook, Illinois.

"Edible soybean oil sales will be coordinated at Minneapolis by Jack Yarger, with the exception of Chicago area sales which will be handled at Northbrook.

"A $100,000 project to improve air quality is underway at the Cargill soybean processing plant at Cedar Rapids, Iowa, according to manager William Matson.

"Dust-control devices scheduled for completion about the end of this year include a new soybean drier that is among the cleanest in the industry."

Small portrait photos show M.D. McVay and Whitney MacMillan.

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205. *Soybean Digest.* 1970. Grits and flakes... from the world of soy: Newest and largest soybean processing plant in the Carolinas was opened at Fayetteville, N.C., by Cargill, Inc. executives. Dec. p. 28.
• ***Summary:*** "The 880,000-bushel addition will bring the plant's storage capacity to 4 million. Cargill officials said the plant, which now can process 10 million to 12 million bushels a year, will require a 50% increase in soybean production in the area or else midwestern soybeans will have to be shipped in to keep it running. At recent dedication ceremonies, from left, Erwin E. Kelm, Cargill chairman; James A. Graham, N.C. Commissioner of Agriculture; and Flint Harding, Cargill's manager at Fayetteville."

206. *Soybean Digest.* 1970. Grits and flakes... from the world of soy: Cargill Soja Industrie N.V.,... Dec. p. 28.
• ***Summary:*** "... a soybean processing plant in Amsterdam, the Netherlands, announces the appointments of A. Blankestijn to general manager; R. van Giffin to commercial director; and D.A. Rodman to technical director."

207. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Fayetteville, North Carolina.
Date of Introduction: 1970.
Ingredients: Soybeans.
New Product–Documentation: *J. of the American Oil Chemists' Soc.* 1985. "Soy pioneer bows out, others grow bigger." March. p. 474, 476. Cargill has a soybean crushing plant in Fayetteville, North Carolina.

Lauser, Greg C. 1982. "History of Cargill's involvement in the soybean processing industry." Minneapolis, Minnesota. 5 p. Unpublished typescript. March 15. Courtesy Cargill, Inc. In 1970 Cargill built the Fayetteville, North Carolina, crushing plant; a refinery was added in 1976.

208. Chen, Steve. 1971. Outlook for the Taiwan soy industry. *Soybean Digest.* May. p. 37-39.
• ***Summary:*** "I. General economic situation: The Taiwan economy continued its rapid growth in calendar year 1970, with the GNP reaching U.S. $5.445 billion, a 10.1% increase over 1969.

"Industrial production increased 16.8%, accounting for 32% of GNP. Agricultural production increased only 4% in 1970, accounting for only 19.2% of GNP.

"Wholesale prices increased 2.93% and retail prices about 3.75%. Unemployment is officially estimated at less than 1%.

"Population increased at a rate of less than 3%, to 14.6 million, while per capita income reached U.S. $292, a 7.8% increase over 1969.

"Taiwan exports increased 39.6% in 1970, to reach U.S. $1.551 million, equivalent to 28% of the GNP. At the same time imports are also growing and reached U.S. $1.520 million, a 26.2% increase over 1969. As a result, the Republic of China [Taiwan] enjoyed its first favorable balance of trade since 1964.

"Continued rapid industrialization, a relatively stable price, and expanding exports should ensure another year of increasing consumer incomes in 1971.

"II. Soybean production is at a standstill (see figure and table): Taiwan produced 148,000 metric tons (mt) of oilseeds in 1970, of which soybeans (65,000 mt) and peanuts (shelled, 79,000 mt) account for 44% and 53% respectively of the total oilseeds production. The production of sesame and rapeseed is only 2,000 mt each, or 3% of total oilseeds produced in 1970.

"In spite of the government's offer of loans to Taiwan soybean growers in 1970, soybean production actually decreased 3% in comparison to 1969. The average yield of soybeans is 22 bu/a.

Peanut production increased 12% in 1970. This has come more from increased yields rather than from added acreage.

"Domestic production of soybeans and other oilseeds is not expected to increase any substantial amount, because of the limited land available and high production costs (fertilizer, labor, etc).

"III. Soybean imports are growing. In calendar year 1970, the Taiwan Board of Foreign Trade issued import licenses for 708,219 mt (26 million bushels) of soybeans at a cost of U.S. $81 million. However, only about 600,000 mt (22 million bushels) were actually imported during CY 1970.

"The importation of soybeans into Taiwan was decontrolled in 1967. Soybean imports have steadily increased since. The rate of increase for 1968 and 1969 was 17% each year. And soybean imports in 1970 were increased by 27% over 1969. These were 100% U.S. soybeans. It is predicted that imports of soybeans will be about 700,000 mt (or 26 million bushels) for 1971. We hope to reach 1 million mt (or 37 million bushels) by 1975.

"Taiwan imports about 90% of its total needs of soybeans and feed grains. Domestic production only provides 10% of total supply.

"The major import competition for U.S. soybeans is Canadian rapeseed, Brazilian soybeans, and coconut and palm oils.

"IV. Soybean processing expanding: Soybean processing and its related industries are expanding rapidly and changing to larger-scale operations in order to be more efficient in operation, to reduce the cost of production, and further improve the quality of their products. Currently, most equipment is made locally. The average capacity for a solvent extractor is 45 mt/day.

"However, growing companies are using good-quality foreign-made equipment with capacity in the range of 200-300 mt/day. Several soybean crushers are expanding their

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facilities and will be operational in the fall of 1971.

"Kaohsiung harbor completed a 40,000 mt silo last fall. The first soybean silo in Taiwan was constructed recently by China Soybean Ind. Co. Ltd., with a capacity of 4,000 mt for soybeans and 200 mt for soybean meal.

"Feed mills are also expanding and most of them are using Swiss equipment. Chia Fha Ind. Co. has just completed a new feed mill of 10,000 mt/month. Taiwan Cargill Co. will complete a 10,000 mt/month feed mill in October 1971, and President Enterprise Corp. will increase their production capacity from the present 5,000 to 15,000 mt/month in the fall of 1971. All Sincere Co. recently completed a 7,200 mt/month feed mill, and several other feed mills are also under expansion.

"The livestock and poultry industries are growing at an average rate of 10%/ year. The government intends to double livestock production within 10 years, i.e. from 3.6 million hogs to 7.3 million hogs, and from 67,000 mt of poultry meat to 123,000 mt, from 1 billion eggs to 1.9 billion eggs, from 14,966 mt of milk to 96,082 mt.

"The current requirement of 3 million tons of feed will increase to 6 million tons within 10 years. A continuous growth in demand for feed protein is anticipated. We hope to supply the major share of protein with U.S. soybeans.

"V. Appreciation for local cooperation. We would like to thank N. Pettipaw, agricultural attache, U.S. Embassy, Taipei, for his great assistance and guidance that has ensured our successful program in Taiwan since we established our Taiwan office in November 1969.

"Local cooperators, such as the Taiwan Vegetable Oil Assn. (oilseed processors), Taiwan Feed Manufacturing Assn., and other trade associations–such as tofu, soy sauce, poultry, and miso–have given us full support of our market development programs.

"The ASI Taiwan office has become a free consulting agent for their production problems, management, marketing, and expansion programs. It is our pleasure to be a part of this dynamic growing industry.

Photos show: (1) Dr. Steve Chen (small portrait photo). (2) 400,000 metric ton silo in Kaohsiung Harbor. In the foreground are Leslie Tindall (left, ASA president) and C.C. Chen (agricultural marketing specialist, U.S. Embassy, Taiwan). (3) Semiautomatic packaging of refined soybean oil in Tong Fha Oil Mills.

A table and graph show Soybean production and imports in Taiwan (1967-1971 projected). Note that domestic production is only about 10% of imports. Domestic production decreased from 75,226 metric tons in 1967 to an estimated 67,950 metric tons in 1971. Imports increased from 346,900 metric tons in 1967 to an estimated 700,000 metric tons in 1971. Address: PhD, Country Director Taiwan, American Soybean Inst.

209. Laine, Iris Coyn. 1971. Soy goes to school. *School Lunch Journal* 35(7):41-43. July/Aug.

• ***Summary:*** "On February 22, 1971, USDA authorized the use of textured vegetable protein, fortified with vitamins and minerals, to meet part of the minimum requirement of two ounces of cooked meat for the Type A school lunch." Discusses: What this means: Main dishes, sandwiches. What are textured vegetable proteins? Look and taste. Nutritional content. What products are available? Want more information? Contact the Food Protein Council. The nine regular members of the Council are listed: ADM, Cargill, Central Soya Co, Far-Mar-Co, Griffith Laboratories, Miles Laboratories, Ralston Purina Co., A.E. Staley Manufacturing Co., and Swift Chemical Co.

"For schools that prepare their own foods, there are several recipes in USDA's 'Quantity Recipes for Type A School Lunches', that are ideal for including textured vegetable protein products." The names of ten main dishes (with the USDA Card No. for each) and 2 sandwiches are given. A photo shows three school lunch dishes which include textured vegetable proteins: Hamburger, sloppy joe, and spaghetti sauce. Address: Foodservice Relations Director, Food Protein Council.

210. *Soybean Digest.* 1971. What's ahead for soy protein? Nov. p. 11-13.

• ***Summary:*** Discusses the work of the Food Protein Council, established this year as an autonomous organization within the National Soybean Processors Association. "The goal of the new FPC is to centralize promotion of edible vegetable protein for use in human food." The focus in 1972 will be on the school foodservice market, plus the institutional and commercial restaurant market. "The Food Protein Council, like its parent association, the National Soybean Processors Assn., is managed by Smith, Bucklin & Associates Inc... Member companies of the Council are: Archer Daniels Midland Co.; Cargill Inc.; Central Soya Co. Inc.; Far-Mar-Co, Inc.; Griffith Laboratories; Miles Laboratories Inc.; Ralston Purina Co.; A.E. Staley Manufacturing Co.; and Swift Chemical Co."

211. *Food Engineering.* 1972. Ingredients '72. 44(5):63-68. May.

• ***Summary:*** "Makes soya into nutlike ingredient" (p. 64-65). Pro-Nuts (roasted soybeans made by Soy Products, Inc.) are made by expanding soybeans to 2½ times their original size. The product contains 48% protein, 26% fat and 16% carbohydrates. It is relatively high in protein compared with 30% protein in peanuts, 19% in almonds, 9% in pecans and 21% in black walnuts. Note: In Dec. 1970 Edible Soy Products Inc. was manufacturing Pro-Nuts in Hudson, Iowa. The company name given above as "Soy Products, Inc." should probably be "Edible Soy Products, Inc."

"Textured soy protein saves meat" (p. 68). Textratein, a meat extender, is made by Cargill, Inc.

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212. Cargill, Processing and Refining Division. 1972. Dedicated to serving world agriculture and industry with products, research, marketing... (Ad). *Soybean Digest.* Aug. p. 2.
• ***Summary:*** A full-page ad. In the lower middle are listed Cargill's "Plant locations: Port Cargill, Minnesota. Cedar Rapids, Iowa. Washington, Iowa. Memphis, Tennessee. Chicago, Illinois. Ft. Dodge, Iowa. Sioux City, Iowa. Norfolk, Virginia. Des Moines, Iowa. Wichita, Kansas. Gainesville, Georgia. San Francisco, California. Fayetteville, North Carolina. Tarragona, Spain. Amsterdam, Holland. St. Nazaire, France.

In the lower center is the round Cargill logo.

This ad also appeared in the April 1973 issue (p. 24). Cargill now had new plants at Dayton, Ohio, Sao Paulo, Brazil, and Narrabri, Australia. Address: Cargill Building, Minneapolis, Minnesota 55402.

213. *Soybean Digest.* 1972. Russian [soybean] sale captures convention attention. Sept. p. 3.
• ***Summary:*** "The sale of 35 million bushels of soybeans to Russia provided the most dramatic backdrop that an ASA convention has ever had. The sale, confirmed just 3 days before the rap of the opening gavel, influenced nearly every conversation as growers assembled from 25 states.

"Rightly so, because as ASA Director of Market Development Chet Randolph points out, 'The Russian sale is far more significant than the 35 mil. bu. would indicate. This first sale cracked a political barrier which could allow millions of bushels of soybeans to flow behind the Iron Curtain in the years ahead.'

"Ad Blankestijn of Cargill's Amsterdam plant interpreted the meaning of the sale to U.S. growers. 'This sale further points up the need for U.S. growers to expand their soybean acreage next year,' he noted. Blankestijn had pressed for a 50 million acre U.S. crop this year. He told reporters that Russia has purchased soybean processing equipment from some of his suppliers. 'This means Russia is serious about soybeans.'

"Secretary of Agriculture Butz told reporters that sales of U.S. farm products to USSR could swell to over $1 billion the first year.

"Butz was warmly applauded when he told growers, 'The direction of farm programs in the future will be away from government control, and toward more freedom of choice for the farmer.'

"The ASA market development staff is concerned about the average soybean yield this year, because each staff member expects an increase in demand for soybean or meal in the year ahead in the area in which he serves. 'We've been increasing the exports of soybeans to Western Europe by 8% to 10% a year,' noted Fred Watts, ASA's European director.

"So farmers were given the message to grow more soybeans from several sources, including their own staff of ASA personnel from several marketing areas."

214. *Soybean Digest.* 1972. 1972 ASA awards–Honorary life members: D. Leslie Tindal and Adrianus Blankestijn. Sept. p. 24.
• ***Summary:*** Mr. Tindal is owner-operator of Ten-Dale Farms at Pinewood, South Carolina, and a past president of the American Soybean Association. He helped organize the South Carolina Soybean Association and served as its first president.

Mr. Blankestijn, as president of Cargill Soja in Amsterdam, heads the big processing firm's Holland office with the largest processing plant in Europe. He joined Cargill in 1966, and was manager of the Memphis plant for 2 years, and became general manager of Cargill Soja Industrie at Amsterdam in 1968. Photos show Tindal and Blankestijn.

215. Lockmiller, N.R. 1973. Increased utilization of protein in foods. *Cereal Science Today* 18(3):77-81. March. [13 ref]
• ***Summary:*** Details are given on each type of soy protein product and the way each is used. Table 4 gives the price per pound for various soy protein foods, the estimated annual production in 1972, and the current uses. Soy flour and grits, $0.15-$0.17/lb, 352-500 million pounds produced in 1972. Used as ingredients for baked goods, dog foods, sausages.

Soy protein concentrates, $0.21-$0.25/lb, 40-50 million pounds produced. Used in manufacturing textured products. Ingredients in processed meats, baby foods, and health foods.

Soy protein isolates: Regular $0.41-$0.45/lb, modified isolates $0.92-$1.33/lb. Production of both types: 35-40 million pounds. Regular isolates are used in manufacturing analogs such as meatless ham, bacon, hot dogs, etc. Modified isolates are used in whipping agents.

Textured soy protein products: Extruded flours, $0.27/lb and up. Spun isolates $0.50/lb and up. Production of both combined: 35-40 million pounds in 1972. Textured soy protein products are use in bacon bits, bacon strips and similar foods.

Table 6 shows what companies supply which of the following types of edible soy-based ingredients: Soy flour and grits (defatted, low-fat, full-fat), concentrates, isolates, spun fibers, textured soy prod. The companies are ADM (soy flour and grits–defatted, low-fat, and full fat, textured soy prod.), Cargill, Central Soya, Far-Mar-Co, General Mills, Griffith Labs, Gurley, Inc., Lauhoff Grain Co., Miles (Worthington), National Protein, Ralston Purina, A.E. Staley, Swift & Company. Address: A.E. Staley Mfg. Co., Decatur, Illinois.

216. *Business Week.* 1973. Making it cheaper to eat protein. May 12. p. 184, 186.
• ***Summary:*** Skyrocketing food prices are forcing the food industry to develop new textured soy protein products to

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extend or substitute for meat, suing either of three general methods: Spinning (Miles Laboratories/Worthington Foods), concentrating (Central Soya Co. concentrates), or extruding (ADM, this is now the leading method for making textured vegetable protein).

"Archer Daniels Midland vigilantly protects both its broad product patent and its copyright on the initials TVP (for textured vegetable protein). The company cemented its patent position with a court suit in 1971. Today, five of its eight competitors–Cargill, Miles Laboratories, A.E. Staley, Swift, and Ralston Purina–sell vegetable protein lines under license from ADM.

"Burger mixes: TVP got its first big boost when the Agriculture Dept. [USDA] in 1971 approved its use in the national school lunch program. By the end of 1972, total demand had grown to about 55-million lb. a year, with ground beef as the largest single market.

"Red Owl Stores, Inc., sells such burger mixes across its butcher counters, usually in a mix of 75% meat to 25% vegetable protein. Called Juicy Burger II, or Juicy Blend II, the product sells for $0.75 a lb., compared with $0.99 a lb. for ground beef. Red Owl says that the mixture outsells whole meat by 3 to 1. Kroger Co., the nation's third-largest food chain, last month came out with its own mix of ground beef and textured vegetable protein, called Burger Pro.

"Dr. Virgil O. Wodicka, director of FDA's Bureau of Foods, says: 'Don't tell consumers what it isn't–tell them what it is.'"

217. *Business Week.* 1973. Dwayne Andreas' affair with the soybean. June 2. p. 54.
• ***Summary:*** Andreas has great interest in and hopes for TVP, though it presently accounts for only a tiny fraction of ADM's total sales. "Andreas believes its potential as a food extender and meat substitute in the U.S. could lead to sales of 2.7 billion pounds by 1980. Now ADM has an estimated 60% of the business, with the rest produced under license. Talks are also under way for ADM to construct TVP plants in Brazil and Yugoslavia, an ADM TVP plant is under construction in Great Britain and one is in the planning stages in Australia.

"The 55-year-old Andreas seems the very antithesis of an entrepreneur... His father, Reuben P. Andreas, was farming at Lisbon, Iowa, near Cedar Rapids, when he took over a bankrupt country elevator during the Depression and ran it as a family enterprise with his four sons. Honeymead Products Co. [sic, R.P. Andreas & Son], as it was called, bought processed soy meal until 1938, when the 20-year-old Dwayne persuaded his father to buy the machinery to process its own. Honeymead built the plant in Cedar Rapids.

"In 1945, the Andreases sold the family-owned business to another private company, the giant Cargill, Inc., in Minneapolis [Minnesota]. For seven years Andreas ran Cargill's soybean business.

"In 1952, he left Cargill and again set up Honeymead [in Mankato, Minnesota], which promptly reentered the soybean business in competition with his former employer. Andreas and his brothers, Lowell, Albert and Glenn, sold Honeymead to the Grain Terminal Association, which operated the soybean business of Farmers Union, a large farmer-owned co-operative...

"In 1966, Minneapolitans were startled to learn that he had bought an interest in Archer Daniels Midland, an old-line family-controlled grain company. With a foothold in ADM, which Andreas says he was 'invited' to take by the Archer family, Andreas began buying ADM stock on the open market. Andreas was invited to sit on the board, and became chairman of the executive committee in 1968. 'I knew that ADM was a dozen years ahead of everyone else in textured vegetable protein research, and I believed that was where the important action was going to be,' Andreas recalls. 'One of the first things I did was to take the edible soy out of the lab and construct a plant in Decatur to make all the grades of edible soy protein in 1969. When we first built it, we thought we had the capacity to make all the product we could sell through 1976. We have already doubled production, and are short.'"

A photo shows Dwayne Andreas.

218. Beard, B.H. 1973. Soybean research in California: Summary and conclusions. *California Agricultural Experiment Station, Bulletin* No. 862. p. 63-65. June. [1 ref]
• ***Summary:*** "Soybeans, originally introduced into the U.S. from the Orient about the turn of the century [sic, in 1765] is an extremely important crop in many areas. Even though the cattle and poultry industries, and other consumers in California use 600,000 to 700,000 tons of soybeans or soybean products annually at a freight cost of approximately $22 million, the crop has not become established in California. A small acreage of soybean is grown for hay, silage, forage or as a green manure, but even for these uses the crop is of minor importance in California...

"Unfortunately yields over 2,500 pounds [41.7 bu] per acre have been rare in California, even though many tests have been conducted throughout the state...

"The first time the crop is sown in a field soybean seed should always be inoculated with the soybean type of *Rhizobium* bacteria. It is usually advisable to inoculate again if more than a year has passed since the last time soybeans were grown or if the soil was allowed to become completely dry between crops. Inoculation may be done in a farm building or in a shady spot in the field by sprinkling 3/4 to 1 pint of water on 60 pounds of seed in a wash tub; the recommended amount of inoculum is then added and stirred by hand until all the seed is almost black with the inoculum. The inoculated seed should be kept in a shady spot and covered with a damp cloth. It is best to place only small amounts of seed in the planter boxes and the inoculated seed

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should be sown immediately.

"Selection of the proper variety for the location is very important. We have divided California into four areas based on the maturity of the varieties that should be grown... South of the Tehachapi Mountains maturity groups V, VI and VII should be grown; in southern San Joaquin Valley maturity groups IV or V; in the central San Joaquin Valley maturity groups II and III are best; and in the southern Sacramento Valley maturity groups 0 or I have given the highest yields...

"Spider mites are always a potential threat to soybean production throughout California. Research has indicated that chemical control is possible but is generally too expensive...

"Depending on soil characteristics, the crop will require from 20 to 30 inches of water during the growing season...

"Soybeans should be combine harvested as soon as the beans in the field average 14 per cent moisture. Do not wait because beans will begin to shatter from the pods at less than 8 percent moisture.

"Acknowledgments: A publication of this kind, which summarizes experiments over a period of years, does not include as authors many people who have helped with various phases of the research. We acknowledge contributions made by O.P. Gautom, and Mark Campney, Department of Agronomy and Range Science, Davis; by Terry Braun, Michael Gaffrey, William Kester, and John Campbell, Department of Entomology, Davis; and by Farm Advisors W.G. Lyon and Roy Jeter (Glenn County), W.R. Sallee and R.F. Miller (Tulare County), L.K. Stromberg (Fresno County), O.D. McCutcheon (Kings County), M.D. Morse (Butte County), and Roy Barnes (Kern County). We also acknowledge help from Richard Hoover, Fred Fisher, and Richard Munez, West Side Field Station, Five Points; and Richard Reynoso and Mrs. Robert Wagner, Imperial Valley Conservation Research Center, Brawley. Mr. Audie Bell (J.G. Boswell Company, Corcoran), Dr. W.R. Powell (Kern County Land Company, Bakersfield), and Les Hefferline (Pacific Vegetable Oil, Woodland) helped conduct some of the yield tests, and George Cavanagh and R.E. Pruitt (Ranchers Cotton Oil, Fresno) made oil and protein analyses of many yield test samples.

"Several companies furnished financial assistance to support soybean research from 1955 through 1957. We acknowledge this support with gratitude:

"Albers Milling Company, Los Angeles
"J.G. Boswell Company, Corcoran
"Cargill, Incorporated, San Francisco
"Kingsburg Cotton Oil Company, Kingsburg
"Pacific Vegetable Oil Corporation, San Francisco
"Poultry Producers of Central California, San Francisco
"Producers Cotton Oil, Fresno
"West Coast Oilseeds Development Committee, Arizona and California
"Several companies have furnished chemicals for use in soybean experiments. We herewith thank:
"The Dow Chemical Company
"Pennsylvania Salt Mfg. Co.
"General Chemical Division
"Niagara Chemical Division
"Hercules Powder Company
"Stauffer Chemical Company
"Chemagro Corporation
"California Spray Chemical Corp.
"American Cyanamid Company
"Rohm and Haas Company." Address: Univ. of California at Davis.

219. Humphries, Bill. 1973. N.C. first to plant it in U.S. [the soybean in North Carolina]. *News and Observer* (*Raleigh, North Carolina*). Sept. 16.

• ***Summary:*** During the late 1870s, "a North Carolinian named Christopher Wilson Hollowell, owner of Bayside Plantation near Elizabeth City, was growing soybeans as a farm crop.

"The first commercial processing of soybeans in America took place at Elizabeth City 61 years ago, in 1912" [sic, 1915]. By 1924 Illinois had edged out North Carolina as America's No. 1 soybean producing state; each grew about 1 million bushels.

Six soybean crushing plants in the Tar Heel state [North Carolina]–including Cargill's at Fayetteville and Ralston Purina's at Raleigh–could handle all the soybeans grown in the state. But about 35% move out of the state for processing and for export overseas.

"One of the few plants in the United States devoted exclusively to processing soybeans for human consumption is the United Roasters Inc. facility at Clayton. This firm, with offices in Raleigh, markets roasted soybeans under the name "Golden Soya." A major U.S. concern currently is negotiating for acquisition of United Roasters and plans to make roasted soybeans a major snack food from coast to coast, utilizing up to 15 million pounds of beans annually."

Note: Soybeans were first grown in North America in 1765 by Samuel Bowen (Hymowitz & Harlan. 1983). Address: Farm editor.

220. Murray, Roger. 1973. World seed, oil and protein situation. In: Ontario Soya-Bean Growers' Marketing Board, ed. 1973. Ontario Soybean Symposium 1973. Ottawa: Agriculture Canada. 110 p. See p. 36-46.

• ***Summary:*** "Gentlemen, this is my first visit to Southern Ontario and it is a great pleasure for me. I feel that it is quite an honour for a humble rapeseed trader from the West to be invited to address a group so dedicated to soybean. Indeed, I do feel a little like Daniel in the lions den and trust you will allow me to return in one piece, remembering that I do spend quite a lot of my working day trying to figure out ways of selling rapeseed, flax and sunflower seed at the expense of

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soybeans. After the year we have just been through, however, perhaps there's room for all of us. However, my American parent company, Cargill Incorporated, are of course, major participants in the U.S. soybean industry and I have been able to draw much of my material today from their resources.

"I do not want to spend time discussing the incredible events of last year. You are well aware of the major reasons why soybeans went from a low of 3.31 to a high of 12.90 per bushel on the Chicago market. World headlines have been made almost daily by the dramatic events in our own agricultural industry. As we come out, therefore, from the 72/73 season it is a particularly opportune time to review where we are and where we are going.

"I believe that in the compound growth in the world today, our standards of living and economic expansion have caught up with us. We lived through most of the sixties in a period of agricultural surpluses. When we were hit suddenly by Soviet crop failures Indian droughts–the arrival of the El Nino Ocean current that drove away the fish from the Peruvian shore and other poor world crop situations such as your own and the U.S. soybean crop last year, it took us by surprise and has left us in a new ball game.

"Today it is almost a disadvantage to be a trader with experience–the best results and market judgments are made by looking at the completely new situation and trying not to relate it too much to the past. World stocks, not only of oilseeds but of all major grains are down to near minimum carryover levels and from now on we are dependent upon the production from new crops. In that situation we are not going to see stable commodity markets until the world has had a chance to build up a strategic grain reserve. During the sixties we failed to realize how important this was to overall economic growth. Hence, although, I do not forecast the wild markets ahead of the last 12 months, we are going to see some big swings sometimes brought about through factors which don't fully justify them. A small crop scare in a major producing area could be good for 50 cents or even a dollar a bushel in the bean futures, and a rumor of more Chinese interest in beans all of that. In short, supply and demand are tight at the moment and we need time to adjust to this.

"It is also clear that grain and oilseed prices have moved onto another plateau. In order to stimulate production the farmer has got to be paid an attractive economic price that will encourage him. I think that the days of beans at 3 dollars a bushel have disappeared and likewise those of corn at a dollar. During the recent Canadian Feed Manufacture Convention in Winnipeg I was surprised how many people, particularly from Ontario, just did not believe in current markets. Well we have recently seen something of a sell off, but the basic reasons why we have a new situation are still with us. In this respect let me mention 2 other points which are very relevant.

"First, the major dollar devaluation of the last 12 months makes 6 dollar beans equivalent in local currencies to about 4 to many of our overseas customers. To them, therefore, 6 dollars is not exorbitantly high by today's standards. This is a very obvious remark but too many of us in North America fail to realize how important the devaluation of the dollar and for that matter the rise in the price of gold has been to the world outside this continent.

"Second, the world expects to live better and at a higher standard than it used to and that means better diets–primarily more meat. That is not to say that the growth in standards of living and therefore of meat consumption will carry on regardless of price as we shall come to in a moment, but it is nevertheless the major underlying supporting factor. I have just spent the weekend entertaining a delegation of Czechoslovakian oilseed buyers in Winnipeg. These gentlemen are the largest customers of North American sunflower seed. Yet sunoil is almost the most expensive of all oils in the food section today. I asked them why they continued to buy sunoil and not rape or bean oil. I was told–to my surprise–that the standard of living in Czechoslovakia is among the 12 highest countries in the world today. For taste reasons the people demand a high proportion of sunoil and so they have turned to North America for supplies even though big brother to the East produces 15 times as much seed as we do. This East European expansion has as you know been a decisive factor in the market place of the last 12 months.

"Now I would like to turn to a more statistical picture and analysis of the current situation." Address: President, Cargill Grain Canada, Ltd., 1414 One Lombard Place, Winnipeg, MAN, Canada.

221. Ross, Irwin. 1973. Dwayne Andreas's bean has a heart of gold. *Fortune.* Oct. p. 136-41, 243-45.

• ***Summary:*** One of the best articles and histories seen on Dwayne Andreas and A-D-M. In the 7 years since Andreas took over the leadership of A-D-M, he has nearly tripled sales (from $371,626,000 in fiscal 1967 to $967,710,000 in fiscal 1973) and quintupled operating profits (from $3,225,000 to $16,895,000). Meanwhile, the price of the stock has nearly quadrupled.

Dwayne Andreas was born in 1918, the fourth son in a family of 5 boys and a girl. They lived on a 160-acre farm in Lisbon, Iowa. "His father, Reuben, came from a Mennonite family, and the children were brought up in something akin to Mennonite discipline–no movies, no Sunday papers, no ball games on Sundays, a surfeit of religious devotions, and unending hard work.

"In 1928, Reuben Andreas was persuaded by the local banker to take over a bankrupt grain elevator in Lisbon. The whole family worked at the business, and it prospered. After graduating from high school, Dwayne went off to Wheaton College, in Illinois, for a year and a half and then entered the family business. Once a year he would travel 300 miles to Decatur, Illinois, to negotiate for his annual supply of

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soybean meal from the A.E. Staley Manufacturing Co. On a memorable day in 1938, Staley took him to lunch and suggested that the Andreases build a soybean-crushing plant in Iowa. Staley pointed out that Iowa farmers were about to plant a lot of soybeans; Staley's people did not want to expand geographically, so here was a golden opportunity. A few days later, the Andreas family contracted to build a factory in Cedar Rapids. Business was excellent...

"By 1945 the Honeymead Products Co., Inc., was earning $150,000 a year after taxes. Dwayne Andreas was by now largely running the business, his father having retired and his older brother Albert having sold out. Dwayne was classified 1A in the draft, and in anticipation of departure for the Army he sold the Cedar Rapids plant, and later two smaller operations, to Cargill. In the end, Andreas was not called up and he found himself the 40 percent owner of a corporate shell, still called Honeymead, with a net worth of about $2.5 million. Thus he became a millionaire at the age of twenty-seven.

"After the sale, Andreas went to work for Cargill, whose president, John H. MacMillan Jr., offered him a 4 percent stock interest. Andreas remained for seven years, making a $400,000 after-tax profit when he sold his stock back to the company. He built a number of soybean and other oilseed plants, traveled widely, and for the first time got an inside view of the operations of an international trading organization.

"Meantime, his younger brother Lowell had come out of the Army and put Honeymead Products back into the soybean business in Mankato, Minnesota. Dwayne by this time owned the bulk of Honeymead shares. He left Cargill and went to work developing export markets and handling transportation logistics at Honeymead, while Lowell ran the plant. In seven years after-tax earnings went from $300,000 to $1 million.

"In 1960, Andreas received a phone call from M.W. Thatcher, the veteran manager of the Grain Terminal Association, which represented thousands of farmers in Minnesota and the Dakotas who sold soybeans to Honeymead. Thatcher told him that his farmers now wanted to process their own beans and share in the profits."

So G.T.A. bought Honeymead for a sum that eventually came to about $10 million. "The proceeds went to a corporate shell named First Interoceanic Corp., and both brothers were hired by G.T.A., Dwayne becoming executive vice president." But they were not happy there, in part because of the very different ways that cooperatives and private companies run their businesses.

The Andreases used Interoceanic to invest in several small businesses, and to buy a soybean crushing plant in Decatur. In 1963 they put up $2.5 million to start the first new bank in downtown Minneapolis in over 40 years; in June 1964 the National City Bank opened and was very successful.

"The move into Archer-Daniels-Midland came in September, 1965, in an unusual way: the Andreases were invited in to provide new leadership. A-D-M not only was a diversified agricultural processing company, but also had a large chemical operation. It was controlled by the Archer and Daniels families of Minneapolis; John Daniels, a grandson of a founder, had served as president since 1958. In 1965, after a three-year decline in earnings, the company could not cover its dividend. Shreve M. Archer Jr., a director, took the lead in inviting the Andreases to join the company, offering to sell a block of 100,000 shares from the holdings of the Archer trust... To Dwayne Andreas, the request to lead A-D-M out of the doldrums looked almost irresistible...

"There were more practical considerations, of course. The stock was a good buy, for at $33 a share it was nearly $26 below book value. Andreas could also see great growth potential in A-D-M... Moreover, Andreas was greatly impressed with textured vegetable protein (TVP), a soybean product edible by humans, which A-D-M's laboratories had developed. At the time, TVP was being produced only in the lab, but Andreas could see a host of possibilities for it as a meat extender and as a cheap protein in a variety of foods–from cereals to tuna-fish salad...

"Through First Interoceanic the Andreases bought 100,000 shares of A-D-M, later extending their holdings to 181,900 shares. They assumed personal authority gradually and with faultless diplomacy. Dwayne joined A-D-M's board and executive committee in February, 1966; early the following year Lowell became executive vice president in the newly created office of the president, where he formally shared authority with John Daniels. After a year, Lowell became president and Daniels chairman of the board. While Lowell ran the company on a day-to-day basis, Dwayne, who owned most of Interoceanic, became the ultimate boss in everything but title. He finally assumed the title of chief executive in 1971.

"In 1969, A-D-M and First Interoceanic merged, with the result that the two Andreases increased their holdings to 16.6 percent of the shares, and A-D-M became owner of the Minneapolis bank. Lowell Andreas remained president until 1972, when he retired at the age of fifty, as he had long warned he would.

"The Andreases' first significant move to revamp A-D-M came in April, 1967 when the entire chemical division was sold to Ashland Oil for $65 million... Later in the year A-D-M's unprofitable alfalfa-dehydrating plants were sold for $5 million... With this sizable bundle of cash, expansion started in a big way." They invested much of the new money in soybean processing and constructing a TVP plant in Decatur. They increased the capacity of one Decatur soybean crushing plant to 4,000 tons a day–making it the largest single soybean plant in the world. During a 3-year period A-D-M's soybean crushing capacity was increased to 120 million bushels a year from 50 million.

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Two dramatic graphs show: (1) U.S. soybean production, exports, and cash price per bushel from 1964 to 1974 est. (2) A-D-M's net sales and net earnings during the same period. The caption: "As the bean goes... so goes Archer-Daniels-Midland."

222. Adams, Valerie. 1973. Two soy suppliers test own burger extenders. *Advertising Age.* Nov. 5. p. 1, 75.
• ***Summary:*** Staley is marketing Burger Bonus, and Cargill Burger Plus ("the high protein hamburger stretcher"). Address: Chicago.

223. **Product Name:** Textratein Textured Soy Protein (Extruded Textured Soy Flour).
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: 1200 Cargill Building, Minneapolis, MN 55402.
Date of Introduction: 1973 November.
New Product–Documentation: Ad (full-page) in *Soybean Digest.* 1973. Nov. p. 53. "Textratein: It helps take the bite out of meat costs. By at least 30%."

Soybean Digest Blue Book. 1976. p. 49. Predicasts. 1974. World Manufactured Soybean Foods. p. 10. "Cargill's main soybean food plant is in Dallas, Texas, where it manufactures extruded textured soy fiber which it supplies as a meat extender to institutional users." Duda. 1974. Vegetable protein meat extenders and analogues. p. 81. Cargill, Inc. makes Textratein.

224. **Product Name:** Burger Plus (Hamburger Extender with Textured Soy Flour).
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Minneapolis, Minnesota.
Date of Introduction: 1973 November.
New Product–Documentation: Adams. 1973. Advertising Age. Nov. 5. p. 1, 75. "Two Soy Suppliers Test Own Burger Extenders." Predicasts. 1974. World Manufactured Soybean Foods. p. 10. Cargill is a leader in packaged hamburger extenders (Burger Plus) for retail supermarket sales.

Changing Times. 1974. Feb. p. 53. "Now there's 'meatless meat.' Late last year Cargill, Inc. a large grain company, entered the consumer market in the Southwest with Burger Plus, a lightly seasoned textured soy protein. It test-marketed three-ounce packages at two for 49 cents. Each package of mix and water stretched a pound of ground beef to a pound an a half."

225. Cargill, Inc. 1973. Textratein: It helps take the bite out of meat costs. By at least 30%. Cargill Building, Minneapolis, MN 55402.
• ***Summary:*** This full-page ad shows an elderly lady eating a slice of pizza.

Across the bottom in small letters: "For a free Textratein sample kit with 19 proven recipes, and additional information, call Larry Fogdall, 612/473-8811. Or write: Cargill, Inc. (Soy Protein Products). Cargill Building. Minneapolis. Minn." Address: Minneapolis, Minnesota.

226. Lehman Brothers. 1973. Ralston Purina Company: Company & industry study. New York. 112 p. Nov. 27. [5 ref]
• ***Summary:*** This company study includes a study of the U.S. soybean crushing industry. Leading processors of soybeans 1972-73 (p. 71). Company (estimated million bushels crushed/percentage of total): Cargill (130 million /18.0 percent), Archer-Daniels-Midland (120/16.6), Central Soya (90/12.5), Ralston-Purina (70/9.7), Esmark (55/7.6), A.E. Staley (55/7.6), Anderson Clayton (40/5.5), Allied Mills (35/4.8), Others (127/17.6). Total bushels crushed is 722 million.

Year Total Crush Percentage crushed by 4 largest companies
1954-55 241.4 million bu 41%
1963-64 436.8 million bu 50%
1972-73 721.9 million bu 56%.

227. Youngblood, Dick. 1973. Sales soar, nearly triple Cargill profits. *Minneapolis Tribune.* Dec. 2.
• ***Summary:*** "With two-thirds of its 1973 profits coming from overseas operations, Cargill reportedly moved into position as the nation's largest earner of balance-of-payment credits." "Second, Cargill is the world's largest soybean processor, and 1972-73 soybean-crushing margins 'went out of sight,' as one stock analyst put it. rising three to five times above year-earlier levels."

"With the world demand for livestock surging, Cargill's 18 soybean-processing plants (including 12 in the U.S.) on five continents were well-positioned to take advantage of widening margins."

228. **Product Name:** Williams Textured Vegetable Protein with Seasonings (Extruded Textured Soy Flour) [Chili, Taco, Hamburger, Sloppy Joe, Spaghetti, and Meat Loaf].
Manufacturer's Name: Williams Foods, Inc.
Manufacturer's Address: 1502 S. Madison, Webb City, MO 64870. Office: 1900 W. 47th Place, Westwood, KS 66205.
Date of Introduction: 1973.
Ingredients: Textured soy flour, bleached wheat flour, salt, seasonings.
Wt/Vol., Packaging, Price: 4 oz paper/foil/poly flexible pouch, except Chili (3 oz) and Spaghetti (13.5 oz) Each retails for $0.59 (1979).
How Stored: Shelf stable.
New Product–Documentation: *Soybean Digest Blue Book.* 1978. p. 36. Food Product Development. 1979. Aug. p. 66-67. The product, launched in 1973, has withstood the test of time and during the past 6 years built a brand image which

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continues to reap benefits of consumer loyalty. The line continues to have 6 flavors, and all products are preseasoned. The company uses Cargill's Textratein 5-F textured vegetable protein, a vitamin-fortified, caramel-colored product. The new package (Label, photo in article) adds the phrase "Ground Beef Extender." Graphics are four color.

229. Meyer, L.H.G. 1973. Firmenschrift zum 50jaehrigen Jubilaeum [Lucas Meyer company brochure on its 50th anniversary]. Hamburg, Germany: Lucas Meyer. 90 p. [Eng]*

• ***Summary:*** Lucas Meyer celebrates its 50th anniversary.

From the Cargill location history on the web: "Cargill's plant in Hamburg-Rothenburgsort evolved from the former Lucas Meyer GmbH & Co., a family-run enterprise founded in Hamburg in 1923 initially for the export of pharmaceutical specialties business.

"In 1949 the enterprise began manufacturing lecithin and set up research laboratories at Ausschläger Elbdeich in Rothenburgsort.

"Ever since then, the business has grown to be a successful global enterprise with sites and locations on nearly all continents, providing materials for many important segments of the food industry, the dietetics as well as the pharmaceutical industry. The individual additives and solutions we provided, supplies customers with fresh, tasty, healthy and safe food products.

"In 1999 the family business was sold to SKW, a specialty chemical company. Years of restructuring followed, with Degussa AG–again a specialty chemicals enterprise–finally emerging from the merger between SKW and Degussa Hüls."

At the same time after that the site at Hamburg-Rothenburgsort was acquired by Cargill. As of Sept. 2015 some 141 employees are there, at Cargill's Texturizing Solutions.

230. Ruble, Kenneth D. 1973. Land O'Lakes: Farmers make it happen. Minneapolis, Minnesota. x + 205 p. Illust. No index. 21 cm.

• ***Summary:*** This is a sequel to the author's "Men to Remember" (1947), which chronicled the origin and first 25 years of the co-operative association now known as Land O'Lakes. Chapter 1 summarizes some of the progress made during Land O'Lakes first quarter century (p. 4-5): (1) Created a new standard of butter quality by selling only sweet cream butter that scored 93 points or more. "Up to that time, virtually all butter was made from sour cream and had a harsh taste." (2) Revolutionized butter packaging, by using one pound cartons and rolls of butter, and selling its butter under a brand name–Land O'Lakes. Previously, grocers had scooped bulk butter out of wooden tubs. (3) Originated government grading of butter (at L.O.L. expense) and printed the resulting "certificate of guarantee" on each carton. When L.O.L. began using this as a powerful sales and advertising tool, the competition panicked. (4) Pioneered farm and creamery quality control. This "upstream" control assured enough sweet cream to meet the stringent new butter tests. (5) Popularized quarter-pound sticks of butter. (6) Broke old distribution patterns. "Instead of joining other [butter] producers in glutting the New York commission houses, L.O.L. developed direct sales to large retailers, and established sales branches in all key markets, on its way to becoming–by far–the nation's No. 1 [brand of] butter. (7) Capitalized on the scarcity of butter during World War II. While many long-established brands disappeared, "L.O.L. sponsored a memorable series of good-humored cartoon ads which kept the brand name alive and emphasized Land O'Lakes quality, while sugar-coating the scarcity." (8) Became the world's largest producer of powdered milk. (9) Kept innovating and expanding–into dry milk, ice cream, cheese, turkeys, eggs, fluid milk and other related foods.

One of the major figures at L.O.L. was president John Brandt.

In 1950 Congress passed the Margarine Act, which repealed the tax system and all federal restrictions on coloring margarine yellow. "This was a bitter blow to Land O'Lakes and all the nation's dairymen" (p. 9).

Chapter 13 (p. 107-14) begins: "With organizations that adjoined each other geographically, Land O'Lakes and Iowa-based Farmers Regional Co-operative began informal talks in 1969 to explore possible ways of working together on an egg marketing program in northern Iowa and southern Minnesota. The Iowa co-operative, using 'Felco' as its trademark, specialized in a wide variety of quality farm supplies... and also operated a soybean processing plant. Its sales in 1969 totaled $84 million" [vs. more than $300 million for L.O.L.]. Soon "the idea of broader, long-term cooperation began to take form... The Land O'Lakes board... was impressed by the opportunity to diversify its already profitable agricultural supply business and to enter the field of soybean processing." They both hired the Battelle Memorial Research Institute to evaluate the pros and cons of such a merger. In Oct. 1969 Battelle submitted its report "concluding that the future of both organizations would be made more secure by merging. On 1 April 1970 the merger became official, and a new name–Land O'Lakes, Inc.–was adopted for the combined organization. The word "creameries" as dropped from the corporate name. The new organization manufactured Felco brand feeds in 6 locations and operated a soybean processing plant (producing soybean oil and meal) at Sheldon, Iowa.

In "four counties comprising the northwest corner of Iowa, the Big Four Co-operative (organized in 1943) was 'king' of the Iowa soybean business, processing 6 million bushels per year for 116 elevator members by 1967, and also selling about $5 million worth of mixed feed and ingredients." On 1 Oct. 1967 Big Four, an important handler

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of Felco feeds, merged with Farmers Regional Co-operative. The combination of Felco and Land O'Lakes established a "coordinated systems approach," which resulted in a full circle of service to the farmer, selling him his inputs and buying what he produced (his outputs). The new merger departed from the norm among co-ops of "like merging with like–a this was one of the main reasons the union made sense."

Felco had nearly 500 employees, most of them at the Fort Dodge, Iowa, headquarters. Land O'Lakes had about 5,000 serving many decentralized plants and its home office in Minneapolis, Minnesota. In 1972 Land O'Lakes ranked no. 173 (with sales of $748 million) on *Fortune* magazine's list of the largest U.S. industrial corporations. The two highest ranked food companies were Kraftco (No. 30) and General Foods (No. 38). Others, specializing in dairy products, were Borden (No. 44), Beatrice Foods (No. 58), and Carnation (No. 111).

Chapter 17, titled "How to 'dry clean' a bean," is about soybeans, and Land O'Lakes' soybean plant in Sheldon, Iowa. In 1943, twelve co-operative elevators joined to build the original "Big Four" plant. In 1959 a million-dollar expansion was added, "including construction of a central feed plant which produced Felco-brand feeds prior to the consolidation of Big Four with Farmers Regional Cooperative" in Oct. 1967. Then, following the merger into Land O'Lakes [in April 1970], the L.O.L. Board of Directors authorized another major investment to modernize and enlarge the soybean oil extraction facilities. As of 1972, the Sheldon plant handles about 33,000 bushels/day of soybeans (12 million bu/year). In 1971 "Land O'Lakes purchased another soybean processing plant formerly operated by Cargill, Inc. in Fort Dodge, Iowa."

To extract the oil from soybeans, they are cleaned, then passed between corrugated steel rollers, which are positioned to crack each bean into exactly 14 little pieces. These pieces are then "conditioned" by being warmed to 165 degrees, after which they are crushed between smooth steel rollers, that squeeze each bean particle into a tissue-thin wafer looking much like a light-colored oily corn flake. This process ruptures the beans oil cells. The flakes are then conveyed into a giant 3-story extractor, where they are mixed with hexane solvent. This removes the oil in much the same way that a dry cleaner removes grease spots from clothing. Nearly all the hexane is removed and re-used. "Efficiency of this modern solvent process is so complete that only one gallon of hexane is lost per ton of finished product" [oil + meal]. A color photo (p. 152A) shows an aerial view of the Fort Dodge, Iowa, soybean processing plant.

Chapter 20 tells how Land O'Lakes entered the margarine business. In the 1950s, margarine was a naughty word at L.O.L. "When discussed at all, it was called oleo, or just 'oley,' and its origin was scornfully referred to as 'the coconut cow.' Years ago, coconut oil was the main oil used to make margarine in the USA. But today, soybean oil is No. 1 by far, and corn oil is a distant second. So it made sense for L.O.L. to use the soybean oil it made as a major margarine ingredient.

A bar chart (p. 174) shows Land O'Lakes' sales every 5 years from 1948 to 1972. In 1972, co-operative in the USA market only 26% of the nation's food and a minority of these (including Land O'Lakes) is involved in "further processing which *adds value to the farmer's product* and brings him a greater return" [profit]. Dairy products are the only category where co-ops control the lion's share of the market–73% in 1970. In butter production, Land O'Lakes has become the acknowledged national leader by far, in both quantity and quality. So it is no coincidence that butter leads all other food by bringing 71½ cents of the consumer's dollar back to the producer.

In 1972 butter, eggs, ice cream and turkeys were lower priced than in 1947–25 years earlier!

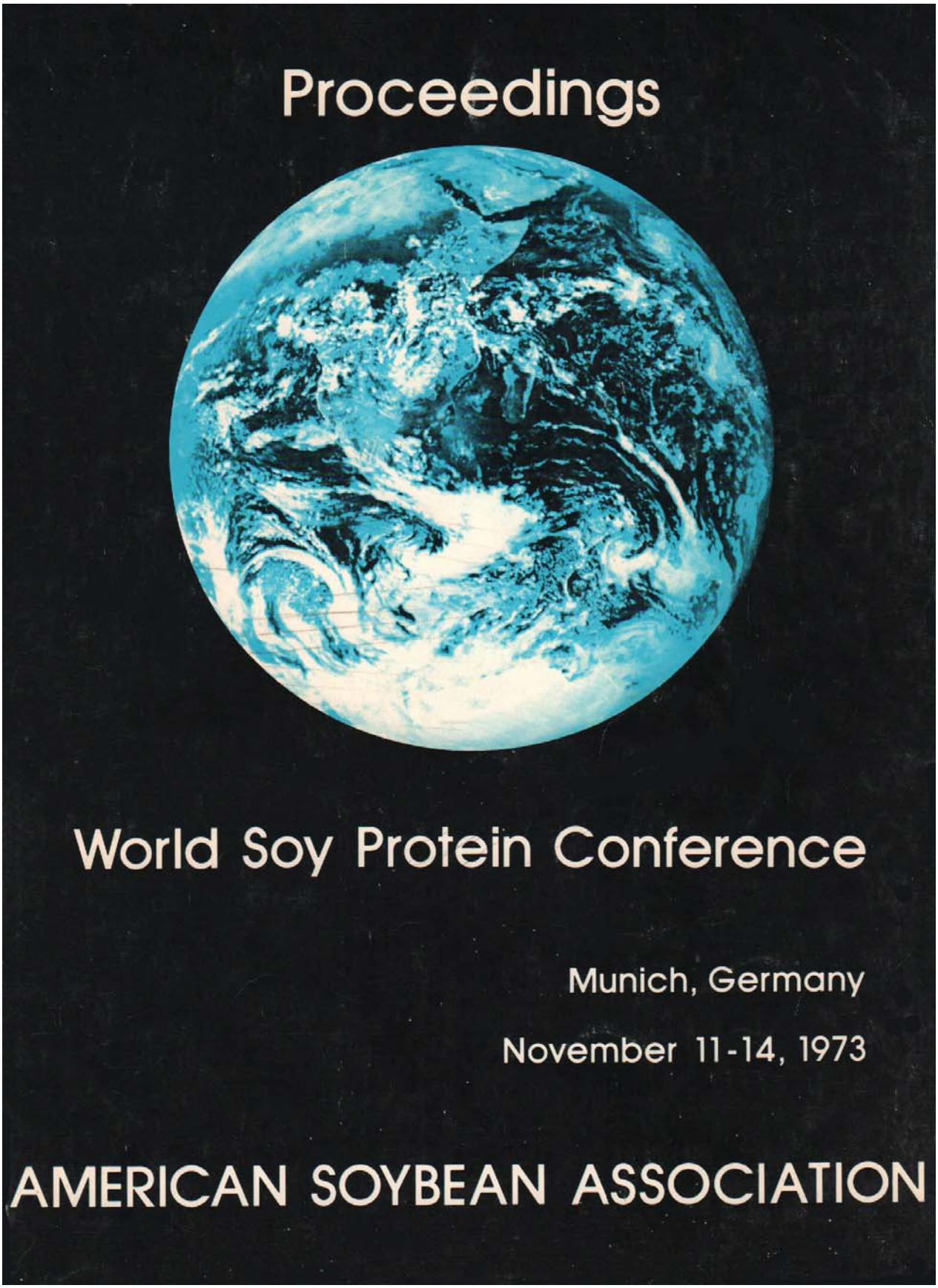
Note: As with the first book, this one would be greatly improved by the inclusion of an index and chronology.

231. American Soybean Assoc. ed. 1974. Proceedings: World Soy Protein Conference. *J. of the American Oil Chemists' Society* 51(1):47A-216A. Jan. Held 11-14 Nov. 1973 in Munich, Germany. 28 cm. [566 ref]

• ***Summary:*** Contents: Session I: World protein markets. Session II: Soy protein products, their production, and



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properties. Session III: Legal and regulatory aspects of soy utilization in foods. Session IV: Utilization of soy proteins in foods. Session V: Utilization of soy protein in foods. Session VI: Nutritional aspects of soy protein foods. Session VII: Future developments and prospects. Round-tables papers. Registration list (directory of participants). Directory of exhibitors and press.

Berwin Tilson, president of the American Soybean Assoc., notes in the introduction (inside front cover): In Oct. 1972 "It was felt that the time was right to gather together top representatives from all areas affecting the soy foods industry... 1,100 representatives from 47 countries actually attended." This was a pioneering and very important conference. It was opened by the U.S. Secretary of Agriculture Earl L. Butz, and senator Hubert Humphrey delivered a memorable, inspirational address. Many distinguished scientists and politicians also presented papers.

Exhibitors (inside back cover): Purina Protein Europe (Brussels, Belgium). Archer Daniels Brussels S.A. (Belgium). Cargill Inc. (Minneapolis, Minnesota). McKee CTIP (Rome, Italy). Central Soya International Inc.–Chemurgy Division (Brussels, Belgium), Alfa Laval AB (Tumba, Sweden; soymilk equipment). Staley Europe (Amsterdam, Holland). A/S N. Foss Electric (Hilleroed, Denmark). Westfalia Separator AG (Oelde, West Germany). A/S Nirg Atomizer (Soeborg/Copenhagen, Denmark). Nabisco Inc.–Protein Foods Div. (Fairlawn, New Jersey). Miles GmbH (Frankfurt am Main, Germany). Lucas Meyer und Edelsoja GmbH (Hamburg, Germany). General Mills Inc. (Minneapolis, Minnesota). Address: Hudson, Iowa.

232. Baldwin, A.R. 1974. Summary of the World Soy Protein Conference. *J. of the American Oil Chemists' Society* 51(1):181A-84A. Jan. Proceedings, World Soy Protein Conference, Munich, Germany, Nov. 11-14, 1973.
• ***Summary:*** Delegates came from 46 different countries. Topics included the development of texturized soy protein by freezing, the removal of beany flavors, and others. Soy can be added to breads and bakery products up to about 3% in volume without much change in absorption, mix, or loaf volume, as compared with non-fat dried milk solids as the additive. Larger amounts of soy flour, for example up to 12%, require less mixing and the addition of some emulsifiers. Taste panels can detect no difference in white bread when up to 2% soy flour is used. Flavor limits its use at higher levels. Meat-soy products had reduced shrink, better dimensional stability, better taste, and were juicier than without soy additions. The fifth plenary session dealt with the use of soy products in national and international food programs. Address: Cargill, Inc., Minneapolis, Minnesota.

233. Balla, Ferenc. 1974. Nutritional value and economic aspects of fortification of foods of plant origin with soy protein. *J. of the American Oil Chemists' Society* 51(1):156A-58A. Jan. Proceedings, World Soy Protein Conference, Munich, Germany, Nov. 11-14, 1973. [1 ref]
• ***Summary:*** Contents: Abstract. Introduction. Nutritional and economical aspects of soy protein. Address: Budapest, Hungary.

234. Horan, Frank E. 1974. Soy protein products and their production. *J. of the American Oil Chemists' Society* 51(1):67A-73A. Jan. Proceedings, World Soy Protein Conference, Munich, Germany, Nov. 11-14, 1973. [12 ref]
• ***Summary:*** Contents: Abstract. Introduction. History of the soybean in the U.S. Economic impact. Soybean protein. Textured soy protein. References.

Table XII states that U.S. producers of edible soy protein products are: ADM, Cargill, Central Soya, Far-Mar-Co, General Mills, Griffith Labs, Lauhoff Grain Co., Miles Labs (Worthington), National Protein, A.E. Staley, Swift & Co. All make textured soy protein products except National Protein (which makes only grits and flours). Central Soya, Ralston Purina, and Staley make soy protein isolates. Central Soya, Far-Mar-Co, Griffith Labs, and Swift & Co. make soy protein concentrates. Address: Archer Daniels Midland Co., Decatur, Illinois.

235. Kellor, Richard L. 1974. Defatted soy flour and grits. *J. of the American Oil Chemists' Society* 51(1):77A-80A. Jan. Proceedings, World Soy Protein Conference, Munich, Germany, Nov. 11-14, 1973. [12 ref]
• ***Summary:*** Contents: Abstract. Introduction. Products and processing. Compositional information. Nutritional information. Functional properties. References. Address: Research Dep., Cargill, Inc., Minneapolis, Minnesota.

236. *Journal of Commerce* (*London*). 1974. New soya edible protein plant set. Feb. 27.
• ***Summary:*** Amsterdam–Cargill Soja Industrie, part of the Cargill-Tradax Group, will soon start construction of a large edible soya protein plant adjacent to its present complex in the Vlothaven. This will be the first such plant built outside

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the United States.

Initial production is scheduled to be 15,000 tons/year of textured protein and 50,000 tons/year of soya flour for customers throughout Eastern and Western Europe. However the plant is designed so that production can easily be quadrupled. In Amsterdam, Cargill presently has a solvent extraction plant that produces soybean meal and oil.

Ad Blankenstijn, president of Cargill Soja Industrie, said that Amsterdam was chosen for this facility because of its excellent links with the hinterland. The rising costs of shipping edible protein from the USA was another reason given for local production.

Note: Vlothaven is part of the seaport city of Amsterdam, which (in 2014) is the 4th most active port in Europe (in terms of transshipments) after Rotterdam [Netherlands], Antwerp [Belgium], and Hamburg [Germany].

237. *Changing Times* (*The Kiplinger Magazine*). 1974. Now there's "meatless meat:" It cuts your food costs and may be healthier too. 28(2):53-54. Feb.
• ***Summary:*** Discusses textured vegetable proteins. "With the exception of the imitation bacon bits, such as Bac-Os from General Mills and Stripples from Worthington Foods, the textured vegetable proteins have not been available on most supermarket shelves. Now you can expect to see more of them...

"The big breakthrough for textured vegetable proteins came in February 1971 when the U.S. Department of Agriculture approved their use in the national school lunch program. Soy proteins, fortified with vitamins and minerals, can replace up to 30% of the meat in patties, stews, poultry and fish dishes served for school lunches...

When meat prices soared, soy processing companies began to market a new class of nutritious, dehydrated meat extenders in two- to three-ounce "envelopes," similar to dry soup. They are often sold near the meat counter or with "other semiprepared dinner mixes, such as Hamburger Helper. The packets may contain natural soy crumbles or caramel-colored granules that blend well with beef. They also come unflavored, so you can add your own seasonings, or preseasoned..."

Note: This is the earliest English-language document seen (Aug. 2011) that uses the term "soy crumbles," probably to refer to small chunks of textured soy flour.

"Last summer, a midwestern food chain took a full-page newspaper ad to inform shoppers of the advantages of TVP, the trademark for Archer Daniels Midland's product...

"Late last year Cargill, Inc., a large grain company, entered the consumer market in the Southwest with Burger-Plus, a lightly seasoned textured soy protein. It test-marketed three-ounce packages at two for 49 cents. Each package of mix and water stretched a pound of ground beef to a pound and a half. Other recent market entries include Grand Union's seasoned and unseasoned 'meat' mixes, General Mills's Burger Builder and A.E. Staley's Burger Bonus. More firms plan to package soy products."

238. *Soybean Digest.* 1974. Soy food processing facilities expanded. Feb. p. 34.
• ***Summary:*** "A.E. Staley Mfg. Co. of Decatur, Illinois, and Cargill Soja Industrie N.V., Amsterdam, the Netherlands, have announced plans to build large soy foods processing facilities." Ad Blankestijn is the general manager of Cargill Soja. The new Cargill Soja plant should be operating some time in 1974. The expansion will mark Staley's entrance into the soy protein concentrate business. Staley has been a prominent producer of soy flour since 1926. Work on the Staley expansion, which will also soy flour and soy protein concentrate, will be partially completed within 12 months, with all phases operational by 1975.

239. Spicola, James R. 1974. Trends in consumption of soybeans and soybean products. *Tennessee Valley Authority, Bulletin* Y-69. p. 6-10. March. Soybean Production, Marketing and Use. Muscle Shoals, AL: TVA.
• ***Summary:*** Introduction. Historical developments. Relating past to future. Some projections.

The 5 main reasons responsible for the phenomenal growth in soybean product [meal and oil] consumption since World War II are: 1. Economic prosperity. 2. Rapid increase in consumption of meat, poultry and dairy products, leading to increased use of soybean meal. 3. Soybeans have taken over land from surplus crops such as wheat, feed grains, and cotton. 4. Good conditions for and expansion of food commodity trade with few barriers and reduced handling and transportation costs. 5. Advances in the technology for converting grains and protein feeds to meat.

"For example, scientific feeding management has reduced the amount of feed necessary to produce a pound of broiler from 4.9 lb in the late 1940s to 2.1 lb today. Substantial technological advances were also made in the processing and distribution of the meat produced, particularly broilers. These advantages obviously reduced the relative cost to the consumer.

"These five factors have been the principal underlying conditions that have made it possible for soybean meal consumption in the U.S. to expand from about 5 million tons in 1953 to over 13 million tons in 1973; for U.S. soybean meal exports to grow from less than 400,000 tons to 5 million tons in 1973 (figure 2). Domestic soybean use increased from 250 million bu in 1953 to 1.1 million bu in 1973 and soybean exports increased from 40 million bu in 1953 to 479 million bu in 1973 (figure 3).

"Paralleling the expansion in soybean meal consumption was a steady growth in the consumption of soybean oil. This trend also resulted from the factors listed previously, but most importantly from the diet shifts. First of all, total fat consumption in the U.S. has increased from 45 lb per capita

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in 1953 to 53.3 lb in 1973. This has been largely the result of the substantial increase in the consumption of convenience foods prepared outside the home, many of which require substantial quantities of fat in their preparation" (p. 7). Address: Group Vice President, Cargill, Inc.

240. *Journal of Commerce* (*London*). 1974. Netherlands to build 3 new soya factories. July 9.
• ***Summary:*** According to the Algemene Bank Netherlands, the factories for processing soybeans for direct human consumption will be constructed by Unilever, Archer Daniels Midland Co. (USA), and Cargill Soya Industry B.V. (a subsidiary of the American company). Two factories will be near Rotterdam and the third near Amsterdam.

Cargill Soya B.V. already crushes about 1 million tons of soybeans per year to make oil and meal; the company's new factory will make at least 15,000 tons of textured soya protein and 50,000 tons of soya flour. The Unilever plant will make about 30,000 tons/year of soy protein concentrate. ADM has recently acquired the Dutch firm Oliefabriek De Ploeg which processes about 85,000 tons of soybeans a year; this plant will be expanded.

The Netherlands is centrally located in relation to EEC product markets and Rotterdam is the center of European oilseed trading and crushing.

241. Formo, Marvin W.; Honold, G.R.; MacLean, D.B. 1974. Determination of soy products in meat-soy blends. *J. of the Association of Official Analytical Chemists* 57(4):841-46. July. [29 ref]
• ***Summary:*** "The concentrations of various elements and fiber in ground beef and textured soy flour were measured, respectively, by atomic absorption spectrophotometry and a modified AOAC fiber method."

"Soy protein concentrate is used extensively in sausage products. Its flavor is better than that of soy flour and, in addition, the concentrates provide important functional benefits such as moisture absorption, juice holding, and fat binding. Three types of soy protein concentrates are available commercially, and each is prepared by a different extractive technique, using acid at the isoelectric point, aqueous alcohol, or water extraction of flakes which have been denatured by moist heat." Address: 1. Cargill Inc., Cargill Building, Minneapolis, Minnesota 55402; 2. General Mills, Inc., James Ford Bell Technical Center, 9000 Plymouth Ave., N., Minneapolis, Minnesota; 3. Minnesota Dep. of Agriculture, St. Paul. 55155.

242. Adolphson, L.C.; Horan, F.E. 1974. Textured vegetable protein products as meat extenders. *Cereal Science Today* 19(10):441-44, 446. Oct.
• ***Summary:*** "During the 1971-72 school year, about 23 million pounds of textured soy protein (hydrated) were used; in 1972-73 the amount was doubled; and during the past school year an estimate is that at least 50 million pounds (hydrated) were employed...

"In order for the commercial manufacturers to have a common goal in the development of novel protein systems, such as textured vegetable protein products, a number of industrial companies have banded together to form the Food Protein Council (Food Protein Council, Suite 1150, 1730 Pennsylvania Ave., N.W., Washington, D.C. 20006. George M. Perrin, Executive Secretary).

"The council consists of the following regular members: Archer Daniels Midland Co.; Cargill, Inc.; Central Soya Co., Inc.; Far-Mar-Co, Inc.; General Mills, Inc.; Grain Processing Corp.; Griffith Laboratories; Lauhoff Grain Co.; Miles Laboratories, Inc.; National Protein Corp.; Procter & Gamble Co.; Ralston Purina Co.; A.E. Staley Manufacturing Co.; and Swift Edible Oil Co."

A photo shows the two authors, with a brief biography of each. Address: Archer Daniels Midland Co., Decatur, Illinois.

243. Predicasts, Inc. 1974. World manufactured soybean foods. Special Study No. 108. Predicasts, Inc., 200 University Circle Research Center, 11001 Cedar Ave., Cleveland, OH 44106. vi + 93 p. Dec. 24. No index. 28 cm. Research Analyst: Frederick M. Ross.
• ***Summary:*** Contents: 1. Introduction. 2. Summary. 3. Economics of Soybean Foods: Soybeans, soy flour, meat extenders (based on extruded textured soy flour), synthetic meat (based on spun isolates). 4. Industry structure: General, $1,000 million food and feed giants (ADM, Cargill, Central Soya, General Mills/Takeda Chemical, Nabisco, Ralston Purina/Fuji Oil, and Esmark [Swift]), other major manufactured soy food companies (Unilever, General Host [New York], Miles Laboratories/Worthington & Kyowa Hakko Kogyo, A.E. Staley Mfg. Co., Stange [Chicago, Illinois], Chambers & Fargus [Humberside, England]), food industry structure. 5. Demand for manufactured soybean products: Demand for meat & substitutes, supply of natural meat, demand for meat substitutes, demand for soy flour. 6. North America: United States, Canada. 7. Latin America: General, Argentina, Brazil, Mexico, Other Latin America (Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay). 8. West Europe: General, France, West Germany, Italy, Spain, United Kingdom, Other West Europe. 9. East Europe: General, Hungary, Poland, USSR, Other East Europe. 10. Africa: General, Egypt, Nigeria, South Africa, Other Africa & Mideast. 11. Asia: General, China, India, Indonesia, Japan, Pakistan, Other Asia. 12. Oceania: Australia, New Zealand, Other Oceania.

Most sections contain numerous tables, mostly on meat and meat substitute consumption, and raw protein consumption, by country. Address: 200 University Circle Research Center, 11001 Cedar Ave., Cleveland, Ohio 44106. Phone: 216-795-3000.

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244. Predicasts, Inc. 1974. Unilever (Document part). In: World Manufactured Soybean Foods. Special Study No. 108. 1974. Predicasts, Inc., 200 University Circle Research Center, 11001 Cedar Ave., Cleveland, OH 44106. See p. 12.
• ***Summary:*** "Unilever, the European manufacturing, chemicals, drugs and food conglomerate with 1973 sales of almost $11 billion, is the largest firm in the world currently involved with soy-derived protein foods. Unilever is the European pace setter in soy protein food research. Although proposed joint venture plans with Archer-Daniels-Midland and Cargill have been denied, Unilever is proceeding with its own plans to build a 30,000 ton-per-day soy protein food plant of its own at Zwijndrecht, Netherlands, via its Unimills subsidiary. The firm already maintains soy food research facilities in the Netherlands, the United Kingdom and elsewhere in Europe." Address: Cleveland, Ohio.

245. Leading processors of soybeans, 1972-73. 1974. See p. 71
• ***Summary:*** This two-part table is Exhibit 39 of an unknown document. The two sources of the information are Lehman Brothers Estimates, and USDA. In 1972-72 (the crop year begins in September) an estimated 722 million bushels of soybeans were crushed in the United States. Estimates of the number of bushels crushed by major U.S. soybean crushers is as follows:

Cargill 130 million bushels. 18.0% of industry total.

Archer-Daniels- Midland 120 million bushels. 16.6% of industry total.

Central Soya 90 million bushels. 12.5% of industry total.

Ralston-Purina 70 million bushels. 9.7% of industry total.

Esmark [Swift] 55 million bushels. 7.6% of industry total.

Staley, A.E. 55 million bushels. 7.6% of industry total.

Anderson Clayton 40 million bushels. 5.5% of industry total.

Allied Mills 35 million bushels. 4.8% of industry total.

Others 127 million bushels. 17.6% of industry total.

Part II of the table shows the growing consolidation in the soybean crushing industry:

Year: 1954-55. Crushings (million bu.): 241.4. Four largest companies: 41% of total. Eight largest companies: 64%. Twenty largest companies: 89%.

Year: 1958-59. Crushings (million bu.): 398.8. Four largest companies: 40% of total. Eight largest companies: 63%. Twenty largest companies: 86%.

Year: 1963-64. Crushings (million bu.): 436.8. Four largest companies: 50% of total. Eight largest companies: 70%. Twenty largest companies: 88%.

Year: 1967-68. Crushings (million bu.): 576.4. Four largest companies: 55% of total. Eight largest companies: 76%. Twenty largest companies: 94%.

Year: 1972-73. Crushings (million bu.): 721.9. Four largest companies: 56%* of total. Eight largest companies: 82%*. Twenty largest companies: 97%*. * = Estimates.

246. Andreas, Dwayne O. 1975. Presentation on ADM. Paper presented to the New York Society of Security Analysts. 11 p. Jan. 21. Unpublished manuscript.
• ***Summary:*** Mr. Andreas has been processing soybeans and other agricultural commodities constantly since 1938. Four of ADM's top executives come from competing companies: Mr. Walker from Ralston [Purina], Mr. Burket from Central Soya, Mr. Randall from Cargill, and Mr. Bean from Anderson-Clayton. In 1965, thanks to an entirely new technology that was developing for soybean processing, ADM was transformed from a conglomerate into a non-conglomerate focusing on food technology. "Thanks to a great job that had been done in research, ADM received basic patents on TVP (Textured Vegetable Protein; TVP is a registered trademark). This knowledge was immediately commercialized and TVP has been very successful... it is now produced by some 12-13 different companies."

"The Marshall Plan developed Western Europe and Japan into the greatest cash customers that the United States ever had... This global internationalizing of food distribution had the effect of disorienting much of the entire food processing industry. That is, a plant that was not located so that it had access to the world markets might have become worthless or obsolete overnight. And dozens did."

Currently ADM has about 17% of the soybean processing business in the U.S., 17% of the wheat milling, 25% of the barley malting, 25% of the margarine oil business, 30% of the linseed oil, and 27% of the durum flour business (the basic flour for making pasta products).

A four-horse team is pulling ADM in a certain direction for the future. "One is the edible soy business which includes our TVP and soy flours, in which we are the leaders, and will soon include our soy protein concentrates. It is inevitable that edible soy proteins will increase in use over the next 20 years by leaps and bounds on a worldwide basis. And it is for no other reason than economic compulsion. The cost of making good quality high protein edible products out of soy is so low compared to other protein sources that it is just a matter of how long it will take the food companies to learn how to use it in more ways. In the soy flour business many soy flours are now being used to replace dried milk products just as margarine once replaced butter and this use is due to grow substantially in the next few years. The soy fortified bread and roll products you saw today are examples of how protein levels can be boosted by 50% with little or no increase in cost. ADM is the largest producer in the world of soy flour.

"TVP business has an enormous potential, maybe largely outside of the United States. In every country where there is a balance of payments problem, and where they are importing meat, we get a terrific tail wind from the

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government in selling TVP...

"The second thing going in our favor is the continuing worldwide expansion of the margarine business. Margarine is replacing butter, and that's a trend that is unstoppable. This trend is fundamental to our business, since about eighty percent of all of our fats and oils, corn oil, soybean oil, go in margarine.

"A third part of our business which has almost unlimited future growth is the soybean meal portion, where we make a refined [dehulled] grade of soybean meal that's used by the poultry industry all over the world. Under today's technology, poultry is by far the cheapest form of meat that's commercially produced. It will expand very much faster than either pork or beef, because it's so much cheaper and so easy to produce, and that business will continue to grow enormously, worldwide.

"The fourth horse of our four-horse team is the corn refining business." We produce corn syrup and fructose [two different products], which are experiencing very rapid growth in demand. Two other very good firms, Standard Brands and the A.E. Staley Co. are now producing fructose, but suddenly most of the soft drink people have decided to use fructose, creating an enormous demand. So "we changed our plans and now plan to produce about 480 million pounds of fructose by next winter and to double that by sometime in 1976."

So the four-horse team pulling ADM into the future is edible soy products, margarine, soybean meal, and refined corn sweeteners (corn syrup and fructose). Address: Chairman and CEO of ADM.

247. Rothschild, Emma. 1975. A reporter at large [The world food economy and the 1974 World Food Conference near Rome, Italy]. *New Yorker.* May 26. p. 40-44, 49-50, 52, 54, 56, 58, 62-66, 68-70, 72-73, 76. See p. 50, col. 3.
• ***Summary:*** The world is in the midst of a food crisis. To many it seems to be a result of drought and natural disaster. But actually is a "sign of lasting insecurity in the world food economy. It is political and economic, and it could have been avoided." As with petroleum problems, it has been "caused by the decisions and policies of people and governments."

The World Food Conference, convened in November 1974, brought together more than 5,000 delegates including many high government officials. From the USA: Henry Kissinger (secretary of state), Earl Butz (secretary of agriculture), and Dr. Don Paarlberg (chief economist at the USDA). The Flanigan Report tried to analyze the world food crisis. William R. Pearce, a vice-president of Cargill, Inc., "said that in the nineteen-sixties the United States 'had excess capacity in corn and soybeans,' and therefore set out to encourage the development of a different diet pattern around the world.'" It encouraged the use of feed grains in meat production. American grain exports increased from 32 million tons in 1971 to 76 million in 1973. Canada and Australia also had huge grain exports. The USSR, Japan, and the European countries (collectively) each now feeds more than 100 million tons of grain to its animals. The USDA had succeeded in reducing U.S. surpluses.

248. *Soybean Digest.* 1975. Austrian nutritionists visit U.S. July. p. 25.
• ***Summary:*** "The ability of the U.S. to provide a steady supply of soybeans for overseas customers was stressed to members of a team of Austrian animal nutritionists who visited this country during the latter half of June.

"The study trip, arranged by ASA in cooperation with USDA's FAS, also focused on the improvement of livestock and poultry production through the use of modern soybean meal-based rations, according to Dr. Keith Smith, ASA animal nutritionist.

"Smith explained that Austria relied heavily upon soybean imports from the U.S. prior to the July 1973 export embargo on soybeans, but that the embargo prompted the Austrian Government to look elsewhere for the country's oilseed needs.

"'We tried to convince these men that the embargo was a mistake our government will not repeat and that the United States can produce an ample supply of soybeans for both domestic and foreign customers,' said Smith.

"The team included an official of the Austrian Ministry of Agriculture, a college agriculture professor and two officials of a major mixed feed producing firm.

"In the Amarillo, Texas, area, they reviewed cattle feeding on the High Plains and visited Producers Grain Corp. In the Plainview area, they visited the Jimmy Dean Sausage Plant, confinement swine operations and the farm of ASA President W.B. Tilson. They also met with members of the animal science department at Texas Technological Univ. in Lubbock.

"In the Fayetteville, Arkansas, area, the team visited with researchers at the Univ. of Arkansas, viewed Tyson livestock and poultry operations and the Cargill turkey processing plant.

"The Austrian team visited soybean industry officials and universities in Missouri and Illinois."

249. *Food Processing* (*Chicago*). 1975. Protein update: Guides to protein products and companies. Aug. p. 28, 33-34, 36, 38, 40-41, 44, 48, 50.
• ***Summary:*** Discusses soy protein products made by: ADM, Baltimore Spice, Cargill, Carnation Co., Central Soya Co., Custom Food Products Inc., DMI Inc., Far-Mar-Co., General Mills, Grain Processing Corp., Griffith Laboratories, Industrial Grain Products Ltd., Lauhoff Grain Co., Miles Laboratories, Nabisco, National Protein Corp., Paniplus Co., Ralcon Foods, Ralston Purina, Staley (A.E.) Co. (Protein Div.), Swift & Co. Details on how each product can be used and a complete address for each company are given.

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Note: A table (p. 25) shows what soy proteins are available from what companies. For example: General Mills, Inc. (Minneapolis, Minnesota): Makes spun and textured vegetable protein products. "Spun protein is produced from soy isolate base and is used in products such as frozen ham dices and frozen chicken dices and chunks." Recently the company has developed a patented process for Steam Texturization of protein. The product has a clean taste and comes in a range of particle sizes. Its texture is very similar to that of pork, beef, poultry and seafood. "Products are available to meet specific application needs with regard to texture, flavor, color, size, and nutrition. Products can also be produced to retain many times their weight of moisture."

Grain Processing Corp. (Muscatine, Iowa): A line of soy protein concentrates with 70% protein. Two new soy protein isolates, including high and low solubility products, with 90% protein, are spray dried, free flowing powders.

Griffith Laboratories (Chicago, Illinois): Soy protein concentrate, powdered and granular structured. The latter is recommended as a meat extender in meat patties since it imparts texture, binding characteristics, moisture retention and extra nutrition. This textured soy concentrate is also "available in any number of seasoning blends." Address: Assoc. Editor.

250. Food Systems Branch and Research Branch, Agriculture Canada; Grain Marketing Office. Industry, Trade and Commerce. 1975. U.S. Food Protein Council (Document part). In: Plant Proteins in Canada: Utilization for Human Food. 1975. Canada. iii+ 163 p. See p. 50. Sept. 28 cm. [1 ref]

• ***Summary:*** The three objectives of the Council are listed. "Members of the Council include: Archer Daniels Midland, Cargill, Central Soya, Far-Mar-Co., General Mills, Griffith Laboratories, Lauhoff Grain, Miles Laboratories, National Protein, Ralston Purina, A.E. Staley, Swift, Honeymead Products, Riceland Foods, Pfizer, and Nestlé."

Source: Grain Marketing Office, Trade Commissioner Service of I.T. & C. [Department of Industry, Trade and Commerce]. Address: Canada.

251. *NACLA's Latin America and Empire Report.* 1975. Cargill: Harvest of profits. 9(7):21-29, 31. Oct. [16 ref]

• ***Summary:*** "Cargill figures prominently in Brazil's emergence in the early 1970's as one of the world's largest soybean producers. Aside from engaging in the soybean export trade, Cargill built one of the world's most modern soybean processing facilities in Ponta Grossa, Brazil. Once again, timely backing from the U.S. government aided Cargill's expansion. The Overseas Private Investment Corporation (OPIC) lent Cargill Agricola $2.5 million for the soybean processing plant, while the Eximbank has helped out on three separate occasions with loans totaling over $1 million.

A large table titled "Cargill's Foreign Food Processing Subsidiaries" includes four soybean plants:

(1) Founded or purchased in Spain in 1963, it began production in 1965.

(2) Founded or purchased in Holland in 1966.

(3) Founded or purchased in France in 1970, it is a joint venture with European firms.

(4) Founded or purchased in Brazil in 1972.

252. National Soybean Processors Association. 1975. Year book and trading rules 1975-1976. Washington, DC. ii + 103 p.

• ***Summary:*** On the cover (but not the title page) is written: Effective October 1, 1975. Contents: The National Soybean Processors Association [Introduction and overview]. Constitution and by-laws. Officers and directors. Executive staff. Members. Standing committees. Food Protein Council. Trading rules on soybean meal. Sales contract. Appendix to trading rules on soybean meal: Official methods of analysis (moisture, protein, crude fiber, oil {only method numbers listed}, sampling of soybean meal {automatic sampler, probe sampler}), official weighmaster application, semi-annual scale report, official referee chemists (meal). Trading rules on soybean oil. Sales contract. Definitions of grade and quality of export oils. Soybean lecithin specifications. Appendix to trading rules on soybean oil: Inspection, grading soybean oil for color (N.S.P.A. tentative method), methods of analysis (A.O.C.S. official methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses; soap stock, acidulated soap stock and tank bottoms (only method numbers listed), official weighmaster application, semi-annual scale report, official referee chemists (oil). Soybean oil export trading rules. Foreign trade definitions (for information purposes only).

The page titled National Soybean Processors Association (p. ii) states: "The NSPA is the professional association of America's soybean processors. Its members process and market more than 95 percent of all soybean crushed within the continental U.S. From nearly 85 processing centers, in every major soybean producing region of the nation, NSPA members service America's agricultural community.

"During the past crop year about 700,000,000 bushels of soybeans moved through processing plants of NSPA's 33 member firms. Approximately 60 percent of America's 1.2 billion-bushel soybean crop is bought and processed by NSPA members. Exporters account for another 32 percent of the crop, and the remainder [8%] is returned to farms for seed, feed, and residuals." Also discusses industry programs, soybean research, and international market development.

The section on officers, executive committee, and board of directors (p. 7-8) gives the name, company affiliation, and phone number of each person. Officers–President: Lowell K. Rasmussen, Honeymead Products Co. Vice President: John G. Reed, Jr., Continental Grain Co. Secretary: Stiles

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M. Harper, Southern Soya Corporation. Treasurer: T.J. Suelzer, Central Soya Co. Immediate past president: James R. Spicola, Cargill, Inc. Executive Committee: Donald B. Walker (‘77), ADM. James R. Spicola, Cargill. Thomas J. Suelzer, Central Soya. John G. Reed, Jr., Continental. Martin Hinby (‘76), Cook Industries.

Board of Directors (alphabetically by company; each member company has one representative on the board): Thomas H. Wolfe, Anderson, Clayton & Co. Donald B. Walker, Archer Daniels Midland Co. George H. Heinz, Buckeye Cellulose Corp. John Fallon, Bunge Corporation. James R. Spicola, Cargill, Inc. Thomas J. Suelzer, Central Soya Co., Inc. John G. Reed, Jr., Continental Grain Co., Martin Hilby, Cook Industries. Joe C. Givens, Dawson Mills. Alfred Jenkins, Delta Cotton Oil & Fertilizer Co. John A. Dotson, Far-Mar-Co., Inc. Kenneth E. Sullivan, Farmers Grain Dealers Assn. of Iowa. Donald M. Chartier, Farmland Industries, Inc. Gaylord O. Coan, Gold Kist Inc. Lowell K. Rasmussen, Honeymead Products Co. David C. Thompson, Krause Milling Co. Kenneth J. McQueen, Land O’Lakes, Inc. Floyd W. Brown, Lauhoff Grain Co. Kermit F. Head, Missouri Farmers Assn.–Grain Div. James A. Smith, National Protein Corp. Robert E. Hicks, Owensboro Grain Co., Inc. Frank P. Perdue, Perdue Incorporated. John H. Payne, Planters Manufacturing Co. William T. Melvin, Planters Oil Mill, Inc. Theodore W. Bean, Quincy Soybean Co. E.J. Cordes, Ralston Purina Co., W.L. Knoll, Riceland Foods, Inc. J.D. Morton, Sherman Oil Mill. Stiles M. Harper, Southern Soya Corp. James W. Moore, A.E. Staley Mfg. Co. W.W. Moore, Swift Edible Oil Co. Preston C. Townsend, Townsend’s Inc. Tyler Terrett, West Tennessee Soya Mill, Inc.

Executive office, Washington, DC: Executive Director, Sheldon J. Hauck. Director, Public Affairs: Jack DuVall. Administrative Asst.: Jean N. Sullivan. National Soybean Crop Improvement Council: Robert W. Judd, Managing Director. General counsel: Edward H. Hatton, Esq., Jenner & Block, Chicago, Illinois.

Members (listed alphabetically by company; within each company, first the name of the official Association representative {who is on the Board}, followed by the other personal members listed alphabetically by surname. For example, Archer Daniels Midland Co., the company with the most personal members, has 24. After the name of each personal member is given his address and phone number. In the listing below, the number of personal members is shown in parentheses after the name of each company, followed by city and state of the various locations): Anderson, Clayton & Co. (6); Phoenix, Arizona; Osceola, Arkansas; Jackson, Mississippi; Vicksburg, Mississippi; Houston, Texas. Archer Daniels Midland Co. (24); Decatur, Illinois; Galesburg, Illinois; Granite City, Illinois; Fredonia, Kansas; Mankato, Minnesota; Red Wing, Minnesota; St. Louis, Missouri; Fremont, Nebraska; Lincoln, Nebraska; Kershaw, South Carolina. Buckeye Cellulose Corp. (8); North Little Rock, Arkansas; Augusta, Georgia; Cincinnati, Ohio; Memphis, Tennessee. Bunge Corporation (5); St. Louis, Missouri; New York City, New York; Cargill, Inc. (15); Gainesville, Georgia; Cedar Rapids, Iowa; Des Moines, Iowa; Sioux City, Iowa; Washington, Iowa; Chicago, Illinois; Wichita, Kansas; Minneapolis, Minnesota; Fayetteville, North Carolina; Memphis, Tennessee; Chesapeake, Virginia. Central Soya Co., Inc. (11); Chicago, Illinois; Gibson City, Illinois; Decatur, Indiana; Fort Wayne, Indiana; Indianapolis, Indiana; Belmond, Iowa; Marion, Ohio; Bellevue, Ohio; Delphos, Ohio; Chattanooga, Tennessee. Continental Grain Co. (8); Guntersville, Alabama; Chicago, Illinois; Taylorville, Illinois; New York City, New York; Cameron, South Carolina. Cook Industries (12); Pine Bluff, Arkansas; Emporia, Kansas; Marks, Mississippi; Memphis, Tennessee. Dawson Mills (3); Dawson, Minnesota. Delta Cotton Oil & Fertilizer Co. (1); Jackson, Mississippi. Far-Mar-Co., Inc. (1); St. Joseph, Missouri. Farmers Grain Dealers Assn. of Iowa (Cooperative), Soybean Processing Div. (1); Mason City, Iowa. Farmland Industries, Inc. (3); Van Buren, Arkansas; Sergeant Bluff, Iowa; Kansas City, Missouri. Gold Kist Inc. (3); Atlanta, Georgia. Honeymead Products Co. (3); Mankato, Minnesota. Krause Milling Co. (2); Milwaukee, Wisconsin. Land O’Lakes, Inc. (3); Fort Dodge, Iowa; Sheldon, Iowa. Lauhoff Grain Co. (1); Danville, Illinois. Missouri Farmers Assn.–Grain Div. (4); Mexico, Missouri. National Protein Corp. (2); Champaign, Illinois; Chicago, Illinois. Owensboro Grain Co., Inc. (1); Owensboro, Kentucky. Perdue Incorporated (2); Salisbury, Maryland. Planters Manufacturing Co. (2); Clarksdale, Mississippi. Planters Oil Mill, Inc. (1); Rocky Mount, North Carolina. Quincy Soybean Co. (4); Quincy, Illinois. Ralston Purina Co. (8); Bloomington, Illinois; Lafayette, Indiana; Iowa Falls, Iowa; Louisville, Kentucky; St. Louis, Missouri; Raleigh, North Carolina; Memphis, Tennessee. Riceland Foods, Inc. (8); Helena, Arkansas; Stuttgart, Arkansas. Sherman Oil Mill (1); Fort Worth, Texas. Southern Soya Corp. (1); Estill, South Carolina. A.E. Staley Manufacturing Co. (8); Decatur, Illinois. Swift Edible Oil Co., Div. of Swift & Co. (1); Chicago, Illinois; Townsend’s Inc. (2); Millsboro, Delaware. West Tennessee Soya Mill, Inc. (1); Tiptonville, Tennessee.

Associate Members: Anderson Clayton Foods, Dallas, Texas. Best Foods Div. of CPC International Inc., Englewood Cliffs, New Jersey. Canadian Vegetable Oil Processing Co., Hamilton, Ontario, Canada. Capital City Products Co., Div. of Stokely-Van Camp, Inc., Columbus, Ohio. I.H. French & Co., Champaign, Illinois. General Mills, Inc., Minneapolis, Minnesota. Glidden-Durkee, Div. of SCM Corporation, Chicago, Illinois (Gerald J. Daleiden). Grain Processing Corp., Muscatine, Iowa (H.P. Woodstra). Hartsville Oil Mill, Hartsville, South Carolina (Richard A. Koppein). Humko Products, Memphis, Tennessee. Hunt-Wesson Foods, Inc., Fullerton, California. Kraft Foods Div.

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of Kraftco Corp., Chicago, Illinois. Lever Brothers Co., New York City, New York. Maple Leaf Mills Ltd., Toronto, Ontario, Canada (W.G. Milliken). Procter & Gamble Co., Cincinnati, Ohio. Quaker Oats Co. (The), Chicago, Illinois. Schouten International, Inc., Minneapolis, Minnesota. Southern Cotton Oil Co., New Orleans, Louisiana. Southern Feed Ingredients Co., Memphis, Tennessee. Wilsey Foods, Los Angeles, California.

Standing committees: For each committee, the function of the committee, the names of all members (with the chairman designated), with the company and company address of each are given–Crop Improvement Council. Meal trading rules. Oil trading rules. Safety and insurance. Soybean Research Council. Technical. Traffic and transportation. Food Protein Council (Objective and rules adopted 3 March 1971, amended 5 Nov. 1971). Address: 1800 M St., N.W., Washington, DC 20036. Phone: (202) 452-8040.

253. Anthan, George. 1975. How U.S. promotes Brazilian soybeans. *Des Moines Register* (*Iowa*). Nov. 19.
• ***Summary:*** Cargill Agricola, a wholly owned subsidiary of Cargill, Inc. of Minneapolis, Minnesota, received direct loans and loan guarantees totaling more than $3 million from two agencies of the U.S. government: the Overseas Private Investment Corp (OPIC) and the U.S. Export-Import Bank. The money was used by Cargill to finance construction of soybean processing facilities in Brazil, but on the condition that the Brazilian soybean products would not be exported to the USA. Cargill now figures prominently in Brazil's recent emergence as one of the world's largest soybean producers.

254. Cargill, Processing Group. 1975. Small world (Ad). *Soybean Digest.* Dec. p. 15.
• ***Summary:*** A full-page ad. In the middle is a horizontal soybean pod containing 5 beans. One of these looks like Planet Earth.

At 40 different locations around this world of ours, Cargill conducts research. An important part of it is searching out new uses of soybean meal and oil products. Scores of new and improved nutritional and industrial uses we've found are now available to people around the world. For you that means better markets for soybeans. Worldwide. Cargill has processing plants in these locations: San Francisco, California; St. Nazaire, France; Gainesville, Georgia; Amsterdam, Holland; Chicago, Illinois; Cedar Rapids, Iowa; Des Moines, Iowa; Sioux City, Iowa; Washington, Iowa; Wichita, Kansas; Port Cargill, Minnesota; Fayetteville, North Carolina; Tarragona, Spain; Reus, Spain; Memphis, Tennessee; Norfolk, Virginia; Minneapolis, Minnesota; Ponta Grossa, Brazil; Narrabri, Australia

In the lower center is the round Cargill logo. Address: Cargill Building, Minneapolis, Minnesota 55402.

255. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Osceola, Arkansas.
Date of Introduction: 1975.
Ingredients: Soybeans.
New Product–Documentation: *J. of the American Oil Chemists' Soc.* 1985. "Soy pioneer bows out, others grow bigger." March. p. 474, 476. Cargill has a soybean crushing plant in Osceola, Arkansas.

Lauser, Greg C. 1982. "History of Cargill's involvement in the soybean processing industry." Minneapolis, Minnesota. 5 p. Unpublished typescript. March 15. Courtesy Cargill, Inc. In 1975 Cargill acquired a soybean processing plant in Osceola, Arkansas.

256. Giovanna, Jasper Di. 1975? My recollections of I.D. ["Ike"] and early history of Illinois Soy Products Co. (Continued). Illinois? 22 p. Undated. Unpublished typescript.
• ***Summary:*** Continued: At Joe's suggestion, Ike entered the Illinois Soy Products Co. into membership with the National Soybean Processors Association. He even served on some Association committees. The secretary or president of NSPA at the time was Edward J. Dies, an author of agricultural or Wall Street subjects. He wrote several books about soybeans.

In about 1937 Ike had some meetings with a representative of a German company that designed and built solvent extraction plants for soybeans. At that time most of the industry capacity was of the expeller type (or hydraulic in the southern U.S.). A number of larger companies, including ADM in Decatur, were looking at solvent extraction plants. Eventually, after serious consideration, Ike decided against such a plant, apparently for three reasons: (1) He wanted to move to a better climate; (2) Extraction plants required considerable water and sewage usage, neither of which were easily obtainable at the plant site; (3) These plants were very expensive.

Ruth Sinaiko's maiden name was Grebler. Her parents moved from Wisconsin to Springfield to be near Ruth and Ike and for new business opportunities. This made everyone happy. Ike and Ruth adopted a baby girl. "They named her Jean and gave her all their love."

As time passed, the acreage planted to soybeans in the U.S., including Illinois, increased. The country began to come out of the Depression. Irving Rosen, a brother-in-law of Ike's, together with Joe and Alex Sinaiko, bought the soybean plant at Quincy. Max Albert, another brother-in-law, also with Joe Sinaiko's help, bought property at Galesburg, Illinois and made plans for a soybean processing plant.

These plants became successful and this made Ike happy. There were good relations between the various families and many get-togethers. Frequently Ike would take Jasper to these get-togethers. "They all treated me very affectionately. Joe and Ike would advise me of the virtues of working hard and of being honest and of keeping good

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morals and character. This impressed me very much and had much to do with how I handled myself."

"During this time, along with the rapid expansion of the livestock and poultry feeding there was a big jump in volume of pet food business, especially the dog food business. There was a growing acceptance of dry dog food which was relatively new in pet feeding. Soybean products were widely used in the manufacture or formulation of 'dry' dog food. Ike got the idea to make a Soya Pea-Sized Cake for use in Dog Food. This product was obtained by a screening process of the Soybean Cake after it left the Cake Crusher in our process. The Pea-Sized Cake was accepted and became a permanent part of the business of the Illinois Soy Products Company."

Ike also made a mixture of molasses with soybean cake for feeding cattle. Then he ordered and installed a "pellet machine" and made "Soybean Meal Pellets" for about a year. But neither of the two products was successful. Note: This is the earliest English-language document seen (June 2018) that contains the term "Soybean Meal Pellets" (regardless of capitalization).

Discusses Hitler's 1938 rise to power in Germany, his oppression of Jews, and the family of Eric Nadel of Hamburg. Eric and his wife came to Springfield and Ike hired him to work in the office. He also later helped Otto Langfelder.

Joe and Ike decided to start a soybean plant in Decatur, Illinois, because of the favorable freight rates and "milling in transit" privileges. Also large amounts of soybeans were grown in the surrounding area. They purchased the vacant Hight Elevator, an old concrete elevator situated on the I.C. railroad in an industrial area, and started Decatur Soy Products Co. It began production at harvest time in 1939. ADM's new solvent extraction plant was not ready until shortly afterwards.

When Germany invaded Poland and Britain [sic], and World War II began, the commodity markets exploded. The war helped the soybean industry to grow, and most processors thrived. Decatur Soy Products was a financial success its first year.

During the 1930s, the U.S. was a net importer of fats and oils. Most of the imports came from Southeast Asia. After the Japanese bombed Pearl Harbor, these imports stopped. The U.S. government took emergency action to increase our supply of oils and fats by a big increase in the planting of soybeans and other oilseeds. Their program included control of the soybean processing industry by the U.S. Commodity Credit Corporation (CCC). After many meetings, a plan was developed which put all soybean processors under contract with CCC. This contract fixed the profit margins of the processors, and controlled the prices processors could pay for soybeans or charge for products. Ike played a role in these negotiations and his views were respected. The profit margin was good and processors, with few exceptions, prospered. Through these meetings and related NSPA meetings Ike became well acquainted with the leaders of the Industry as well as the CCC and he attended many of the meetings where decisions were made. A few of these people were Soybean Johnson of Purina, Gene Funk of Funk Brothers Seed Company, Ed. Sheiter of A. E. Staley Mfg. Company, Dwayne Andreas of Honeymead Products, Ralph Goldseth of the Glidden Company, Clive Marshall of Allied Mills, Hank Lloyd of U.S. CCC, Ed Dies of the N.S.P.A. Mr. Shellabarger of The Shellabarger Soybean Processing Company."

The War created a major expansion in the livestock and poultry industries, and also in the usage of fats and oils, not only in the U.S. but in countries allied with us. Therefore soybean acreage grew rapidly and processing capacity grew with it. Yes despite this expanded capacity, demand for products was greater than supply. Because of the mushrooming demand for feeds, the availability of formula feeds was limited by the feed company's ability to buy proteins. Soybeans had become the single largest U.S. source of protein for the feed makers. Some processing firms began to hold back on selling proteins to the trade so they could increase their production of feeds, and some even used this advantage to enter the formula feed business. The feed firms that found their protein supplies completely or partially cut off were desperate to obtain supplies. Most of the processors, including Illinois Soy Products Co. and Decatur Soy Products Co. started allocation systems based on the previous year's usage. New customers could only be given an allocation as the processor's production expanded.

The leading U.S. grain company and exporter of grains, the Cargill Co., had recently entered the formula feed business. Since Cargill was not a soybean processor and found it difficult to buy enough soybean meal, Cargill decided to buy a going soybean processing business. Joe and Ike often visited and spoke with Julius Hendel of Cargill as well as some others prominent in Cargill's managing team, and Cargill's desire for a soybean plant was conveyed to Ike or Joe. After some preliminary talks, a deal was made for Cargill's purchase of the Illinois Soy Products Company. [in early 1944] The price paid was generous and afforded Ike and the other stockholders a very good capital gain. Cargill agreed to keep Eric Nadel and the other personnel on to help run their new acquisition.

"Following the sale of Illinois Soy Products Company, Ike made plans for moving his family and home to Los Angeles, California.

"Ike did not intend to retire. He scouted around in California for a business to buy or get into. There was an expeller-type soybean plant in Norwalk, California that was owned by The Glidden Company and which was closed-down. It had not operated for a while. Ike and Joe decided they could make a go of this business and they formed The Liberty Vegetable Oil Company, following purchase of the

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closed plant

"In the beginning Ike processed mostly soybeans and flax at The Liberty Vegetable Oil Company, but as time when along he learned to crush profitably such oil bearing seeds as safflower, copra, and off-grade walnuts ant other nuts which were in good supply in Southern California. Later, he put in a small scale refinery and produced refined oils for the cosmetic trade... This business was a success for Ike from the first year, though it took a good deal of doing on Ike's part."

257. *USDA Farmer Cooperative Service. FCS Research Report.* 1976. Appendix–Companies producing and distributing soy products. No. 33. p. 53-82. Jan. Edible Soy Protein: Operational Aspects of Producing and Marketing. [60 ref]

• ***Summary:*** Part I. "Companies producing and/or distributing under private label brands of textured vegetable protein products that meet the requirements of FNS Notice 219." (Note: FNS is USDA's Food & Nutrition Service). Lists every known company making such products (as of Sept. 1974), with the company address and the full name of each product. The following companies and brands are listed; (D) = Distributors: Allen Foods (D) Lasco; Archer Daniels Midland Co. TVP; Biggers Bros. (D) Farmbest Promate; Cargill Inc. Textratein; Central Soya Co. Inc. Promosoy, Centex; Continental Coffee Co. (D) Continental; Continental Organization of Distributor Enterprises, Inc. (D) Code Fortified; Embassy Grocery Corp. (D) Lucky Boy Pro-Tenda; Far-Mar-Co, Inc. Ultra-Soy; Federated Foods, Inc. (D) Parade Promate; First Spice Mixing Co., Inc. (D) Texite; Frozen Food Forum, Inc. (D) Frosty Acres; Galanides, Inc. (D) Galanides; General Mills, Inc. Bontrae (Frozen Hydrated or Dehydrated); Griffith Laboratories Griffith's GL-219, Promate, GSVP, GSPC; B. Heller & Co. (D) Heller's; Hollymatic Corp. (D) Hollymatic; Institutional Wholesalers, Inc. (D) Saxony; Lauhoff Grain Co., Inc. Vita-Pro; Marshall Produce Co. (D) Marshall; Miles Laboratories Maxten, Temptein; Nabisco, Inc. VMR I or II; National Institutional Food Distributor Associates, Inc. (D) NIFDA Promate; National Protein Corp. Textrasoy; National School-Pak (D) Promate; Nugget Distributors, Inc. (D) Nugget Promate, Nugget Magi-Pro; Oppenheimer Casing Co. (D) Textured Oppenheimer Pro; Portland Wholesale Grocery Co. (D) Preferred Stock; Ralcon Foods SPF-200; Ralston Purina Co. SUPRO; S.E. Rykoff & Co. (D) S.E.R.; John Sexton & Co. (D) Sexton Protein Plus; A.E. Staley Mfg. Co. Food Service Div. Nutra-Mate; A.E. Staley Mfg. Co. Mira-Tex; Swift Edible Oil Co. Swift's Texgran, SFP-TA, Burger-Aide I; Sysco Corp. (D) Sysco and Sysco Promate.

New additions to the list: Custom Food Products, Inc. (D) CFP; Miles Labs. Pro-Lean; Industrial Grain Products Ltd. Perplus; General Spice, Inc. Sotex.

Part II (p. 70-81). "Companies producing and/or distributing under private label acceptable textured vegetable protein product mixes." Alberto-Culver Co. Milani; Bernard Food Industries, Inc. Tex-Pro; Biggers Brothers Inc. Farmbest; Continental Organization of Distributor Enterprises CODE; Federated Foods, Inc. Red & White or Parade; Kraft Foods. Kraft School Lunch Chili Mix & Textured Vegetable Protein. Kraft School Lunch Sloppy Joe Mix & Textured Vegetable Protein. Footnote: The textured vegetable protein component of the Kraft mixes is Promate #500-SL or Promate #100-SL manufactured by Griffith Labs. Lawry's Foods, Inc. Stretch; Milwaukee Seasoning Laboratories, Inc. MSL TVP, Flavormate; National Institutional Food Distributor Associates, Inc. NIFDA; National School Pak; North American Laboratory Co., Inc. Magic Menu; Nugget Distributors, Inc. Nugget; Sysco; Williams Foods, Inc. Williams Expand; The Golden Dipt Co. Golden Dipt/DCA.

Note: The above product mixes are used in the Type A school lunch. Typical mixes are for chili mix, meat loaf or meatballs, patty mix, pizza sauce, sloppy joe, spaghetti sauce, or taco filling. The name of the manufacturer of the textured soy protein ingredient is given for each. Address: Farmer Cooperative Service.

258. Garino, David P. 1976. Foreign demand for soy protein is seen tied more to economics than nutrition. *Wall Street Journal.* May 17. p. 28 (East). Or West Coast ed. p. 22.

• ***Summary:*** "Foreign countries are developing quite an appetite for soy protein."

A shortage of meat in Poland has led the government to decree that Polish sausage and other meats contain soy protein.

International demand for soy protein is growing faster than U.S. demand say experts in the field.

Although soy protein is being used in an ever increasing number of foods, its main use continues to be as a meat extender and substitute, largely for economic rather than nutritional reasons. It generally takes 2-2½ lb of feed to produce one lb of chicken (live weight), 3½-4 lb of feed for one lb of pork, and 4-5 pounds of feed for one pound of beef–all live weight. So when feed prices rise, as they have in recent years, meat production becomes more costly and soy protein extenders look more attractive. Sales of soy protein isolates climbed 60% last year, following a gain of about 40% in 1974 according to Ralston Purina. In 1976 sales of textured soy flour in Europe are growing at 15-20% a year. West Germany doesn't permit use of soy protein in meat.

The percentage of disposable income spent on food is 18% in the USA, 25% in Western Europe, more than 25% in Eastern Europe, and about 40% in developing countries. Address: Staff Reporter.

259. Bastiaens, F.G. 1976. Oilseed flour for human food. *J. of the American Oil Chemists' Society* 53(6):310-15. June. [2

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ref]
• ***Summary:*** Soybean flour is the main flour discussed. Contents: Introduction. Pretreatment of the beans: Bean handling, bean drying and cleaning, dehulling. Extraction. Flash desolventizing, cooking, and cooling. Grinding of flour. Grit production. Many large flow sheets and flow diagrams show the key steps in the process. A small portrait photo shows F.G. Bastiaens. Address: Cargill Soja Industrie B.V., Amsterdam, Netherlands.

260. Multinational corporations and United States foreign policy. 1976. Hearing before the Subcommittee on Multinational Corporations, Senate Foreign Relations Committee. See Part II, p. 241. Held June 18, 23, 24. *

261. U.S. Congress, Senate Committee on Foreign Relations, Subcommittee on Multinational Corporations. 1976. Hearings on international grain companies. 94th Congress. June 18, 23, and 24. Part 16. *
• ***Summary:*** Cargill's Geneva-based Tradax network of "independent" foreign subsidiaries gives it maximum flexibility in arranging global transactions. As export markets have opened up around the globe, Tradax branches have expanded into 13 countries. Sales routed through the Panama "letter box" operation of the Tradax arm allow the firm to shelter billions. By Cargill's own account, from 1972 to 1974, when gross sales of the Panamanian subsidiary jumped from $775 million to over $2,000 million, it paid a total of only $3.5 million in U.S. federal taxes–thanks to a special exemption in corporate taxes for foreign subsidiaries engaged primarily in the export of U.S. agricultural commodities. Cargill's worldwide after-tax income jumped from $41 million in fiscal 1972 to $131 million in fiscal 1973 to $231 million in fiscal 1974–an increase of nearly 500% in just 2 years. Address: U.S. Senate.

262. *Wall Street Journal.* 1976. Cargill affiliate in Switzerland sells soybeans to Soviets. July 6.
• ***Summary:*** "Cargill Inc. said a Geneva affiliate, Tradax S.A., sold 37 million bushels of soybeans to the Soviet Union."

In Washington, the USDA said a U.S. grain company, which it didn't identify (presumably Cargill) agreed to sell the USSR 29 million bushels of soybeans for delivery in the marketing year beginning Sept. 1.

263. Robbins, William. 1976. Russians buying more soybeans: Second sale by an American grain company in recent days reported by U.S. Also from '76 harvest. Latest deal is for 700,000 tons, similarly specifying 'optional origin' basis. *New York Times.* July 7. p. 57.
• ***Summary:*** An American grain company [name unknown] has just sold 700,000 tons of soybeans, worth about $195 million, to the Soviet Union. On Friday, Cargill Inc. announced a million ton sale. In both cases, the soybeans can be supplied from "optional origins." "This means the soybeans could be shipped from harvests of foreign countries, depending on supplies, prices, and shipping situations, if the seller chooses."

264. Link, Bernard A. 1976. Textured soy protein products. In: Archer Daniels Midland Co., comp. 1976. Edible Soy Protein Seminar. Decatur, Illinois. 220 p. See p. 107-25. Held at Moscow, USSR and Warsaw, Poland. [8 ref] Address: Research Dep., Cargill, Inc., Minneapolis, Minnesota.

265. Koch, Carol. 1976. USSR, Polish seminars foundation for future contracts. *Soybean Digest.* Nov. p. 19.
• ***Summary:*** "'Edible soy protein seminars being conducted in Poland and the USSR are just the foundation on which we hope to build a future for soybean market development in these countries,' according to Dennis Blankenship, ASA director of market development.

"Conducted in late October, Blankenship remarked that these seminars marked the first time American industry could deal directly with prospective Soviet and East European customers on the topic of soy protein foods as a means of meeting world food needs. The seminars were jointly sponsored by ASA, the Food Protein Council and the Foreign Agricultural Service.

"Drawing together expert technicians in the production and application of various soy protein products, the seminars briefed government and institutional feeding officials on the uses soy could have in their nutritional programs. Delegates came from the USSR, Hungary, Poland, Romania, Yugoslavia, East Germany, Czechoslovakia and Bulgaria.

"Among, the speakers at the seminars was Richard Burket, Archer Daniels Midland. According to Burket, 'As an industry, the edible soy protein industry is rather young.' But as a food product, it finds uses ranging 'from basic [soy] flour to the textured products and are used in everything from bakery products to meat and dairy products.' It looks to be a growing market on an international basis, he contends, because soy protein provides an economic protein source that is versatile. It's biggest boost came from the U.S. Government when it's use was approved in school lunch programs thus opening the door to the growing institutional feeding market.

"One portion of the seminar discussed the nutritional aspects of soy protein products; the general manufacturing process plus composition, function and nutritional properties of soy flour and grits; textured soy protein products, and soy concentrates and isolates. Speaking to these topics, respectively, were Dr. Irvin E. Liener, Univ. of Minnesota; Dr. Donald Quass, Dawson Mills, Minnesota; Dr. Bernard Link, Cargill Inc., Minnesota; Dr. L.D. Williams, Central Soya Co., Illinois.

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"The second part of each seminar covered the various applications of soy ranging from consumer applications to bakery, meat and whipping applications plus a look at developments that may take place in the future. Chris Edwards, Ralston Purina S.A., Belgium, opened the discussion of soy applications and was followed by Robert Bartz, Nabisco Protein Foods, New Jersey; Dr. Morton S. Cole, Archer Daniels Midland, Illinois; William Readdy, Griffith Laboratories, Illinois; Jaap Van Son, A.E. Staley, The Netherlands; and Sheldon J. Hauck, Food Protein Council, Washington, D.C.

"Addressing both seminars on the future soybean supply prospects and technology available to U.S. soybean farmers were Dick Falb, ASA, and Gerald Michaelson, ASA president from Dawson, Minnesota.

Keynoting the Moscow meeting was U.S. Assistant Secretary of Agriculture Richard Bell, and U.S. Ambassador Richard T. Davies opened the Warsaw conference.

"A special 1-day seminar on soybean meal utilization followed the USSR meeting.

"Following an introduction to participants by Alan Trick, ag attache, Dick Falb, ASA, provided an overview of U.S. soybean production. Then the conferees were given the technical information for application of soybean meal in their livestock and poultry rations.

"Dr. Keith Smith, ASA animal nutritionist, discussed the production, composition and utilization of soybean meal; and Dr. Park Waldroup, Univ. of Arkansas, delineated current trends in amino acid nutrition.

"Dr. Vaughn Speer, Iowa State Univ., addressed the use of soybean meal and amino acid requirements for pregnancy and lactation in swine. Closing out this special conference was W.W. Cravens, Central Soya, discussing soybean meal usage in U.S. feed.

"With favorable reception of these seminars, both from the soy for human nutrition standpoint and for livestock rations, Blankenship says ASA hopes to be able to expand communication channels between the U.S. and these countries."

266. Solkoff, Joel. 1976. The grain drain: Cargill's private empire. *New Republic.* Dec. 18. p. 9-11.

• ***Summary:*** "'The confrontation between the multinational corporation and its enemies,' Richard J. Barnet and Ronald Muller write in Global Reach, 'promises to influence the shape of human society in the last third of the century more than any other political drama of our time.' This summer, while Frank Church was making an abortive run for the presidency, his Senate Subcommittee on Multinational Corporations provided the first real introduction to those who control the food we eat.

"The fact that six trading companies control over 90 percent of US grain exports first came to public attention in the summer of 1972. Then, the Soviet Union secretly bought from the big companies–Cargill, Bunge, Cook, Dreyfus, Continental and Garnac–the last of the world's grain reserves (America's), triggering a 50 percent increase in retail food prices, providing the Republican administration with a constituency in favor of getting the government out of agriculture, generating full agricultural production and forcing farmers onto the international market.

"This June, for the first time, officers of a major trading company reluctantly appeared in public to describe their operations and answer questions." Address: Washington, DC, writer.

267. Schultz, John M.; Mason, William P. 1976. Soybeans: Brazil as a competitive force. MBA thesis, Harvard Business School. vii+ 151 leaves. 28 cm. [49 ref]

• ***Summary:*** This is the best report seen to date on the soybean industry in Brazil. Contents: Preface. Indexes of tables and figures. Introduction. 1. World food demand. 2. Fats, oil & meals. 3. Brazilian production. 4. Comparative cost of production. 5. Development of agricultural inputs and infrastructure. 6. Brazilian commercialization of soybeans and its products. 7. Government's role in the Brazilian soybean system. 8. Brazilian soybean supply-demand model. Summary & Conclusions. Appendices: Conversion rates, Glossary of Brazilian organizations. Bibliography.

Tables: (1) Change in world population growth. (2) World population, 2000: Less developed regions, developed regions, total–for high, medium, and low projections. (3) Where population is growing fastest (percentage growth from 1950 to 1970): Latin America 75% (doubling time 22 years), Africa 59%, Asia 52% (DT 24 years), Oceania 46%, North America 37%, Russia 35%, Europe 18%. (4) Percent of world population by regions: In 1973 developing world has 75% of total, developed world has 25%. In 2000 those figures are expected to change to 80% and 20%. (5) Per capita demand for related commodity groups by areas worldwide (kg per year): (6) Net demand for fats and oils by region: 1970, 1985, 2000. (7) Index of world net food demand by commodity: 1970, 1985, and 2000. (8) Index numbers of total and per caput food production. (9) Joint product derivation for 8 oilseeds (average percentage weight of oil and meal; soybean is 80 to 18). (10) World production of fats & oils, market shares for edible vegetable oil, palm oils, industrial oils, animal fats, marine oils (1965, 1970, 1975). (11) Gross fats & oil exports, for 13 oils and fats, annually from 1971/72 to 1974/75, with projections to 1980/81 at which time–#1 Palm oil 3.1 million metric tons (mmt). #2. Soybean oil 1.02 mmt. Sunflower oil 1.00 mmt. Butter 0.75 mmt. (12) World production of fats & oils, for 14 oils and fats. (13) Exports of fats & oils (vegetable & animal), Malaysia and Brazil. (14) U.S.A. food oils and fats domestic use, 1960, 1974, & 1985 projections. In 1960 the diet was 58% vegetable fats and 42% animal fats. In 1985 the projected diet was 90% vegetable fats and 10% animal

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fats. (15) Soybean yields for selected regions (1971-75): World average, USA, Brazil, China. (16) World cropland area by commodity, 1970. All cereals have 73.5% of the total, vs. 10.8% for oilseeds and 6.3% for pulses and nuts. (17) World soybean production (1970/71 to 1975/76): USA, Brazil, China, Others. "The U.S. embargo in 1973 gave Brazilian exports a boost as importing countries placed greater emphasis on double sourcing." (18) Cottonseed oil production and export for U.S. and world, 1970-1975. (19) Sunflower seed oil production, 1970-1975. (20) Palm oil: Production and exports in major producer-exporter countries and the world annual 1965-75 with projections for 1976, 1980 and 1985. Countries are West Malaysia, Sabah (a Malaysian state located on the northeast tip of the island of Borneo), Indonesia, Ivory Coast, Zaire. (21) Value of four oil crops per hectare for selected countries. Crops: Oil palms, soybeans, sunflower, peanuts. Countries: West Malaysia, USA, USSR, Nigeria. Oil palms have by far the greatest oil yield and value per hectare. (22) Palm oil: Production in specified countries (Western hemisphere 3.5%, Africa 39.1%, Asia 57.4%): Forecast for 1975 and percentages. (23) Palm oil–local consumption vs. exports (1974): For West Malaysia (exports 96% of production), East Malaysia (92%), Indonesia (92%), Ivory Coast (60%), Zaire, Western Hemisphere. (24) Palm kernel oil–production and exports 1971-75. (25) Coconut oil: Production & export. (26) Lard production & export: Selected years. (27) Lard rendered per hog: USA. Yield of lard per hog in USA decreased from 13 kg in 1963 to 6.7 kg in 1974–as demand for lard decreased. (28) World meal production and gross exports by commodity: Selected years 1955, 1967, 1974. Soybean meal is always the leader by far, with cottonseed meal 2nd. (29) Present and projected world consumption of animal products: Poultry, pork, and beef. Poultry and hogs are the main consumers of soybean meal. Cattle consume mostly pasture and grass–as nature designed. (30) Protein meal: World production exports, share of market by commodity, 1955, 1970/71, 1974/75. Soybean meal is by far the leader, followed by cottonseed meal. A U.S. moratorium on soybean exports in 1973 and 1975 enabled Brazil to enter major markets as a source of dependable supply. (31) Soybean meal and seed, production and exports (U.S., Brazil, and world) (meal equivalents). (32) Peruvian fishmeal, production and exports. (33) Peruvian fishmeal exports, soybean equivalents. (34) Brazilian production by states. (35) Changes in acreage planted. (36) Land area of Rio Grande do Sul. (37) Parana production by regions. (38) Cultivated land in Sao Paulo. (39) Land area of central-west states. (40) Weighted average comparison of costs of production. (41) Comparison of fertilizer and lime costs (Brazil and the U.S.). (42) Comparison of machinery cost. (43) Brazilian labor rates. (44) Comparison of regional costs of production. (45) Seed soybean variety usage by state. (46) Fertilizer demand. (47) National fertilizer program. (48) Chemical demand. (49) Land costs by state. (50) 1974 storage capacity by states. (51) Comparison of transportation systems. (52) Capacities at main ports. (53) Comparison of average export profits. (54) 1975 crushing capacity by state. (55) Major crushing firms. (56) Exports. (57) Major importers of Brazilian soybeans and soybean products. (58) Exporter percentages of soybeans. (59) Brazilian ICM tax rates, Jan. 1, 1976. (60) Historical supply-demand relationships. (61) Projection of supply-demand relationships.

Figures: (1) World population growth (in millions) 1900-2000. (2) Soybeans and their products. (3) Relationship between beans and end products. (4) European Community: Apparent consumption of fats and oils, 1965-1975. (5) Oilseeds. (6) Price comparison, coconut, palm, and soybean oil, average monthly cash prices. (7) Per capita consumption of poultry meat. (8) Peruvian anchovy catch, 1960-1975. (9) Map of Brazil. (10) Comparison of average prices for wheat and soybeans at the farm level. (11) Comparison of wheat-soybean acreage. (12) Index changes of soybean production, acreage, and yields. (13) Map of Rio Grande do Sul. (14) Map of Parana. (15) Map of Sao Paulo. (16) Map of Santa Catarina. (17) Map of Central-west states. (18) Comparison of rainfall during growing season. (19) Industry structure. (20) Map of climatic conditions. (21) Map of soil conditions. (22) Brazilian railroad systems. (23) Export corridors program. (24) Comparison of Brazilians–U.S. prices at he farm. (25) Map of crushing facilities. (26) Per capita Brazilian vegetable oil demand. (27) Per capita Brazilian meat consumption. (28) Brazil's major agricultural exports. (29) Comparison of market share in exports of soybeans. (30) Schematic supply-demand relationships. (31) 1976 planting estimates (Based on wheat & soybean prices). Address: Harvard Business School, Cambridge, Massachusetts.

268. Munyer, L. 1977. North Carolina operation moves beans. *Soybean Digest.* March. p. 22c.
• ***Summary:*** "Cargill's Fayetteville, N.C., refinery, which opened in the spring of 1975, was the first major soy oil refinery built in the United States in more than 4 years...

"The Cargill refinery is an expansion of 'one of the most modern bean crushing plants in the country. The processing plant began operation 6 years ago. At this time it was billed as a '$50 million opportunity' for processing soybeans into protein meal and oil...

"Cargill, a 106-year-old concern, has 2 other refineries in operation in the United States. These are located in Des Moines, Iowa, and in Chicago, Illinois."

269. Cargill, Inc. 1977. Fire or explosion in solvent extraction plant. Cedar Rapids, Iowa.
• ***Summary:*** Kingsbaker, C. Louis. 2005. "List of fires and explosions in extraction plants." Atlanta, Georgia. 3 p. Aug. 4. Unpublished manuscript. At Cargill's "West Plant" in

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Cedar Rapids. Address: Cedar Rapids, Iowa.

270. Berlan, Jean-Pierre; Bertrand, J-P.; Lebas, L. 1977. The growth of the American 'soybean complex.' *European Review of Agricultural Economics* 4(4):395-416. Translated from Revue Tiers-Monde 17:66 (April-June 1976) by Adda and Jean-Pierre Berlan. [10 ref. Eng]
• ***Summary:*** Contents: Summary. Developments in the production and use of soybean in the U.S.A.: The origins of the American 'soybean complex,' the War [World War II]. The post-war period and the international expansion: The U.S. livestock production model and European livestock production. Prospects: Direct use in human food, adapting the soybean to the taste of the white man, or adapting the white man to the taste of the soybean? Conclusions. Address: INRA, Paris, France.

271. Fundacao Cargill. ed. 1977. A Soja no Brasil Central [Soybeans in Central Brazil]. Sao Paulo, SP: Fundacao Cargill. [Por]*

272. George, Susan. 1977. How the other half dies: The real reasons for world hunger. Montclair, New Jersey: Allanheld, Osmun & Co. xxix + 308 p. Index. 21 cm. [500+* ref]
• ***Summary:*** Soybeans are discussed in several places: Between 1972 and 1973 U.S. soybean production increased by 25% (p. 9).

Chapter 4, titled "Technology: Now who pays to do what to whom?" shows that no new technology, not even a new crop is neutral in the effects it has on different classes of people. A report on soybeans in Brazil commissioned by the French Government Center for External Trade showed that they are becoming an increasingly important crop there. Since Brazil can produce and sell its crop between the two U.S. soybean harvests, the government's official agricultural policy encourages Brazilian farmers to grow more soybeans since they are a profitable export crop. The price of soybeans is attractive, so farmers have abandoned corn, a traditional crop, as well as wheat (to a lesser extent) because soybeans demand less fertilizer. Since soybean production is easily mechanized, fewer Brazilians need be employed. Soybeans are usually crushed to make oil and meal. This complex processing technology is being taken over by the world's most competent processors–large multinational agribusiness firms, such as Cargill and Bunge. Small Brazilian processors are going bankrupt. Since Brazil's infrastructure for transporting and loading the soybeans is substandard, the World Bank has been kind enough to contribute half the price of new private export corridors to the seaports, which the Brazilian government has kindly declared necessary for the multinationals. No doubt the Brazilian soybean industry will be profitable for multinational agribusiness, but what will be the consequences for ordinary Brazilians. From 1970 to 1972, the price of corn, a traditional staple food and feed, has risen 60%, while the price of chicken has gone up 33%. Soybeans have drastically decreased the amount of land previously used for growing the *feijao* or black bean–another staple crop and key human protein source; during this period its price jumped by 275%. Rice production also suffered from the soybean competition. All of these developments hurt average Brazilians, and especially the poor.

In addition, real estate prices in areas best suited to soybean production have risen dramatically; one hectare in Rio Grande do Sul, which sold for 1,500 cruzeiros in 1972, sold for less than 10,000 cruzeiros less than a year later. Thus, smaller farmers with less mechanization are losing out to those who can afford to buy more than and agricultural equipment. Soybean production in Brazil directly counteracts the efforts of the Brazilian government to limit inflation (p. 67-69).

Chapter 6, titled "Planned scarcity," notes that in the USA, one acre in 6.5 is now planted to soybeans. Europe is only 2% self-sufficient in plant protein production. After World War II, Europe introduced American hybrid corn to replace local varieties; though the yield was higher, the protein content was lower. Thus a new protein source had to be found for feeding livestock, and U.S. soybean meal seemed to be the most rational and inexpensive solution. Export of soybean meal from the U.S. to Europe jumped from only 47,000 tons in 1949 to nearly 5 million tons in 1972-73. Major U.S. processors set up crushing mills in Europe. In short, the entire post-war European livestock industry has been developed on the basis of extensive use of low-price soybean meal. The U.S. established a "near-monopoly position for supply not only of Europe but of Japan and other nations."

Discusses the 1973 U.S. soybean export embargo, which began in June and sent prices soaring to $12 a bushel, from $2. The embargo was removed 3 months later and at year's end it became clear that the scare over shortages was unwarranted. The Food for Peace program introduced soya oil into countries like Spain and Tunisia that had never before tasted anything but their own olive oil. Even the butter-rich Netherlands now consumes more imported soy margarine than butter. "Far be it from me to suggest collusion I can't prove, but it is at least evident who profits from higher prices and who suffers. A futures market in soya meal was opened in London in April 1975 as a measure that might check price fluctuations." Yet the key fact is that European countries do not produce soybeans, nor any alternative protein crop.

Discusses the new effort to extend the use of soya beyond feeding animals by promoting TVP, and the international conference held at Munich, Germany, in Nov. 1973. Earl Butz (U.S. Secretary of Agriculture) led the American delegation; Hubert Humphrey stated: "Food is a new form of power. Food is wealth. Food is an extra dimension in our [U.S.] diplomacy." "Americans presented

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24 out of the 38 papers (including 13 by agribusiness representatives and 10 by USDA people). Only one was by a nutritionist. “One sees absolutely no alternative to continued US MNC (multinational corporation) control of the world plant-protein production and prices.” “The only rational way to offset price and foodstock manipulation by the giant traders would be to have grain stocks held in government hands, to be released or held back as the market situation demanded.” The grain traders are “frantically opposed to any reserve system...” (p. 122-25).

Chapter 8, titled “Food aid?... Or weapon,” discusses: Importance of feedgrains exports, Soybean Council of America, American Soybean Association, PL 480, promotion of soybean exports to Spain, Iran, and Korea, Ralston Purina and Cargill, Food for Peace counterpart funds used to finance research in recipient countries, “common defense” military expenditures (p. 172, 176).

Chapter 11, titled “What can ‘they’ do?” discusses alternative food sources, single-cell protein (SCP), America’s energy-devouring food-production system which could exhaust U.S. fossil fuel reserves within 25 years, research by DuPont showing that when soybeans are experimentally flooded by carbon dioxide, they quadruple yields and fix more nitrogen (p. 239-40). Address: A Smith College graduate now studying at the Sorbonne. Fellow of the Transnational Inst.

273. Miyasaka, Shiro. 1977. Generalidades soja: Historico, botanica, producao, comercializacao [General information on soybeans: History, botany, production and marketing (in Brazil)]. In: Fundacao Cargill, ed. 1977. A Soja no Brasil Central. Sao Paulo: Fundacao Cargill. See p. 2-21. [Por]*

274. Nadel, Eric. 1977? Dates and facts about Illinois Soy Products Company, Springfield, Illinois, and some personal thoughts about I.D. (Ike) Sinaiko. n.p. 2 p. Unpublished typescript. Undated.

• ***Summary:*** “Illinois Soy Products Company in Springfield, Illinois, was started by Ike (I think) about 1935, in an old, abandoned feed mill. The warehouse of this plant had been used for several years as a dance hall. He started to operate with 4 or 5 Anderson Expellers. The building had 3 floors, and was mostly of wooden construction and had very limited storage space for soybeans.

“Business over the first few years developed quite successfully, as the soybean crop grew from year to year in the Mid-West, and in Illinois especially, in those early years of the Soybean business. In 1939, when I started to work for Ike, the total USA soybean crop was barely 200 Million bushels. Although at the outbreak in general became very certain, the Soybean crop kept growing, and soon production doubled and extended further from year to year, so that all soybean mills in Mid-West expanded their business.

“About that same time, previous plans by Ike and his brother Joe Sinaiko, to start a similar plant in Decatur, Illinois, had been realized, and the Decatur Soy Products Company had started operation in the Fall of 1939. Jasper Giovanna, Ike’s right hand man at Springfield, was then assigned to the position of Manager at Decatur.

“On February 14, 1940, an overheated dryer at the Springfield mill caused a disastrous fire, and the entire mill was destroyed. Only a part of the warehouse, which was a brick building and the small office building were still in usable condition.” After 2-3 months, when the wreckage was cleaned up and disposed of, plans were made for immediate reconstruction. In May 1940 Tom Ryan Construction Co. of Iowa began excavation and construction of a 200,000 concrete elevator and large mill building at the same location. The company began operating again on 11 Oct. 1940.

“In September 1943, Ike sold his Springfield plant and business to Cargill, Inc., Minneapolis, Minnesota, as they had been buying other Mid-West Soybean mills to assure themselves of an adequate supply of soybean meal during the war years for their newly acquired Nutrena Feed Division. Ike had no definite plans then for his own future.”

“Unfortunately soon thereafter Ike became ill and had to undergo some serious medical treatments. Following them his doctors recommended his moving to better climates, and in 1949 Ike and his family moved to California.”

“The Springfield mill operated as a Cargill subdivision until August 1951, when Joe Sinaiko bought it back from Cargill, Inc. Then again under the name of Illinois Soy Products Company, privately owned by Joe Sinaiko, I had the privilege to manage it for Joe until 1955, and thereafter for another 10 years under a lease agreement, until Ike Sinaiko asked me to join him in California.

“At that time my financial partner in the Illinois Soy Products Company was Jim Scroggs of Haywarden, Iowa, and as of November 15, 1965, we terminated our partnership, while I left Springfield for California. Unfortunately two days after my departure, Jim Scroggs was killed in his own airplane on a flight from Cedar Rapids, Iowa, to Springfield, Illinois. Joe and Ike at that moment then decided to slowly liquidate the crushing business at the Springfield plant; and after about 6 months crushing operations were discontinued, the plant dismantled, equipment disposed of, and buildings and grounds were sold to W.W. Hill Elevator Company of Williamsville, Illinois, which have been using the facilities as a grain elevator ever since.

“To have had the opportunity to have met Ike Sinaiko, and to have been associated with him for so many years, I have always considered as one of the great fortunes in my personal life. When I first came to America in Spring of 1939 and a few weeks later to Springfield, I was quite inexperienced with language and life in general in this country. But it was Ike who by his support and great encouragement in many ways helped me and my family to

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acquire confidence in ourselves and in other people.

"When I started to work for Ike in July 1939, he immediately accepted me graciously, and this friendship continued throughout the many years I had the pleasure of being associated with him. Whenever I needed Ike he was there and willing in any way to stand on my side and help whenever and wherever it was necessary. Again in October, 1965, at the time of some great personal tragedy in my own family, Ike asked me to stop operation in Springfield and to join him in California. I felt always deeply obligated to Ike for this great gesture at this most appropriate time.

"Throughout all the years of our acquaintance, Ike was always a great friend and teacher to me, and a good portion of my experience is due to this wonderful person. In many ways Ike had the knowledge and the foresight, as well as the patience and compassion to extend friendship to other people at all times.

"It was a great shock to me, when I learned of Ike's passing. I shall never forget, Ike was visiting our office during the morning hours of May 10, 1977, and when leaving I asked him whether he will be back the next day. He answered that he does not think so. He shook hands with me then, which he never did before at the office, and I never expected. But now I know that he must have had some premonition that he was to leave us for ever that same evening."

275. Sinaiko, Joe. 1977? History of Ike Sinaiko's business career. Cedar Rapids, Iowa? 5 p. Undated. Unpublished typescript.

• ***Summary:*** In about 1935, when Ike Sinaiko got the urge to enter the soybean milling business, Max and Anna (Sinaiko) Albers lived in Cedar Rapids, Iowa. Max, "a most able, tireless, hard working, and honest individual," was Joe's partner in the Iowa Milling Company at the time.

Joe already had limited experience in soybean milling, whereas Ike had none. It was a new industry and there were only a few companies in it, so it was quite a struggle to manufacture and sell unknown products in those early days with untried or unproven machinery. Soy oil was an edible product and soy meal was fed to livestock.

When Ike's first plant [the Illinois Soy Products Co.] was completed in Springfield, Illinois, Joe was surprised by how well he took to it. From then on, he was much on his own. Of course they talked on the phone quite often, and Joe visited Ike's plant and Ike visited Joe's to exchange ideas.

This is now Ike got started. To the best of Joe's knowledge, he had very little capital–almost none. While Max (a great chemist) was operating the Iowa Milling Company in Joe's absence, Joe and Ike began looking for a location in Illinois, because that is where the most soybeans were grown at that time. Building a company from scratch was impossible with Ike's finances and Joe had little more. Joe's debts were all paid off but he had no credit with banks or elsewhere.

To get started they had to have any kind of an old, inexpensive building, with little or no down payment located on railroad tracks. Many buildings were available and empty, left by companies that had gone broke during the depression, however there was always something about them that was not quite suitable.

It was quite a wild good chase. They looked everywhere, even in Chicago. It took months. Joe would come home on weekends then continue searching the next week. Finally they came across an old building in Springfield, Illinois, on top of an abandoned coal mine. It had what they wanted but was badly run down. It was small and needed much repair, but a lot of soybeans were grown in the surrounding area. They decided on this property and found an attorney named Carl Sorling who represented the property. He said it could be bought and advised us to get an attorney, but they induced him to represent them also to save expenses, although he claimed it was unethical for him to represent both buyer and seller.

Ike bought the property with practically no down payment. It was worthless in the condition it was in, and Sorling wisely invested $3,000 with Ike. Ike and his wife, Ruth, moved to Springfield.

Joe always had friends in Cedar Rapids who helped him put together his meager operation, so he induced them to take on the job at Springfield. Somehow two expellers were bought on credit. Joe went there often to help with the plant lay-out and give what little advice he could. The mill was ready to go after about six months.

It was really a miracle. They didn't even have enough money to buy nails, so they tied things together with wires. They built most of the equipment themselves, except for things that they couldn't such as motors, a steam boiler, etc. They invested very little cash in this plant because they had none.

The plant began operating in the fall of 1935, when the soybean crop started moving. Joe was amazed at how well Ike did. Ike found a fairly good superintendent but had no working capital. It didn't take much so Joe mailed him a check for about $3,000. Ike had this advantage: He was always honest and the people who sold him soybeans sensed this, so they would give him a little time to get his product sold, and the business went quite well.

In short, Ike prospered in a limited way, built on to the plant to expand the capacity, built a beautiful new home, gave a lot to charity, and became quite a prominent citizen of Springfield.

However he had one great disadvantage: He had very bad asthma and could not go in the plant. He suffered a great deal and it endangered his health. In about 1945 [actually early 1944] he sold the plant to Cargill at a good price. It was a good investment for all who were involved with Ike, including his brother Arlie. "After visiting California, I found

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a climate that was very good for him, so he moved to Los Angeles (LA)."

Ike did nothing for about a year and had no complaints. In conversations with Ike, Joe sensed that he felt very good but was getting tired of doing nothing. He told Joe that his big jobs were getting and opening the mail, and doing some charitable work.

He and Joe investigated the possibility of an oil mill in the LA area near where he lived and decided it might be a fairly good location. Joe asked him to look for land that was near railroad tracks with the idea of building a mill. He finally found about 10 acres in Norwalk, 25 miles east of LA. It was an orange grove. Joe and his son, Bill, travelled to LA to look at the property and it appeared suitable. Norwalk at the time was a little village, with one small grocery store, a barber shop, and a little post office. They bought the land for a little over $1,000 an acre. Today the value is $100,000 [an acre].

While Joe was there, he was informed that someone else was building an oil mill in the area. His policy "has always been to know competitors in a friendly way." They went to see the gentleman involved and told him of their intentions. "He said, 'Boys, why don't you buy my mill? It's about half finished on three acres of land, with trackage, etc.' He said he was over 80 years old. His only son didn't like the business and farmed about 15,000 acres in the San Joaquin Valley. A very fine old gentleman." So they bought his property with some equipment. He lived about 5 miles from the plant in a nice modest home (it looked new) with a 25-acre orange grove. He offered to sell that to the Sinaikos for $25,000. They didn't buy it. "In retrospect, what a mistake."

Ike's mill was named Liberty Vegetable Oil Co. He got his excellent superintendent from the manager of the Borden Co. mill about 5 miles away. Before long Borden discontinued their operation, which was losing much money. Ike, however, prospered. "His operation was almost perfection."

Farmers began growing flax in the Imperial Valley, so Ike bought flax, but made a mistake and bought too much. Iowa Milling Co. invested $1,000,000 in his project [a loan], and that is about all it could spare. Flax was a high-priced commodity and Ike was embarrassed because he could not pay for it when the payment was due. "By the way, Ike paid off Iowa Milling in one year.

At this time Irving Rosen was doing very well with his Quincy Soybean Products Co. in Quincy, Illinois. Joe phoned him and explained Ike's predicament. Irving said, "How much do you want me to send him?" Joe said "$500,000 will help." Joe recalls: "I'll never forget his reply. 'This is the happiest moment of my life that I can help both of you.'" Irving mailed the check to Ike immediately.

A word about Irving. He never finished 5th grade and in Joe's opinion, he became a brilliant business man. He and Joe always exchanged ideas, always searched for new ideas, and learned a lot from one another. Joe will say more about him in his own biography. With all his success, he never changed; he was always a simple person.

Ike advantage: He had a way with people, and was always trusted by people who didn't even know him too well. Anyway, Ike was bailed out of his flax predicament. From then on his milling operation changed a great deal. Processing soybeans became not very profitable, so he developed a market for walnut oil and almond oil, and he ran some safflower oil, coconut oil, peanut oil, etc. Some of these oils he successfully introduced into the paint business. His almond oil was used in cosmetics. These oily seeds are all controlled by California co-ops. Without exception they all took a liking to him and sold him the surplus nuts that the edible market could not absorb.

Later Ike was fortunate in having a son-in-law, Irwin Field, who is a bright young man and of course more aggressive than Ike. With his initiative, they enlarged the plant, built a refinery and did much more. They bought additional land where their plant is located and acquired other land which Joe believes was very profitable.

The miracle of Ike's operation was that he seemed always relaxed. He took it easy, and that was probably to some extent the secret of his success. He always used common sense and dealt with everyone in an honest, straight forward manner. He seemed to find time for all the charities he was involved in. His wife, Ruth, was a big help to him; their beautiful home was open to charitable meetings, dinners, and hospitality. She really was a great help.

Note: Sally Dogon, Joe's daughter, adds (Dec. 2000) that Joe and Ike were similar in many ways. Joe probably wrote this shortly after Ike died on 2 May 1977 in Beverly Hills, California. Joe never wrote his own biography. Address: Cedar Rapids, Iowa?.

276. Saunders, Walter B. 1978. Prospects for soybeans in 1978. *Cereal Foods World* 23(1):16-17. Jan.
• ***Summary:*** This article begins: "For at least 25 years soybeans and their products have been the favorite speculative vehicle of farmer, country elevator, terminal grain merchant, processor and, of course, the general public. The romance of this miracle food seems to have captured the imagination of almost everyone. Ever-increasing trading volume on the Chicago Board of Trade is testimony, indeed, to the enthusiasm traders have felt for soybeans." Address: Marketing and Transportation, Cargill, Inc., Minneapolis, Minnesota 55402.

277. Ward, A.G. 1978. Commercial development of soya bean protein products in the EEC. In: Commission of the European Communities. Agriculture. 1978. Report of the Study Group on Vegetable Proteins in Foodstuffs for Human Consumption, in Particular in Meat Products. See p. 83-85. Appendix IV. April.

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• ***Summary:*** "The soya bean is the main source of specialized vegetable protein products for human consumption within the EEC. Wheat gluten is also used but only to a very limited extent." It is difficult to estimate the current scale of usage for human consumption.

"Belgium: N.V. Vamo Mills produces toasted defatted flour and grits. No extruders known to occur in Belgium. Production of isolates being undertaken by Purina Protein Europe (associate of Ralston Purina Company USA).

"Denmark: Aarhus Oliefabrik A/S produces defatted flour, soya concentrate (Danpro) and textured soya concentrate. The company operates the only extruder in Denmark. Dansk Sojakagefabrik A/S produces defatted soya flour and grits as well as full fat soya flour.

"France: Société Industrielle des Oléagineux produces defatted soya flour and grits as well as full fat soya flour. Rhône Poulenc is reported to be working with an experimental soya protein spinning plant (not yet commercial). No information has been received about extruders functioning in France.

"Germany: Ölwerke Noury and Van Der Lande, Ölmühle Hamburg A.G. and Holtz and Willemsen all produce defatted soya flour and grits and the first two also produce full fat soya flour and grits. No information has been received about extruders functioning in Germany.

"Netherlands: Cargill Soja Industrie B.V. (associated with Cargill Inc., USA) produces defatted flour and grits. The company has three extruders for textured soya products, each with a capacity of about 7,000 to 10,000 tons per annum. These are not thought yet to be working to capacity. Unimills B.V. produces defatted soya flour, soya concentrate and products textured by extrusion with a single extruder. ADM–De Ploeg B.V. produces defatted soya flour and grits and also textured soya flour. The company has a single extruder of capacity 7,000 to 10,000 tons per annum, and is an associate of Archer Daniels Midland Co., USA.

"United Kingdom: British Soya Products produces defatted soya flour and grits as well as full fat flour. The company also produces by its own techniques (not conventional extrusion) the "Bespro" range of textured products. These may include gluten with the soya material. Spillers Ltd (Soya Food Ltd and Lucas Ltd) produces defatted flour and grits as well as full fat flour. Soya concentrate (Newpro) and textured soya flour are also produced. It is believed that the company now has the production capacity of two extruders (14,000 to 20,000 tons per annum). GMB (Proteins) Limited (jointly owned by General Mills Inc., USA and Bush, Boake Allen Ltd) produces a textured soya product ("Bontrae"), not by conventional extrusion. It is thought the current production capacity is a few thousand tons per annum. Miles Laboratories (U.K.) is linked to Miles Laboratories Inc., USA. Information is lacking as to whether the company has production capacity in the U.K. for textured products, as well as importing U.S. products. Courtaulds Limited produces a range of spun soya protein products (Kesp), some of which may incorporate gluten. Annual production is not known. The British Arkady Co. Ltd is associated with Archer Daniels Midland Co., USA. Defatted soya flour and grits, full fat soya flour and textured soya products (by extrusion) are produced. The single extruder has a capacity of 7,000 to 10,000 tons per annum. Extensive research and development has been carried out by Unilever Ltd. (in close association with Unilever in the Netherlands) to develop the "mesophase" process for the preparation of soya protein products and to utilize them in foods. The processes have not yet been commercially exploited.

"No information has been received concerning the production of soya protein products for human consumption and in particular textured products from Ireland, Italy and Luxembourg but Italy has very substantial capacity for the production of oil and meal from soya beans." Address: Procter Dep. of Food and Leather Science, Univ. of Leeds, Leeds.

278. LeMaire, W.H. 1978. Bacon analogs... Exciting possibilities. *Food Engineering* 50(6):ef-14, 15. June.
• ***Summary:*** Breakfast muffins, pancakes, and omelets represent three different–yet practical–applications for bacon analogs. Bacon replacers have an image problem–how to get food processors to think of them other than as a garnish for salads. Major suppliers, such as ADM, Far-Mar-Co, and Cargill either have or are close to introducing cheese, pepperoni, and ham as well as improved bacon analogs. It is known that Central Soya, since purchasing General Mills' steam texturization process for texturizing soy, is considering the flavored, textured analog market. General Mills and McCormicks are busy developing the retail market with national brands. Durkee's and other suppliers pursue regional markets with their brands. Most of these retail products are simply bought from the three major suppliers and re-packed. Altogether the market for bacon analogs is today a 10 million pound market, roughly divided between food service and retail at 4 million pounds each with over 1 million pounds in other processed foods. Address: Midwest editor.

279. Tamarkin, Bob. 1978. What–and who–makes Cargill so powerful? *Forbes.* Sept. 18. p. 150-51, 154, 156.
• ***Summary:*** "With a net worth of over $1 billion, grain trader Cargill, Inc. is the U.S.'s largest privately held corporation. Here's a rare peek behind the scenes... This $11-billion-a year 114-year-old dowager of the grain industry handles more than 25% of U.S. grain exports, making it the single largest contributor to the U.S. balance of payments. What makes Cargill unusual is the fact that 85% of the stock is owned by some 33 members of the Cargill and MacMillan families and the tax-exempt Cargill Foundation, a charitable trust."

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Contains graphs of earnings and sales from 1968 to 1978. Earnings rose from 15 million in 1968 to $40 million in 1972 to $220 million in 1974 and $230 million in 1975; by 1977 they had fallen back to $110 million, but rose to an estimated $120 million in fiscal 1978.

Sales rose from $2,000 million in 1968 to $4,000 million in 1972, to 10,800 million in 1975. Thereafter they stabilized, reaching an estimated $11,300 million for the fiscal year ended 31 May 1978.

"Basically, Cargill makes a profit in two ways: (1) by buying grain at a point of surplus and carrying it to a point of deficit, and (2) by buying it at a time of surplus and carrying it over to a time of deficit. The profit comes from its ability to do both of these things at a lower cost than its competitors–and its willingness from which Cargill never strays. 'During the soybean boom [in 1973] Cargill could have made $200 million had we gone long our inventories,' recalled a Cargill trader. 'But we stayed hedged. That was the test. There was a minirevolt among traders who wanted to go long, but [President] McVay said No'...

"Up until 1950, Cargill's only business was grain. Today grain accounts for only about one-third of the volume. Cargill is currently one of the top soybean processors in the world as well as feed producer for the livestock and poultry industries in the U.S., Europe, Canada, Latin America and Asia. It grows and markets hybrid corn, sells products made from soybeans, flour, wheat, tapioca, sunflowers and other oilseeds, poultry, eggs and scrap iron. Recent ventures include cattle feeding, poultry processing, salt mining, steel production, barge construction, chemical processing, sugar, molasses, cotton and coal merchandising, commodity futures trading, equipment leasing and life insurance."

Photos show Chairman Whitney MacMillan, Cargill's chateau-like headquarters near Minneapolis, Minnesota, and President McVay and Vice Chairman Diercks.

280. Robin, Mike. 1978. The reign in the U.S. lies mainly in the grain. *Lincoln Gazette* (*Nebraska*). Sept. 20. [7 ref]
• ***Summary:*** Contents: Introduction. The Soviet wheat deal. Cargill and the state. Tradax. And back home. Food for Peace in Korea. Soybeans in Brazil.

This 4-page report shows how Cargill has grown through efficiency, predicting the future, taking advantage of every opportunity, and–whenever possible–using public monies and subsidies to finance its operation

The Soviet wheat deal: "Because farmers had no advance knowledge of the Russian sales, they sold their grains at prices ranging from $1.25 to $1.50 a bushel. The grain companies scurried about trying to buy these cheap grains from farmers, co-ops, and government-held reserves all through the early part of the summer of 1972. Several months later, when the Soviet sales were announced and the price of wheat rose as much as 50 percent, farmers realized the extent of the beating they had taken on what came to be known as the 'Great American Grain Robbery'. Agriculture Department officials claimed that even they had no knowledge of how much wheat had been sold to the Russians. Then Agriculture Secretary Earl Butz stated at a press conference, 'Farmers knew precisely as much as the grain companies. Some money has been made in the deal. Some trading companies made it. But it's the name of the game.'"

Although Cargill is adamant about the merits of free trade and looks askance at government regulation of the grain trade, the company nevertheless has many friends and employees in high government positions.

"Tradax: In order to market and export its grain, Cargill set up a new corporate entity, Tradax International, in Panama. Vice President Walter Saunders explained: 'Organizing the new company in Panama enabled us to conduct our trading activities in the international grain market on the same tax footing available to our major competitors.'"

"Finding that Panama was less than ideal for doing business, Cargill then set up a Swiss Company called Tradax Geneva. Tradax is so large that by itself it ranks as one of the world's largest grain traders. Cargill Chairman Erwin Kelm told the U.S. Senate subcommittee on multinationals that Cargill sells as much as 50 percent .of its grain yearly to its own subsidiaries abroad. Now, when the Soviets buy U.S. grain, they no longer go to Cargill in the U.S. as they did in 1972. Instead, they buy from Tradax Geneva, which makes it difficult to monitor Soviet purchases–U.S. law doesn't require Tradax to report its sales,–and, additionally, Cargill does not pay U.S. taxes on its sales through Tradax."

"Soybeans in Brazil: Again in Brazil, Cargill was successful in using public monies to finance its operations. In 1972 Cargill received a loan of $25 million from OPIC, a semi-public agency, to build a soy-bean crushing plant in Brazil. The Export-Import Bank also helped by underwriting loans of more than $1 million. Soybean prices were skyrocketing in the early 1970s, and Brazil had already emerged as one of the world's largest soybean producers, second only to the U.S. Cargill jumped at the opportunity to get a foothold in the Brazilian market and its potential large profits.

"What both of these lending agencies and Cargill chose to overlook is the fact that much of Brazilian soybean production is for export and would be competing with United States-grown soybeans in world markets, thus undercutting the position of U.S. soybean farmers in the international market.

"As Verl Loyland of the Finley Farmer Grain and Elevator Company of North Dakota told the Senate Committee on Multinationals in 1976, 'I think the big problem, the way we look at it, is that these few [grain] companies are multinational companies. They are really not our salesmen. The multinational companies can pick up grain

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in any country they so desire, at whatever price advantage, or what have you. Just because a big sale is made to Russia doesn't necessarily mean they are going to buy from the U.S.'

"To underline this point, in 1976 Cargill's European subsidiary, Tradax, sold 37 million bushels of soybeans to the Soviets. Terms of the sale allowed the beans to originate anywhere.

"Dennis Blankenship, director of market development for the American Soybean Association, claims that the soy processing boom in Brazil accounts in part for the recent drop in volume of American meal shipped to Western Europe. The Brazilian government heavily subsidizes its soybean exports and ships abroad as much as 70 percent of its soy production, most of which is processed by subsidiaries of the grain giants, such as Cargill Agricola, Dreyfus, Bunge, and Archer-Daniels-Midland.

"While there appears to be little question that American agribusiness promotion of soybeans in Brazil has had harmful effects for U.S. producers, the expansion of soybeans has been far more deleterious to Brazil farmers and consumers alike. *How The Other Half Dies,* by Susan George [1977], summarizes a French government report on the introduction of soybeans to Brazil. Much of what follows is drawn from that study.

"The authors of the report are certain that soybeans have drastically reduced the amount of land previously devoted to staple crops, particularly the feijao or black bean.... [see Susan George]

"In this article I have tried to break the veil of secrecy that has shrouded Cargill and its activities from public view. Cargill's influence on our lives is profound, and demands much more study...."

281. *Trend* (*Austria*). 1978. Agraraffaere: Das Sojawunder vom Marchfeld [An agricultural affair: The soya wonder from Marchfeld]. 9(9):42-51. Sept. [Ger]

• ***Summary:*** Discusses the achievements Anton Wolf has made in adapting soybeans to Steiermark, Austria. His yields have averaged 3000 kg/ha, higher than the U.S. average. The U.S. is actively trying to kill soybean production in Austria, so that the country will have to buy U.S. soybeans. But Austria also grows rapeseed, which has a higher oil content than soybeans.

Of the 62.2 million metric tons of soybeans produced worldwide in 1976, the U.S. produced 34.4 million. China 12 million, but uses them all within the country. So the USA is the main soybean exporter worldwide (Brazil sold a meager 330,000 metric tons in 1976). U.S. exports are controlled by a small "soya clique" (*Soja-clique*) consisting of firms, such as Cargill, Continental Grain, ADM, Central Soya, and Bunge–all of which are owned by eight Jewish families [sic, not true!]. A photo shows soybean breeder Anton Wolf.

282. National Soybean Processors Association. 1978. Year book and trading rules 1978-1979. Washington, DC. ii + 106 p.

• ***Summary:*** On the cover (but not the title page) is written: Effective October 1, 1978. This is the 50th anniversary issue. Contents: The National Soybean Processors Association [Introduction and overview]. Constitution and by-laws. Officers and directors. Executive office. Members. Standing committees. Food Protein Council. Trading rules on soybean meal. Sales contract. Appendix to trading rules on soybean meal: Official methods of analysis (moisture, protein, crude fiber, oil {only method numbers listed}), sampling of soybean meal (automatic sampler, probe sampler), official weighmaster application, semi-annual scale report, official referee chemists (meal). Trading rules on soybean oil. Sales contract. Definitions of grade and quality of export oils. Soybean lecithin specifications. Appendix to trading rules on soybean oil: Inspection, grading soybean oil for color (N.S.P.A. tentative method), methods of analysis (A.O.C.S. official methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses; soap stock, acidulated soap stock and tank bottoms (only method numbers listed), official weighmaster application, semi-annual scale report, official referee chemists (oil). Soybean oil export trading rules. Foreign trade definitions (for information purposes only).

The page titled National Soybean Processors Association (p. ii) states: "During the past crop year about 900,000,000 bushels of soybeans moved through processing plants of NSPA's 29 member firms. Approximately 55 percent of America's 1.7 billion-bushel soybean crop is bought and processed by NSPA members. Exporters account for another 41 percent of the crop, and the remainder [4%] is returned to farms for seed, feed, and residuals." Also discusses industry programs, soybean research, and international market development."

The section on officers, executive committee, and board of directors (p. 7-8) gives the name, company affiliation, and phone number of each person. Officers–Chairman: John G. Reed, Jr., Continental Grain Co. Vice Chairman: C. Lockwood Marine, Central Soya Co., Inc. President: Sheldon J. Hauck. Secretary: A.E. Idleman, A.E. Staley Manufacturing Co., Inc. Treasurer: Edward J. Cordes, Ralston Purina Co. Immediate past chairman: Lowell K. Rasmussen, Honeymead Products Co.

Executive Committee: Gorge A. Heinz ('79), Buckeye Cellulose Corp. Donald H. Leavenworth ('79), Spicola, Cargill, Inc. C. Lockwood Marine, Central Soya Co. Inc. John G. Reed, Jr., Continental Grain Co. Gaylord O. Coan ('80), Gold Kist, Inc. Lowell K. Rasmussen, Honeymead Products Co. William T. Melvin ('80). Planters Oil Mill, Inc. Theodore W. Bean ('79), Quincy Soybean Co. Edward J. Cordes, Ralston Purina Co. Richard E. Bell ('80), Riceland Foods, Inc. Austin E. Idleman, A.E. Staley Mfg. Co.

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Board of Directors (alphabetically by company; each member company has one representative on the board): Thomas H. Wolfe, Anderson, Clayton & Co. Charles Bayless, Archer Daniels Midland Co. Keith Voight, Boone Valley Coop. Processing Assn. George H. Heinz, Buckeye Cellulose Corp. David C. Thompson, Bunge Corporation. Donald H. Leavenworth, Cargill, Inc. C. Lockwood Marine, Central Soya Co., Inc. John G. Reed, Jr., Continental Grain Co. Joe C. Givens, Dawson Mills. Alfred Jenkins, Delta Cotton Oil & Fertilizer Co. Kenneth E. Sullivan, Farmers Grain Dealers Assn. of Iowa. Donald M. Chartier, Farmland Industries, Inc. Gaylord O. Coan, Gold Kist Inc. Lowell K. Rasmussen, Honeymead Products Co. Kenneth J. McQueen, Land O'Lakes, Inc. Floyd W. Brown, Lauhoff Grain Co. Kermit F. Head, Missouri Farmers Assn.–Grain Div. Robert E. Hicks, Owensboro Grain Co., Inc. Sewell L. Spedden, Perdue Incorporated. John H. Payne, Planters Manufacturing Co. William T. Melvin, Planters Oil Mill, Inc. Theodore W. Bean, Quincy Soybean Co. Edward J. Cordes, Ralston Purina Co. Richard E. Bell, Riceland Foods, Inc. J.D. Morton, Sherman Oil Mill. Stiles M. Harper, Southern Soya Corp. Austin E. Idleman, A.E. Staley Mfg. Co. Preston C. Townsend, Townsend's Inc. Tyler Terrett, West Tennessee Soya Mill, Inc.

Executive office, Washington, DC: Executive Director, Sheldon J. Hauck. Director, Public Affairs: Jack DuVall. Director, Regulatory Affairs: William F. Sullivan. Administrative Asst.: Helen Miller. National Soybean Crop Improvement Council: Robert W. Judd, Managing Director.

Members (listed alphabetically by company; within each company, first the name of the official Association representative {who is on the Board}, followed by the other personal members listed alphabetically by surname. For example, Archer Daniels Midland Co., the company with the most personal members, has 26. After the name of each personal member is given with his address and phone number. In the listing below, the number of personal members is shown in parentheses after the name of each company, followed by city and state of the various locations): Anderson, Clayton & Co. (6); Phoenix, Arizona; Jackson, Mississippi; Houston, Texas. Archer Daniels Midland Co. (26); Decatur, Illinois; Galesburg, Illinois; Granite City, Illinois; Fredonia, Kansas; Mankato, Minnesota; Red Wing, Minnesota; Fremont, Nebraska; Lincoln, Nebraska; Kershaw, South Carolina. Boone Valley Coop. Processing Assn., Eagle Grove, Iowa. Buckeye Cellulose Corp. (8); North Little Rock, Arkansas; Augusta, Georgia; Cincinnati, Ohio; Memphis, Tennessee. Bunge Corporation (6); Cairo, Illinois; Logansport, Indiana; Emporia, Kansas; New York City, New York; Cargill, Inc. (18); Osceola, Arkansas; Gainesville, Georgia; Cedar Rapids, Iowa; Des Moines, Iowa; Sioux City, Iowa; Washington, Iowa; Chicago, Illinois; Wichita, Kansas; Minneapolis, Minnesota; Fayetteville, North Carolina; Sidney, Ohio; Memphis, Tennessee; Chesapeake, Virginia. Central Soya Co., Inc. (11); Gibson City, Illinois; Decatur, Indiana; Fort Wayne, Indiana; Indianapolis, Indiana; Belmond, Iowa; Marion, Ohio; Bellevue, Ohio; Delphos, Ohio; Chattanooga, Tennessee. Continental Grain Co. (6); Guntersville, Alabama; Chicago, Illinois; Taylorville, Illinois; New York City, New York; Cameron, South Carolina. Dawson Mills (3); Dawson, Minnesota. Delta Cotton Oil & Fertilizer Co. (1); Jackson, Mississippi. Farmers Grain Dealers Assn. of Iowa (Cooperative), Soybean Processing Div. (1); Mason City, Iowa. Farmland Industries, Inc. (5); Van Buren, Arkansas; Sergeant Bluff, Iowa; Hutchinson, Kansas; St. Joseph, Missouri. Gold Kist Inc. (3); Atlanta, Georgia. Honeymead Products Co. (3); Mankato, Minnesota. Land O'Lakes, Inc. (2); Fort Dodge, Iowa; Sheldon, Iowa. Lauhoff Grain Co. (1); Danville, Illinois. Missouri Farmers Assn.–Grain Div. (5); Mexico, Missouri. Owensboro Grain Co., Inc. (2); Owensboro, Kentucky. Perdue Incorporated (2); Salisbury, Maryland. Planters Manufacturing Co. (2); Clarksdale, Mississippi. Planters Oil Mill, Inc. (2); Rocky Mount, North Carolina. Quincy Soybean Co. (4); Quincy, Illinois. Ralston Purina Co. (8); Bloomington, Illinois; Lafayette, Indiana; Iowa Falls, Iowa; Louisville, Kentucky; Kansas City, Missouri; St. Louis, Missouri; Raleigh, North Carolina; Memphis, Tennessee. Riceland Foods, Inc. (8); Helena, Arkansas; Stuttgart, Arkansas. Sherman Oil Mill (1); Fort Worth, Texas. Southern Soya Corp. (1); Estill, South Carolina. A.E. Staley Manufacturing Co. (7); Decatur, Illinois. Townsend's Inc. (2); Millsboro, Delaware. West Tennessee Soya Mill, Inc. (1); Tiptonville, Tennessee.

Associate Members: ACLI Soya Co, White Plains, New York. Anderson Clayton Foods, Dallas, Texas. Balfour MacClaine International, Ltd., New York City, New York. Best Foods, a Unit of CPC International Inc., Englewood Cliffs, New Jersey. California Vegetable Oils, Inc., San Francisco. Canadian Vegetable Oil Processing Co., Hamilton, Ontario, Canada. Cobec Brazilian Trading and Warehousing Corp. of the U.S., New York City. Louis Dreyfus, Stamford, Connecticut. Durkee Foods, Div. of SCM Corporation, Chicago, Illinois (Gerald J. Daleiden). Gordon-Kutner Co., Dallas, Texas. Grain Processing Corp., Muscatine, Iowa (H.P. Woodstra). Hartsville Oil Mill, Hartsville, South Carolina (Richard A. Koppein). Humko Products, Memphis, Tennessee. Hunt-Wesson Foods, Inc., Fullerton, California. Lever Bros Co., New York City, New York. Maple Leaf Mills Ltd., Toronto, Ontario, Canada (W.G. Milliken). Marwood Company, San Francisco, California. Overseas Commodities Corp., Minneapolis, Minnesota. Pillsbury Co., Bloomington, Minnesota. Procter & Gamble Co., Cincinnati, Ohio. PVO International Inc., San Francisco, California. Quaker Oats Co. (The), Chicago, Illinois. Schouten International, Inc., Minneapolis, Minnesota. Sofico, Memphis, Tennessee. Spencer Kellogg, Div. of Textron, Inc., Buffalo, New York. Alfred C. Toepfer, Inc., New York City, New York (Dieter

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Rahlmann).

Standing committees: For each committee, the function of the committee, the names of all members (with the chairman designated), with the company and company address of each are given–Crop Improvement Council. Meal trading rules. Oil trading rules. Safety and insurance. Soybean Research Council. Technical. Address: 1800 M St., N.W., Washington, DC 20036. Phone: (202) 452-8040. Telex 89-7452.

283. LeMaire, W.H. 1978. New soybean plant and bold coal conversion program. *Food Engineering* 50(12):98-99. Dec.
• ***Summary:*** Cargill's newest soybean plant in Sidney, Ohio, boasts the most sophisticated soybean processing technology money can buy at $18 million. The Sidney plant is the first of the company's fourteen soybean plants designed specifically to burn coal according to Cargill president M.D. 'Pete' McVay. The plant produces 100,000 tons of soybean oil and 400,000 tons of soybean meal a year. Address: Midwest Editor.

284. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Sidney, Ohio.
Date of Introduction: 1978.
Ingredients: Soybeans.
New Product–Documentation: LeMaire, W.H. 1978. "New soybean plant and bold coal conversion program." *Food Engineering.* Dec. p. 98-99. Cargill's newest soybean plant in Sidney, Ohio, boasts the most sophisticated soybean processing technology money can buy at $18 million. The Sidney plant is the first of the company's fourteen soybean plants designed specifically to burn coal.

J. of the American Oil Chemists' Soc. 1985. "Soy pioneer bows out, others grow bigger." March. p. 474, 476. Cargill has a soybean crushing plant in Sidney, Ohio.

Lauser, Greg C. 1982. "History of Cargill's involvement in the soybean processing industry." Minneapolis, Minnesota. 5 p. Unpublished typescript. March 15. Courtesy Cargill, Inc. In 1978 Cargill opened a soybean processing plant in Sidney, Ohio. This was the company's first soybean processing plant designed to burn coal as its source of power.

285. Fite, Gilbert C. 1978. A brief history of Far-Mar-Co (Document part). In: Fite, Gilbert C. 1978. Beyond the Fence Rows: A History of Farmland Industries, Inc., 1929-78. Columbia, Missouri and London, England: University of Missouri Press. xxviii + 404 p. See p. 362-64, 367-74. [18 ref]
• ***Summary:*** In the spring of 1968, after considerable discussion, four regional grain cooperatives agreed to consolidate their business into a single association. Starting June 1, it will be known as Far-Mar-Co, Inc. "The associations that formed Far-Mar-Co were the Equity Union Grain Exchange of Lincoln, Nebraska; the Farmers Cooperative Commission Company of Hutchinson, Kansas; the Cooperative Marketing Association of Kansas City; and the Westcentral Cooperative Grain Company of Omaha. James H. (Jimmie) Dean who had been general manger of the Farmers Cooperative Commission Company became executive vice-president and general manager. The headquarters office was located in Hutchinson.

"During the next few years Far-Mar-Co added member associations to its organization, began to manufacture a number of grain-based food products, such as soy flour, and greatly expanded the amount of grain handled. In 1971, the company marketed 217.4 million bushels of grain, and by 1974 the total volume had jumped to 335.6 million bushels. About 57 per cent of this was wheat. Far-Mar-Co was also a member of the Farmers Export Company [FEC] that had an export terminal at Ama, Louisiana. Farmers Export had been formed in January, 1967, by eight regional grain cooperatives, four of which later formed Far-Mar-Co. This represented an effort by grain-marketing cooperatives to engage directly in the export business so that farmers would not have to rely exclusively on Cargill, the Continental Grain Company, Cook Industries and other major exporters.

"Farmland [Industries, Inc.] officials watched this development with interest. Here was an important marketing cooperative operating right in the heart of Farmland territory. The development of Far-Mar-Co was of even greater interest to some of Farmland's member cooperatives who had dreamed of the day when Farmland would add grain marketing to its activities. In the summer of 1971, three local associations urged Farmland's management to consider a merger with Far-Mar-Co" (p. 363).

Some consideration of a merger with Far-Mar-Co continued from 1972 to 1974, but in 1974 the growing size and power of farm cooperatives came under increasing attack, distracting attention from the merger. The criticisms focused on three main issues: Tax breaks, bigness, and exemption from most antitrust laws.

But discussions regarding the merger continued. Finally, on 3 June 1976 the boards of directors of both organizations met at Hutchinson, Kansas, and adopted identical resolutions "authorizing study and consideration of possible merger or consolidation of the two organizations. "The main reason to merge the two large cooperatives was to give farmers some meaningful control over the export market." At the time, an oligopoly of only five firms exported most of the nation's grain. Cooperatives were exporting only about 7% of the total (p. 367).

"A condition that favored merger was the fact that about 95% of Far-Mar-Co's 604 members were also affiliated with Farmland Industries, while 26% of Farmland member associations were members of Far-Mar-Co... A merger with Farmland would add financial strength to Far-Mar-Co's grain marketing activities" (p. 367-68).

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On 29 Nov. 1976 the two board of directors approved the "plan and agreement of merger." Walter W. Peterson, a Nebraska farmer who had been president of Far-Mar-Co since 1968, became chairman of the new Far-Mar-Co board of directors which consisted of 12 members of the old board and 13 persons from Farmland's Board and management team. George Voth was named president of Farmland's new subsidiary; he had served on Farmland's Board of Directors from 1959 to 1968, and since 1972 had been executive vice-president and general manager of Far-Mar-Co. "The merger brought together the largest farm supply cooperative and the biggest grain-marketing cooperative in the United States... Their combined sales volume in the fiscal year ending August 31, 1977, amounted to $3,039 million dollars. This figure... ranked 78 among *Fortune*'s largest 500 industrials, moving up from 123 in 1976 before the merger" (p. 369).

"Far-Mar-Co handled about 350 million bushels of grain, owned sixteen terminal elevators, controlled a part of the Farmers Export Company and the export terminal at Ama, Louisiana, owned or leased about 1,000 jumbo hopper railroad cars for grain transport, and manufactured some food products. In 1975-1976, the company had inaugurated a grain program known as the Producers Marketing System, or Promark. This was a wheat-pooling plan... Farmland's food-marketing subsidiary had sales of $436,911,000, giving a total marketing volume of $1,127,295,000. This was a little more than one-third of Farmland's total business."

Important (and critical) articles on the merger were published in *Business Week* (1976 Nov. 22, 1977 Feb. 7) and *Food Engineering* (April 1977).

The merger of the two largest cooperatives became legally effective on 2 May 1977. It "was hailed by cooperative enthusiasts as one of the most significant events in the history of farmer cooperatives. Farmers and ranchers finally had 'a fully integrated supply and marketing cooperative,' [president Ernest T.] Lindsey wrote in the 1977 *Annual Report.* Lindsey later said that in his ten years as president, nothing had caused as much excitement in the cooperative family as this merger.

"To strengthen its export activities, Far-Mar-Co purchased a large elevator at Fort Worth, Texas in June, 1977, and joined six other cooperatives and two interregional associations in the Farmers Export Company to purchase grain storage and shipping facilities in Galveston from Cook Industries, Inc." (p. 373). Address: Athens, Georgia.

286. Shearson Hayden Stone Inc. 1978. Special survey: U.S. and Canadian soybean processing facilities. New York, NY. 8 p. Nov.
• ***Summary:*** The USA has a total soybean crushing capacity of 1,226 million bushels/year based on 330 available days. A ranking of the capacity of major U.S. soybean crushers is as follows (as of 1 Nov. 1977):

Cargill 224 million bushels/year. 18.3% of industry total.

Archer Daniels Midland 178 million bushels/year. 14.5% of industry total.

Central Soya 94 million bushels/year. 7.7% of industry total.

A.E. Staley 93 million bushels/year. 7.6% of industry total.

Ralston Purina 92 million bushels/year. 7.5% of industry total.

All Co-ops 232 million bushels/year. 19.0% of industry total.

Other 312 million bushels/year. 25.4% of industry total.

The leading soybean crushing states (in million bushels per year capacity) are: Illinois 258, Iowa 176, Minnesota 83, Tennessee 73, Indiana 70, Arkansas 69, Missouri 68, Mississippi 59, Ohio 50.

The individual soybean crushing plants with the largest capacity are (* = food grade plant): ADM* (Decatur, Illinois) 150,000 bushels/day. Quincy Soya (Quincy, Illinois) 120,000 bushels/day. Cargill, Inc. (Memphis, Tennessee) 100,000 bushels/day. A.E. Staley (Des Moines, Iowa) 100,000 bushels/day.

Canadian soybean crushers capacity (total 148,000 bushels/day) are: Maple Leaf Mills (Windsor, Ontario) 60,000 bushels/day. Victory Mills (Toronto, Ontario) 42,000 bushels/day. Canadian Vegetable Oil Processing (CVOP, Hamilton, Ontario) 33,000 bushels/day. Maple Leaf Mills (Toronto, Ontario) 13,000 bushels/day. Total: 148,000 bushels/day. Note: Maple Leaf Mills is the largest Canadian soybean crusher, with a total capacity of 73,000 bu/day.

287. *Wall Street Journal.* 1979. Cargill Inc. agrees to lease an $18 million grain elevator. March 6. p. 15, col. 3.
• ***Summary:*** Cargill said it will lease an $18 million grain export elevator at Burns Waterway Harbor, 10 miles east of Gary, Indiana. The Indiana Port Commission will raise the $18 million through tax-free revenue bonds.

288. *Business Week.* 1979. Cargill: Preparing for the next boom in worldwide grain trading. April 16. p. 68, 70, 75-76.
• ***Summary:*** Cargill profits for 1979 are estimated at 150 million. At this time, Cargill is seeking to expand its share of U.S. grain exports to 35% and is spending $150 million per year toward that end. Cargill controls 350 grain elevators, 500 barges, 5,000 rail cars, and 14 ocean-going vessels. New export terminals are being built at Burns Harbor, Indiana, and at Toledo, Ohio. And Cargill is expanding its existing export terminals at Duluth, Houston, Chicago, and Norfolk.

Note: Lappe (1971, p. 47, 460) notes that Cargill's income rose 441% between 1969 and 1979–after adjusting for inflation. The largest gain trader, Cargill's major trading arm is Tradax, chartered in Panama and based in Geneva. Cargill calls it an "independent subsidiary," but it is actually 70% owned by Cargill and 30% owned by the Salevia Foundation–a trust whose beneficiaries are all members

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of the Cargill and MacMillan families, owners of Cargill. The Panamanian charter gives Tradax (Cargill) significant tax advantages. Based in Geneva, Switzerland, Tradax is protected by Swiss secrecy laws. (Cargill refused to provide some significant information in 1976 Senate hearings, on the grounds that it would be illegal under Swiss law.) Transactions run through Tradax need not be reported, either to the USDA or to the IRS for tax purposes. This secrecy is both a tax advantage and a trading advantage.

289. Morgan, Dan. 1979. Cotton, wheat and corn bowing to the reign of king soybean. *Washington Post.* July 24. Section A. p. 1, col. 1.
• ***Summary:*** According to unofficial private estimates, America's largest soybean crushers (with their estimated capacity in millions of bushels) are: Cargill 224, ADM 178, Central Soya 94, A.E. Staley 93, and Ralston Purina 92.

"In West Germany soybean oil has gained wide acceptance and is produced by such major companies as Unilever. But the oil has encountered strong resistance in France as a cooking oil because 'the French prefer a richer, peanut smell and like butter,' says the American Soybean Association's Michael A. Phillips. Efforts to promote soybean oil in France also have encountered strong resistance from French agricultural interests.

"Earlier predictions that Brazilian soybean products would supplant those of the United States in markets abroad have proved to be exaggerated. Since the early part of the decade, foreign and local interests have invested massively in processing plants in Brazil. The Brazilian government backed this development with generous concessions to foreign investors and with enormous subsidies to exporters of meal. These subsidies have amounted to as much as $1 a bushel and have enabled exporters in Brazil to offer European and Japanese feed buyers discounts of $20 to $30 a ton below the U.S. price. But this year U.S. trade negotiators–spurred by the powerful Midwest farm bloc–obtained a promise from Brazil to phase out the subsidies."

290. Morgan, Dan. 1979. Once-lowly soybean is nation's top cash crop, beating corn and wheat. *Los Angeles Times.* Aug. 13. p. D14, D16.
• ***Summary:*** Across the American South, large areas that had once been planted to cotton are now planted to soybeans. In 1979 American farmers will harvest more acres of soybeans than of either corn or wheat. Soybeans (all 21.3 billion bushels in 1979) are now also the leading U.S. cash crop, producing more income for farmers than corn, wheat, or cotton. In addition, soybean exports now "bring in more revenue than any other U.S. crop–$6.9 billion in 1978 compared with $5.9 billion for feed grains and $4.6 billion for wheat."

"The rise of soybeans to the status of a glamour crop came about through" the increased consumption of animal products (especially poultry and hogs) at home and abroad since World War II. Soybean meal became the main source of protein in feeds for these animals.

Pfizer and several other pharmaceutical firms have entered the soybean seed business.

A bar chart shows the largest U.S. soybean processors, based on the estimates of private security analysts. Figures are for capacity in millions of bushels per year: Cargill 224. ADM 178. Central Soya 94. A.E. Staley 93. Ralston Purina 92.

Soybeans grown near the Mississippi River–"the 'Main Street' of the world grain trade"–are like to be exported. The soybean trade up and down this river is largely dominated by multinational grain companies such as Cargill, Continental, and Bunge. In a 180-mile stretch of river from Osceola, Arkansas, up to Silkeston, Missouri, are 10 grain terminals belonging to those 3 multinationals. Address: The Washington Post.

291. *Food Product Development.* 1979. Retail sales bloom for soy-based meat extender: Survivor of '73 bust. 13(8):66-67. Aug.
• ***Summary:*** Discusses Williams Textured Vegetable Protein, from Williams Food Inc., of Webb City, Missouri. Williams uses Cargill's Textarein 5-F textured vegetable protein, a product fortified with vitamins and colored with caramel. In examining other meat extenders, we found a problem stated most graphically in the set-up for Type A school lunch programs. Extenders being used by the schools were shipped in bulk–40- to 50-pound bags–and they were unflavored. They diluted the flavor of ground beef and the resulting product was underseasoned. School dieticians and lunchroom workers weren't trained to compensate with additional seasonings. So when they put it on the table, the kids rejected it.

So Williams added seasonings and flavors to build up brand loyalty. The line of has six flavors: Chili, Taco, Hamburger, Sloppy Joe, Spaghetti, and Meat Loaf. the product was successful in 1973, but the company persevered after meat prices dropped with a new, improved package design and better marketing. A photos shows the old and the new package "with Chili Seasoning." The words "Ground Beef Extender" were added to each package.

292. National Soybean Processors Association. 1979. 50th Anniversary Annual Meeting–National Soybean Processors Association: August 26-28, 1979, The Hyatt at Palmetto Dunes, Hilton Head Island, South Carolina. Washington, DC. 26 p. 23 cm.
• ***Summary:*** Contents: Letter of congratulations from President Jimmy Carter. Welcome to the 50th Anniversary Annual Meeting of the National Soybean Processors Association (NSPA). Historical perspective (incl. graph of million bushels of soybeans crushed from 1933 to 1978).

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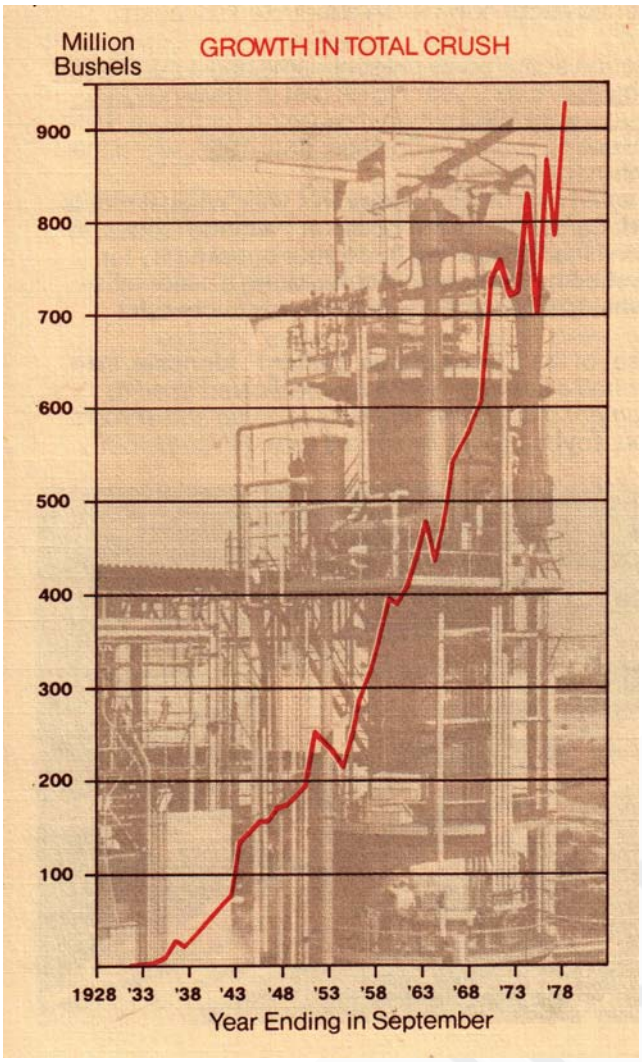
50th Anniversary Annual Meeting

National Soybean Processors Association

August 26-28, 1979
The Hyatt at Palmetto Dunes
Hilton Head Island, South Carolina

NSPA
NATIONAL SOYBEAN PROCESSORS ASSOCIATION

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NSPA anniversary year officers and staff. 50th anniversary year board of directors.

Chief elected officers of NSPA, 1929-1977 (p. 4-5; each is now listed as "Chairman, Executive Committee," but in documents before the mid-1970s each actually used the title of "President"): Otto Eisenschiml 1929-30 (Note 1. The NSPA was not officially formed until 21 May 1930. It was originally named the "National Soybean Oil Manufacturers Association," but in 1936 was renamed the National Soybean Processors Association). Whitney H. Eastman 1931-35. I.C. Bradley 1935-36. E.K. Scheiter 1936-37. E.F. Johnson 1937-38. W.H. Eastman 1938-41. E.K. Scheiter 1941-45. D.G. Bunnell 1945-47. W.H. Eastman 1947-49. R.G. Golseth 1949-51. E.A. Cayce 1951-53. W.E. Huge 1953-55. Dwight L. Dannen 1955-57. M.D. (Pete) McVay 1957-59, Glenn H. Pogeler 1959-61. Donald B. Walker 1961-63. Scott E. Cramer 1963-65. Lowell W. Andreas 1965-67. Now the title in the book changes to "President": Theodore W. Bean 1967-69. James W. Moore 1969-71. James W. Hogan 1971-73. James R. Spicola 1973-75. Lowell K. Rasmussen 1975-77.

Chief staff officers of NSPA, 1929-68: Edward J. Dies 1928-47 (Consultant, executive secretary, president, chairman. See Note below). Robert G. Houghtlin 1947-68. A portrait photo shows each of the above men from Dannen (1955) to Houghtlin (1968). Special invited guests (p. 6-7): U.S. friends of NSPA, international friends of NSPA, corporate officers of NSPA member firms (Agri-Industries, Archer Daniels Midland, Anderson Clayton Co., Buckeye Cellulose Corp., Cargill Inc., Central Soja Co., Continental Grain Co., Farmland Industries, Gold Kist Inc., Missouri Farmers Association, Perdue Incorporated, Planters Oil Mill Inc., Riceland Foods Inc., A.E. Staley Manufacturing Co.).

National Soybean Crop Improvement Council (NSCIC, p. 8-9): A portrait photo shows the managing director since 1961 Robert W. Judd, 26 advisory board members (Billy Caldwell, William Colville, Garnet Craddock, Roy Creech, Robert Gast, Dale Harpstead, Edgar Hartwig, Jack Hiatt, Maurice Horton, Robert Howell, Thomas Hutcheson, Jr., Hyde Jacobs, Herbert Johnson, Robert Leffel, William Martin, Arnold Matson, Charles McAnts, Wallace Moline, Bill Ott, John Pendleton, John Pesek, Marvin Phillips, Edward Runge, Paul Santelman, Berlie Schmidt, Lloyd Seatz, Warren Shaw, Keith J. Smith (ASA), Walter Thomas, and Coleman Ward). Plus 3 special 1979 guests (Athow, Bernard, Turnipseed). NSPA annual meetings, sites from 1968-82. 50th annual meeting program of events (Master of ceremonies will be Earl. L. Butz, Secretary of Agriculture). Eleven pages of ads.

Note 2. Concerning Edward J. Dies: These dates seem incorrect. All prior records show that this association was organized on 21 May 1930, not in 1928. In 1950, when Dies was elected honorary life member of the American Soybean Association, *Soybean Digest* wrote of his career: Edward Jerome Dies, formerly the president of the National Soybean Processors Association, "was a staff correspondent of the Associated Press and a magazine writer before launching his Chicago [Illinois] public relations bureau. In 1936, when the soybean crop was only 33 million bushels, his agency was engaged by the National Soybean Processors Association to correct certain adverse publicity. Soon he became president of the expanding trade group, and continued in office until 1945, when he resigned and went to live in Washington. He has retained a connection with the soy flour industry as director of the Soya Food Research Council." Address: 1800 M Street N.W., Washington, DC 20036.

293. *Feedstuffs.* 1979. Top 30 commercial feed manufacturers [in the USA] (based on capacity). 51(44):9. Oct. 29.

• ***Summary:*** 1. Ralston Purina Co. (7,000,000+ tons annual capacity; 61 mills in USA).

2. Allied Mills, Inc. (3,000,000+ tons; 23 mills).
3. Central Soya Co. (2,500,000 tons; 32 mills).
4. Agway, Inc. (2,000,000 tons; 22 mills).
5. Gold Kist, Inc. (2,000,000; 14 mills).

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6. Farmland Industries, Inc. (1,550,000 tons; 20 mills).
7. Cargill, Inc. (1,000,000 tons; 33 mills).
8. Carnation Co. (1,000,000 tons; 14 mills).
9. Moorman Mfg Co. (1,000,000 tons; 7 mills).
16. ConAgra, Inc. (600,000 tons; 8 mills).
17. Land O'Lakes, Inc. (500,000 tons; 10 mills).
18. MFC, Inc. (500,000 tons; 7 mills).

Capacity in most cases is based on 2 shifts, 5 days a week.

294. *Feedstuffs.* 1979. The integrators: The 'in-house' feed manufacturers. 51(44):44. Oct. 29.
• ***Summary:*** The integrators–virtually 100% of the broiler industry and about 80% of the turkey and egg industries–are defined by control of the production, processing, and marketing functions. In each table, estimated feed usage is also given. One table shows America's top 20 broiler producers: The first number gives the company's rank and the second (in parentheses) the number of birds processed in millions in 1978: 1. Holly Farms (Federal Co. 260). 2. Gold Kist, Inc. (240). 8. Central Soya Co. (130). 9. ConAgra (129). 10. Wayne Poultry (Allied Mills. 114). 19 Cargill, Inc. (57).

Another table shows America's top 15 turkey operations. The second figure shows millions of pounds live weight processed: 1. Swift Dairy & Poultry Co. (325). 2. Armour & Co. (175-200). 3. Cargill, Inc. (150-175). 6. Land O'Lakes (100-110). 14. Central Soya (20-25).

A third table shows America's top 20 commercial cattle feeding companies. The second figure represents the total capacity in number of cattle: 1. Cargill, Inc. (Caprock Industries, 5 lots; 216,000 head; 982,800 tons of feed). 9. Continental Grain Co. (Allied Mills, 3 lots; 105,000 head). Cattle have an average 140-day finishing period in the feedlot, and consume 25 lb. of feed per head per day. in the

A fourth table shows America's top 20 table egg layer operations. The second figure is number of layers in millions: 1. Cal-Maine Foods, Inc. (11.0). 4. Cargill, Inc. (3.5). 13. ConAgra, Inc. (1.6). 15. Central Soya (1.5). 16. Gold Kist Eggs (1.33). 17. MFC Services (1.33).

295. *Feedstuffs.* 1979. Cargill research shows weaning weight affects later performance. 51(46):13. Nov. 12.
• ***Summary:*** Pigs with higher average weaning weights grew faster than those with lower weights at weaning, according to studies at the Cargill research farm.

Note: Cargill has used its export bonanza to expand its poultry operations (Cargill already ranks 4th in the U.S.), and to enlarge its animal feed operations (Cargill is already America's second largest producer).

296. Cargill, Domestic Soybean Crushing Division. 1979. Osceola, Arkansas. First stop before Hamburg, Bordeaux and Dublin (Ad). *Soybean Digest.* Nov. p. 14.
• ***Summary:*** A full-page ad. In the middle is an aerial view of the Cargill soybean crushing plant at Osceola, Arkansas.

Below that, we read: "Our soybean processing plant in Osceola is a direct link to world markets for soybean products.

"This facility can crush 40,000 bushels a day. That's 315,000 tons of meal and 68,000 tons of oil a year. These products move by barge down the Mississippi River to the Gulf, where they are exported to West Germany, France, Ireland and many other world markets.

"It's a big market and it's continuing to grow. Since 1960 the combined volume of soybean oil and meal exports has increased an average of 12.6% a year. In the last three years, oil exports alone increased 47% to two billion pounds in 1978. By responding to world demand, U.S. agriculture earned $1.8 billion last year from meal and oil exports. We're serving export markets today through investments like our Osceola plant. But our job doesn't stop there. We constantly seek new markets for soybean products. As we find them, we will continue to provide the services and facilities needed to bring your soybeans to market–nationwide as well as worldwide."

A small photo near the bottom center has this caption: "A blast of air helps separate hulls from soybean meats on one of a series of dehulling machines. Each handles 7,500 bushels a day."

In the lower right is the round Cargill logo. Address: P.O. Box 9300, Minneapolis, Minnesota 55440. Phone: 612/475-6102.

297. Dussaigne, A.; Dronne, Yves. 1979. Les protéines nouvelles en alimentation humaine [The new proteins in human nutrition]. Rungis, France: Laboratoire de recherches et d'etudes sur l'economie des I.A.A. 111 p. Dec. [97 ref. Fre]
• ***Summary:*** Contents: Introduction. List of 30 tables. Part I: The protein industry. Definition and characteristics of proteins. The quantitative structure of the protein industry (the world protein industry, the French protein industry). Qualitative aspects of the protein industry. Energy problems in the protein industry.

Part II: New proteins in human nutrition. Supply and demand. Products derived from soya: Powdered products, textured products. The domains of utilization: Restaurants, the food industry. Regulations that are in force: In the USA, in Europe (France, Britain, European Union). The structure of the supply: Overview, manufacturers (American, European, Japanese, those in other countries). Development of consumption in the principal markets: The American market, European, Japanese.

Part III (p. 77+): Perspectives on development of new proteins. The nature and present utilization of new proteins: Importance of terminology, characteristics of the potential markets (Third World countries, developed

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countries). Consumption of new proteins and the economic environment. Bibliography (in chronological order).

Note 1. This is the earliest document seen (Aug. 2015) that contains the term "European Union" in connection with soy.

Note 2. This is the earliest French-language document seen (Nov. 2015) that uses the terms *concentrat* or *concentrats* to refer to a soy protein concentrate. Address: France.

298. Morgan, Dan. 1979. Merchants of grain. New York, NY: The Viking Press. xiv + 387 p. Illust. Index. 24 cm. [112 ref]
• ***Summary:*** See next page. A superb, original, carefully researched and well written book. The main soybean traders discussed in depth are the "Big Five"–Cargill (of Minneapolis), Continental Grain Co. (New York City), Louis Dreyfus Co. (Paris, France), Bunge Corp. (Argentina, Brazil, New York), and André (Lausanne, Switzerland). For the downfall of Cook Industries see p. 330-341. These are private companies, controlled by seven families: the Fribourgs at Continental; the Hirsches and Borns at Bunge; the Cargills and MacMillans at Cargill, and the Louis-Dreyfuses and Andrés at the firms with those names.

Contents: Introduction ("It is difficult to understand how the international grain companies could have slipped through history as inconspicuously as they have. Grain is the only resource in the world that is even more central to modern civilization than oil"). 1. Glenas, Inc., of Panama (a history of the grain trade). 2. Bread and Dynasties (how and when each of the Big Five started selling grain. The 1946 repeal of the Corn Laws in England had a huge effect on the world grain trade). 3. Grain Barons. 4. Living by Their Wits.

5. Rendezvous at Château Laurier. 6. "Cram It Down Their Throats." 7. "Big Grain." 8. Merchants of Grain. 9. Catch-22.

10. Pyramid of Power. 11. The Food Weapon. 12. The Diplomatic Crop. 13. The Least Forgiving Business. 14. Blood Brother to the Earthquake. Acknowledgments. Notes on Sources.

Maps and Charts: Major World Grain Routes, 1880 (front endpaper) World Grain Routes, 1978 (back endpaper) World Wheat Acreage in the 1930s. American and World Grain Exports, 1962-78. Growth of World Trade in Major Export Crops, 1955-77. Cargill, Incorporated. The House of Cargill/MacMillan. Illustrations follow pages 98 and 264. Address: Washington, DC.

299. Dronne, Yves. 1980. Le phénomène multinational dans le secteur des protéines [The multinational phenomenon in the protein sector]. Presented at Symposium of the European Assoc. of Agricultural Economists, Saragossa, Spain. Held April 1980. [Fre]*

300. *Hamburger Abendblatt* (*Hamburg, Germany*). 1980. Lecithin-Fabrikant erschoss sich [Lecithin processor shot himself]. May 22. 1 p. [Ger]
• ***Summary:*** The industrialist Lucas Meyer, the 2nd largest lecithin producer in the world, took his life yesterday evening in his house in Eppendorf. He shot himself with a hunting rifle in the heart. The 56-year-old man was very sick and suffered from depression. Therefore, his driver's license had recently been revoked. That could have triggered the suicide.

Lucas Meyer is survived by his wife, a daughter and two sons. The eldest son has been running the family company for a long time. The official name of the company is Chemische Fabrik Dr. Meyer-Castens & Co. It has about 100 employees and is located at Ausschlaeger-Elbdeich 62 (in the Rothenburgsort quarter of Hamburg). With annual sales of 50,000 metric tons, the company is the most important supplier of lecithin products in Europe.

Lecithin resembles fats, and it is obtained mostly from soybeans. The late Mr. Meyer, who took over the firm from his father, processes lecithin in more than 50 different forms, and generated annual sales of 150 million Deutschmarks. Today near one billion people each day use products that contain lecithin: Sweets and confections, drugs (for dieting and calming the nerves), dyes (*Farben*), pastry (*Gebäck*), margarine and instant beverages.

Note 1. As of 2016 Lucas Meyer is owned by Cargill. The Cargill link–http://www.cargill.de/en/locations/hamburg-rothenburgsort/–states: "Location history: Cargill's plant in Hamburg-Rothenburgsort evolved from the former Lucas Meyer GmbH & Co., a family-run enterprise founded in Hamburg in 1923 initially for the export of pharmaceutical specialties business.

"In 1949 the enterprise began manufacturing lecithin and set up research laboratories at Ausschläger Elbdeich in Rothenburgsort.

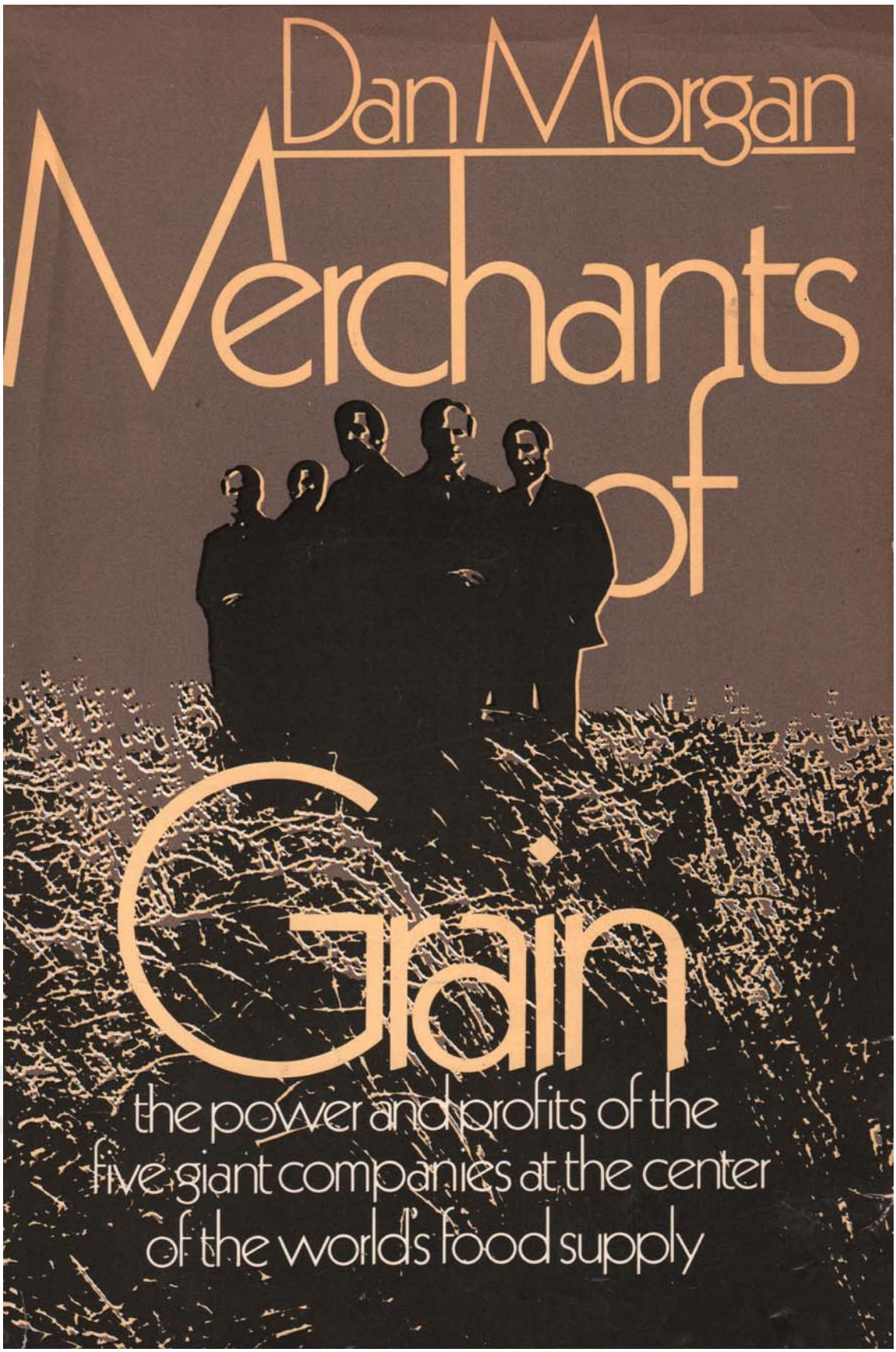
"Ever since then, the business has grown to be a successful global enterprise with sites and locations on nearly all continents, providing materials for many important segments of the food industry, the dietetics as well as the pharmaceutical industry. The individual additives and solutions we provided, supplies customers with fresh, tasty, healthy and safe food products.

"In 1999 the family business was sold to SKW, a specialty chemical company. Years of restructuring followed, with Degussa AG–again a specialty chemicals enterprise–finally emerging from the merger between SKW and Degussa Hüls.

"With a worldwide network of application and service centers, sales organizations, technical laboratories and production sites the Cargill Texturizing Solutions business is represented both on the domestic market as well as internationally."

Note 2. In 2006 Cargill acquired Degussa Food Ingredients.

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301. Le Claire, J.-M.; Le Meter, L. 1980. 1.–Sur la route du soja [1.–On the route of soybeans]. *Ouest-France*. June 9. [Fre]

• ***Summary:*** Part one in a series on "Strategies concerning proteins," this article discusses how and from where soybeans get to France.

Two companies have a quasi-monopoly: (1) Soja-France, owned by the American multinational Cargill, owns two solvent extraction plants–at Saint-Nazaire and at Brest. (2) Archer-Daniels Midland (ADM), also of the USA.

Tables show: (1) French consumption of soybean meal in 1978. That year some 595,515 tonnes (metric tons) of soybeans were crushed in France using solvent extraction. These soybeans were imported from the following counties–in descending order of amount (tonnes): Brazil 1,197,281. USA 372,000. Belgium 325,045. Netherlands 176,740. Germany 88,253. Argentina 78,430. United Kingdom 18,290. Other 18,320. Total: 2,274,889. Exports: 10,413. Used / consumed in France: 2,860,000.

(2) Imports of soybean meal to France through various seaports in 1978. For each port is given the total amount imported, and how much of that total came from which countries. In descending order of total (in tonnes): 1. Lorient 500,572 (83.2% from Brazil). 2. Bordeaux 375,606 (77% from Brazil). 3. Brest 210,159 (84% from Brazil). 4. Saint-Nazaire 164,230 (55% from Brazil). 5. Nantes 67,476 (69% from USA). 6. Caronte 61,687 (100% from Brazil). 7. Rouen 32,256 (68% from Argentina). 8. Saint-Brieuc 17,136. 9. Saint-Maio 14,510. Address: France.

302. DeForest, Sherwood S. 1980. Seminar–Vegetable oil for diesel fuel, Northern Agricultural Energy Center, September 25, 1980. Peoria, Illinois: USDA Science and Education Administration, Agricultural Research. 21 p. 28 cm. [60+ ref]

• ***Summary:*** An early booklet on the subject with several good bibliographies. Research reports:

1. Sunflower Seed Oil as an Extension for Diesel Fuel in Agricultural Tractors. J.J. Bruwer, Director of Agricultural Engineering, Department of Agriculture and Fisheries, Silverton, 0127, Republic of South Africa.

2. Vegetable Oils as Diesel Fuel: An Overview. E. H. Pryde.

3. Peanut Oil. Lawton Samples, Extension Engineering Department, University of Georgia, Tifton, Georgia 30602.

4. Engine Tests. J.B. Liljedahl and J.S. Marks, Agricultural Engineering Department, Purdue University, West Lafayette, Indiana 47907.

5. Sunflower Oil as a Diesel Fuel. G.L. Pratt, Chairman, Agricultural Engineering Department, North Dakota State University, Fargo, North Dakota.

6. Palm Oil as a Diesel Fuel. A.J. Akor, Michigan State University, East Lansing, Michigan.

7. Engine Tests. N. Sauter, John Deere and Company, Technical Center, Moline, Illinois.

8. Soybean Oil as a Diesel Fuel. R. McCutchen, Caterpillar Tractor Company, Peoria, Illinois.

9. The Chinese Tallow Tree. H. William Scheld, Department of Biology, University of Texas.

Research and Development Needs.

Chapter 8, Soybean oil, is summarized (p. 4): "After 200 hours under variable load in an engine equipped with a pre-combustion chamber, 100 percent hexane-extracted, water-degummed crude soybean oil gave no indication of any problems in the engine cylinder. Carbon build-up in the pre-combustion chamber was observed after 200 hours, but the deposit flaked off readily after building up to about 0.5 mm. Field trials in Brazil are being conducted with 30:70 soybean oil (degummed) to diesel oil mixtures."

Concerning: "1. Extraction / Expelling of Oil-On-Farm versus Co-op or Commercial Processing" we read (p. 5): "Extraction with hexane, which is more suitable for low oil content oilseeds such as soybeans, presents difficulties in on-farm operation in both safety and complexity. Since on-farm extraction is not a process that would be under time constraints, the possibility exists for batch extracting the seed oil over long periods with gasoline or diesel fuel. Over such periods the question needs to be raised concerning undesirable components being extracted along with the oil. In addition, the removal of gasoline or diesel fuel from the meal to salvage it for feeding seems an intractable problem.

"If extraction or expelling is done on-farm the fate of the defatted meal needs consideration. Few oilseed producers would have the livestock necessary to dispose of the meal directly. A commercial (or co-op) processor might more readily develop meal markets. Cargill, for example, already has a market for sunflower meal at 80% of the price of soybean meal."

Concerning "Oil refining" (p. 6): "Some oil processing techniques, e.g., hydrogenation–are probably not feasible at the farm level. Some refining treatments, e.g., transesterification–might be done at the farm level. The critical need is to determine the minimum refining needed and this will vary with the particular oil–soybean, sunflower, peanut–being considered. We also need to know the variability tolerable in current diesel fuels particularly in regard to the potential of vegetable oils for blending with diesel fuels."

Concerning "General Comments" (p. 7-8): "Demand / increase for soybeans will continue at the rate of 5-8% per year provided that adequate markets for the oil can be found."

Attachments:

1. List of American Oil Chemists' Society (AOCS) Test Methods pertinent to the Use of Vegetable Oils as Diesel Fuel.

2. Pyrolysis of vegetable oils as a route to hydrocarbon fuels: a selected bibliography.

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3. Transesterification of vegetable oils: a selected bibliography.

4. Vegetable Oils and Alcohol as Diesel Fuel. A Selected Bibliography. Address: Technology Transfer Program Leader, Northern Agricultural Energy Center, USDA, Peoria, Illinois.

303. Dubois, Donald K. 1980. Soy products in bakery foods. *AIB Research Department, Technical Bulletin* 2(9):1-10. Sept. [12 ref]

• ***Summary:*** Contents: Introduction. Processing of soy products. Quality factors. Defatted soy flour. Enzyme active soy flour. Full fat, high fat and lecithinated soy flours. Soy grits. Soy protein concentrates. Soy protein isolates. Milk replacer blends. Soy bran. Nutrition. Products. Summary.

AIB stands for the American Institute of Baking. "Soy products, because of their unique functional and nutritional properties, have become major ingredients in many food systems. The use of soy protein as an ingredient, extender, or analog has spread to every category of food, and consumption of edible soy protein in the United States has grown from less than one hundred million pounds per year in the early 1960's to over one billion pounds per year in 1978."

Ten tables give the nutritional composition plus NSI (Nitrogen Solubility Index) and PDI (Protein Dispersibility Index) of different soy products, and the manufacturer of each, as follows: Table IV–15 defatted soy flours: A.E. Staley: Bland 50, I-200, and F-200. ADM Company: Baker's Nutrisoy, Nutrisoy, and Toasted Nutrisoy. Central Soya Co.: Soyafluff 200W. Cargill, Inc.: 70 PDI Soy Flour and 20 PDI Soy Flour. Dawson Food Ingredients: Dawsoy Flour 100/70, Dawsoy Flour 200/20, Dawsoy Flour 200/70, and Dawsoy Flour 200/88. Farmland Industries: 200L and 200E.

Table V–2 enzyme active soy flours: ADM Company: Nutrisoy 7-B. Cargill, Inc.: 90 PDI Soy Flour.

Table VI–1 full fat soy flour made by Ingredients Systems, Inc.

Table VII–1 low fat soy flour made by Food Ingredients.

Table VIII–4 refatted soy flours made by ADM: 15% High Fat, Bakers Nutrisoy, Toasted Nutrisoy T-6, and Nutrisoy 220T.

Table IX–8 lecithinated soy flours: ADM Company: Soylec C6, Soylec C15, and Soylec T15. Central Soya: Soyalose 105W and Soyarich 115W. Cargill, Inc.: 3% Relecithinated soy flour, 6% Relicithinated soy flour, and 15% Relecithinated soy flour.

Table X–13 brands of soy grits: ADM Company: Defatted Soy Grits 8-20, Defatted Soy Grits 20-40, Defatted Soy Grits 40-80, and Defatted Soy Grits 80-0. A.E. Staley: Bland 50-Medium Grits and Bland 50-Coarse Grits. Lauhoff: Soy Grits 5/16, Soy Grits 8/30, and Soy Grits 20/0. Dawson Food Ind. [sic, Ingredients]: Dawson Grits 10, Dawson Grits 20, Dawson Grits 40, and Dawson Grits 60.

Table XI–3 "soy protein concentrates": Griffith Labs: Promax 70. ADM Company: Ardex 700F and Ardex 700G. A.R. Staley: Sta-Pro.

Table XII–16 "soy isolates" (incl. pH, particle size, and special properties of each): Ralston Purina: Edipro A, Supro HD 90, Protein 220, Supro 350, Supro 610, Supro 620, Supro 630, Supro 660, and Supro 710. Dawson Food Ind.: Isoprime 900, Isoprime 900GL, Isoprime 900G, and Isoprime 900L. Grain Processing Corp.: Pro-Fam S-955 and Pro-Fam S-970.

Table XIII–1 type of soy bran: Nutrisoy Fiber, made by ADM. Address: American Inst. of Baking, Manhattan, Kansas.

304. Miller, Frank. 1980. History of Texas Protein Sales and other Adventist food companies (Interview). Conducted by William Shurtleff of Soyfoods Center, Dec. 3. 1 p. transcript.

• ***Summary:*** Texas Protein Sales was founded in 1972 in Keene, Texas, by Frank Miller. The company is privately owned and Frank is a Seventh-day Adventist. He was formerly in the sales department at Madison Foods. Frank buys textured soy flour from Cargill, Staley, and Central Soya, then distributes it to meat plants. Texas Protein Sales also handles survival or disaster foods, but is not an actual manufacturer. Address: Texas.

305. Burbach, Roger; Flynn, Patricia. 1980. Agribusiness in the Americas. New York, NY: Monthly Review Press. 314 p. Index. 21 cm. [62 ref]

• ***Summary:*** "In southern Brazil, more than a dozen multimillion-dollar soybean processing plants owned by U.S. multinationals are scattered throughout the region., surrounded by large-scale mechanized soybean farms, none of which existed two decades ago." In Brazil, soybean production has been growing at the rate of 8-12% a year over the past decade (p. 84-85).

The chapter titled "The U.S. Grain Arsenal" gives a history and assessment of PL 480, the U.S. Food for Peace Program (established in 1954), as "an institutionalized arm of U.S. imperialism... In the past 25 years, close to $30,000 million worth of agricultural commodities have been shipped overseas under the PL 480 program. It is not surprising that little of this food has reached the hungry in recipient countries, since the original legislation did not even pretend to have a humanitarian purpose (The humanitarian intent clause was added to the law much later.) As suggested by its name–Agricultural Trade and Development Act–PL 480 was intended primarily to develop future commercial markets for U.S. grain exports and to solve the problem of mounting U.S. farm surpluses by dumping them overseas.

"In line with this purpose, over three-quarters of PL 480 commodities have been shipped abroad under long-term, low-interest credits provided by Title I of the law. These credits allow foreign governments to import U.S. agricultural products for resale in their own countries..."

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The sale of Title I commodities generates funds for the recipient governments (known as "counterpart funds"); these funds as a form of U.S. economic assistance, which have often been used to finance military expenditures. The repayment of PL 480 loans in local currencies was allowed until 1981.

Title II of the program, under which the U.S. finances food donations to "friendly countries" through private international relief agencies is of less direct political use.

During the first 12 years of the PL 480 program, "one-quarter of all U.S. agricultural exports were financed by PL 480's easy credit terms... In 1969 PL 480 accounted for only 15% of U.S. agricultural exports, and by 1977 this figure had dropped to 4%.

"Under the guise of the food aid program, the U.S. Department of Agriculture has worked hand in glove with grain multinationals to develop these commercial markets. One of their goals has been to generate demand for U.S. agricultural products by encouraging people abroad to adopt American-style eating habits. Trade associations representing the U.S. food industry have received millions of dollars worth of PL 480 local currencies toward this end. The U.S. Feed Grains Council, for example, has used these monies to promote the development of local livestock and poultry industries which rely on imported feed grains. Another example is the Western Wheat Growers Association, which has encouraged people throughout Asia to eat wheat-based products like bread instead of locally grown rice." Address: Members of NACLA.

306. Food Protein Council. ed. 1980. Government seminar. May 21, 1980: Abstracts and remarks. Washington, DC. 43 p. 28 cm. [65 ref]
• ***Summary:*** See next page. Contents: Introductory remarks, by B. Marlo Dirks (Procter & Gamble Co.). Rationale of soy products, by Russell Cooper (Ralston Purina Co.). Technical and nutritional aspects of soy protein, by Endre Sipos (Central Soya Co.). Current regulatory issues involving vegetable protein products, by Eugene I. Lambert (Covington and Burling, FPC Counsel). Educational effort by FPC, by Helen Horton (Miles Laboratories, Inc.).

Food Protein Council member firms: ADM, Cargill, Central Soya, Dawson Food Ingredients, General Foods Corp., General Mills, Inc., Grain Processing Corp., Honeymead Products, Kraft, Inc., Miles Laboratories, Inc., Nabisco, Inc., Procter & Gamble Co., Ralston Purina Co., A.E. Staley Mfg. Co. Address: 1800 M St., Northwest, Washington, DC 20036.

307. Mogush, John J. 1980. Soybean processing industry–U.S. and foreign. In: F.T. Corbin, ed. 1980. World Soybean Research Conference II: Proceedings. Boulder, Colorado: Westview Press. xv + 897 p. See p. 889-96. [1 ref]
• ***Summary:*** Contents: World oilseed production. Location of soybean processing facilities. Size and number of soybean processing plants. Technology. Integration. Transportation. Government regulation. Future directions in the industry. References. Address: Domestic Soybean Crushing Div., Cargill, Inc., Minneapolis, Minnesota 55402.

308. Morgan, Dan. 1980. Les géants du grain [The giants of grain]. Paris: Fayard. French edition of Merchants of Grain (1979). [112* ref. Fre]*
Address: Washington, DC.

309. Baldwin, A.R. ed. 1981. Proceedings of the World Conference on Soya Processing and Utilization. *J. of the American Oil Chemists' Society* 58(3):184A-246A, 121-542. March. Held Nov. 9-14, 1980 in Acapulco, Mexico. Illust. No index. 28 cm. [2218 ref]
• ***Summary:*** See page after next. This is one of the very best compilations of papers related to modern soy protein products and the other basics covered seen to date. Many of the papers in this conference are cited separately. Contents: Opening ceremony (2 papers). Soybean production (6 papers, 2 round table discussion, summary of discussions). Soybean processing (10 papers, 7 round table discussions, summary of discussions). Soya oil (11 papers, 6 round table discussions, summary of discussions). Soya meal (5 papers, 2 round table discussions, summary of discussions). Soya protein–products (10 papers, 5 round table discussions, summary of discussions). Soya protein–nutrition (12 papers, 22 round table discussions, summary of discussions). Contributed papers (4 papers). Address: Cargill.

310. Worthy, Ford S. 1981. The 500: The *Fortune* directory of the largest industrial corporations. *Fortune* 103(9):322-47. May 4.
• ***Summary:*** Companies are ranked by sales. Soy-related companies include: Ralston Purina (St. Louis, Missouri) is No. 72 with $4,886 million in sales. Land O'Lakes (Minneapolis, Minnesota) is No. 109 with $3,304 million. Archer-Daniels-Midland (Decatur, Illinois) is No. 139 with $2,802 million. Central Soya (Fort Wayne, Indiana) is No. 207 with $1,744 million. And A.E. Staley Mfg Co. (Decatur, Illinois) is No. 218 with $1,656 million in sales.

Note: Cargill is not listed because it is privately owned. In 1981 Cargill's sales were about $12,000 million a year. Exxon was No. 1 on the Fortune 500 with $103,142 million in sales. Mobil was No. 2 and General Motors was No. 3.

311. Andres, Cal. 1981. The versatile soybean: Supplies two necessary food components–protein and fats–plus wide range of functional attributes. *Food Processing* (*Chicago*) 42(5):142-44, 146, 150, 152, 154, 156, 158, 163. May.
• ***Summary:*** This article is in the section titled "Ingredients handbook." Contents: Introduction. Protein: Soy flour and grits (50-52% protein), soy protein concentrate (70%

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FOOD PROTEIN COUNCIL



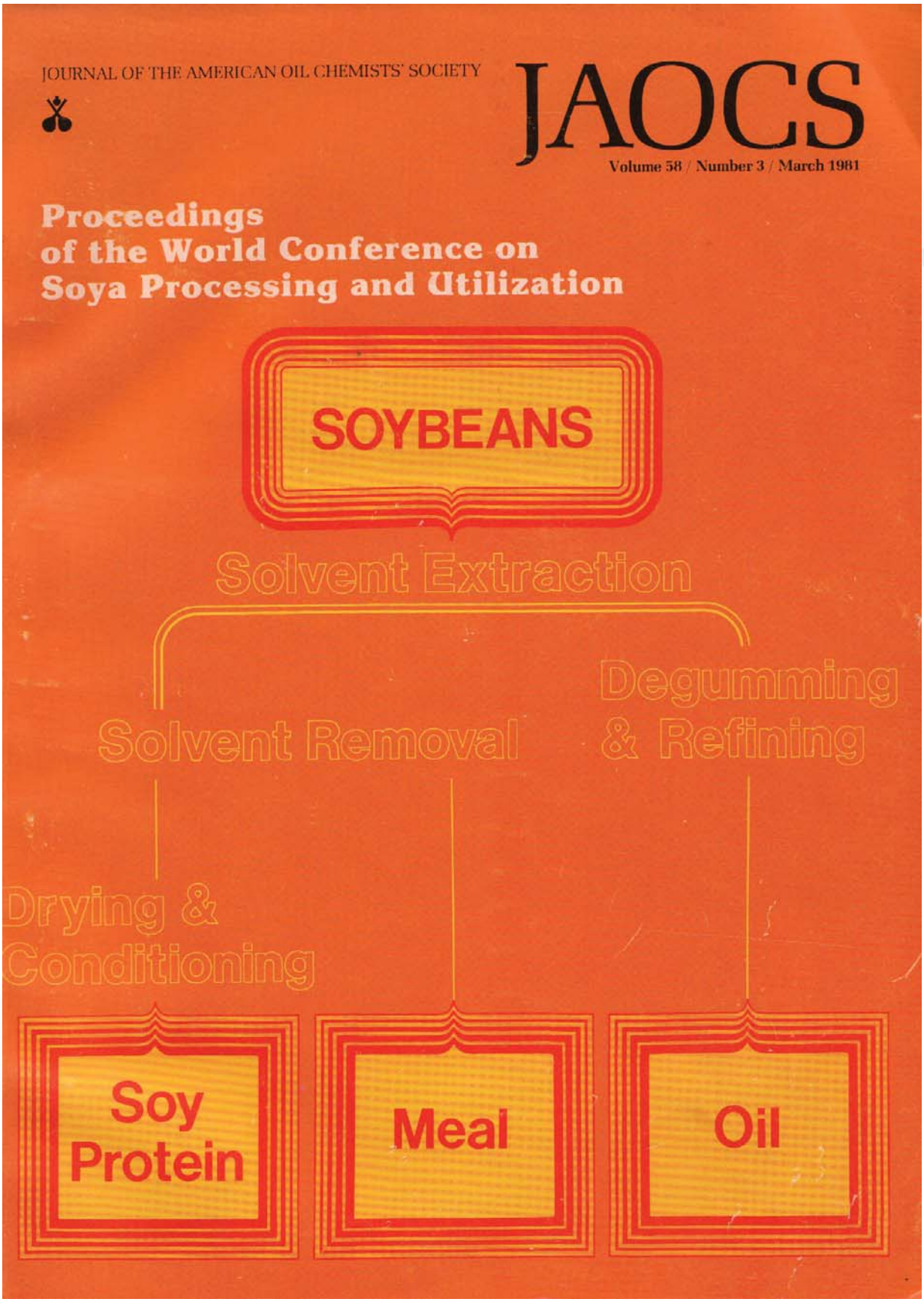
Government Seminar

MAY 21, 1980

Abstracts and Remarks

food protein council
1800 M STREET, N.W.
WASHINGTON, D.C. 20036
(202) 467-6610

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protein), and isolated soy protein (90% protein or more), extremely versatile, extruded products, spun soy protein made from isolated soy protein, functional benefits of using soy protein, analogs–products resembling conventional foods in appearance, color, flavor and texture (such as breakfast strips {bacon}, whipped toppings, and imitation cheese), soy protein makes excellent use of farmlands potential to produce protein, Gallup poll shows 71% of Americans view soy protein favorably, different types of soy flour.

Soy protein suppliers (tells what kinds of products are sold by each company): ADM Foods (Archer Daniels Midland), Cargill Protein Products Dept., Central Soya Co., Dairyland Products, Dawson Food Ingredients (Subsidiary of Dawson Mills), Farmland Agriservices, Inc. (formerly known as Far-Mar-Co., Inc.), Food Ingredients, Inc. (the U.S. "sales representative of a full-fat soy-protein flour produced in Germany), Griffith Laboratories, Kraft Foods (isolates), Lauhoff Grain Co. (soy flours and textured soy flour), Ralston Purina (regular isolates, "blends of isolated soy proteins plus other ingredients such as dairy products." "Structured isolated soy proteins are available as a fiber and as a granular product. The fiber is the frozen, hydrated form and is retort-stable with no degradation of fiber. Texture is similar to that of muscle fiber"), A.E. Staley Manufacturing Co. (The Protein People; soy flours and textured soy flours, soy protein concentrates, whipping proteins, hydrolyzed vegetable proteins), Food Protein Council (Washington, DC; has two brochures).

Soybean oil. Suppliers: Capital City Products Co. (Div. of Stokley Van Camp, Inc.), Durkee Foods (Div. of SCM Corp.), Humco Products (Div. of Kraft, Inc.), A.E. Staley.

Lecithin. Lecithin suppliers: Ross and Rowe, Inc. (Div. of ADM; regular and granulated lecithin), Central Soya, A.E. Staley. On the last page is given the full name and address of each supplier mentioned in the article.

Photos in the article show the cover of the following brochures, each available from one supplier: (1) ADM Foods: "Look where soybeans go." (2) Central Soya Co.: "Soy flours & soy grits." (3) Food Protein Council: "Vegetable protein: Products and the future." (4) Kraft: "The new soy on the block." (5) Ralston Purina: "Purina proteins: Product information."(6) A.E. Staley: "The protein people." (7) Food Protein Council: "Soy protein: Improving our food system." (8) ADM: "Food oils." (9) Capital City Products: "A complete line..." (9) Staley: "Refined oils." (10) Ross & Rowe, Inc.: "Soybean lecithin: Yelkin T,..." (11) Central Soya Co.: "Lecithin from Central Soya naturally." (12) Ralston Purina Co.: "Nutritional aspects of Ralston Purina isolated soy protein." Address: Senior Associate Editor.

312. Shurtleff, William; Aoyagi, Akiko. 1981. History of Cargill, Inc. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 8 p. Sept. 8. Unpublished typescript. Available online at www.soyinfocenter.com.

• ***Summary:*** www.soyinfocenter.com/HSS/cargill.php

A comprehensive history of the subject. Contents: Introduction: Oldest company, last to enter the industry, now the largest. Early years (1865-1939): Origin in about 1865, description of company, 1920's and 1930's. 1940-1959: Entry into soybean crushing in 1942, four plants by April 1945, six plants by Sept. 1947, seven plants by 1955 and move into international grain market, rapid expansion to lead in 1957, first industrial oil refining. 1960-1980's: 1960 situation, started overseas in Spain in 1965, 3 European plants, 9 foreign feed plants by 1969, big financial disclosure in 1969, prosperity and controversy in the 1970's, new plants, Brazil operations and government loan, 1973 controversy setting off soybean boycott, Tradax, government requirement for grain companies to report big orders, 20 plants on 5 continents in 1975, world's largest grain trading company, diversification, move into vegetable oil refining, 14 U.S. and 6 overseas plants in 1980, enviable position of having plants in U.S.-Brazil-Europe triangle. Address: Lafayette, California. Phone: 415-283-2991.

313. Dunn, John R. 1981. U.S. cooperative soybean processors (Interview). Conducted by William Shurtleff of Soyfoods Center, Sept. 15. 1 p. typescript. [1 ref]

• ***Summary:*** It is now generally agreed that ADM has passed Cargill as America's leading soybean crusher–but both companies have about the same crushing capacity. According to his best information, America's top 12 soybean crushers are (as of Oct. 1979): 1. ADM. 2. Cargill. 3. A.E. Staley. 4. Central Soya. 5. Bunge. 6. Ralston Purina. 7. Gold Kist. 8. Farmland Industries. 9. Continental Grain. 10. Riceland Foods. 11. Quincy Soybean. 12. Land O'Lakes. Other leading cooperative crushers, in descending order of size, are Honeymead Products, Agri Industries, Boone Valley Processing & Marketing Assoc., and Missouri Farmers Association. All of these companies use solvent extractors.

The top 4 firms own and operate 54.5% of the processing capacity. The next 4 control 20.6%, for an 8-firm total of 75.1%. The next 4 control 11.2%, for a 12 firm total of 86.3%. Bunge, which is based in Argentina, has moved up on the list through some recent acquisitions, including a plant in Mississippi in July from Gold Kist.

Concerning cooperatives, each regional co-op is taken as a unit. They operate completely independently of each other. So it is not accurate to think of the co-ops as a whole–although they do have some areas of cooperation with one another, e.g. export sales efforts and domestic processed product sales. The operate independently on procurement and processing. The total amount of soybeans crushed by the cooperatives is probably less than that crushed by ADM or Cargill. Address: USDA Agricultural Cooperative Service (ACS), Washington, DC 20250. Phone: 202-475-4929.

314. Andres, Cal. 1981. Functionality of milk proteins, soy

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concentrates, and/or soy isolates at reduced costs: Modified soy flour. *Food Processing* (*Chicago*). Oct. p. 86-87.
• ***Summary:*** Functionality is increasingly becoming the main reason for adding protein to food formulations; soy protein products can provide this functionality at reduced cost. For bar charts show different functional properties. (1) Fat binding (grams of fat per grams of product): Dry milk 2.3, soy concentrate G 2.0, sodium caseinate 1.7. (2) Water binding (grams of water per gram of product): Soy isolate R: 6.7, soy concentrate G 5.0, soy concentrate 3.8. (3) Solubility (% solids in solution after centrifuge): Sodium caseinate 96, whey 95, nonfat dry milk 93, modified soy flour 61. Grittiness (in compound coating): Nonfat dry milk 4.0, whey 3.3, soy concentrate G 2.7.

The cost of modified soy flour is lower than that of casein, nonfat dry milk, whey, soy concentrate, and soy isolate. However its cost is slightly higher than regular soy flour.

For more information on modified soy flour contact Cargill, Inc., Protein Products, P.O. Box 2817, Cedar Rapids, Iowa 52406. Address: Senior Associate Editor.

315. National Soybean Processors Association. 1981. Yearbook and trading rules 1981-1982. Washington, DC: National Soybean Processors Association. ii + 106 + A1-12. 23 cm. Spiral bound.
• ***Summary:*** See next page. On the cover (but not the title page) is written: Effective October 1, 1981. Issued annually to all members of the association. Contents: Constitution and by-laws. Officers and directors. Executive office. Members. Associate members. Standing committees. Trading rules on soybean meal (first adopted 18 Oct. 1933). Sales contract. Appendix to trading rules on soybean meal: Official methods of analysis (moisture, protein, crude fiber, oil {only method numbers listed}), sampling of soybean meal {at origin} (automatic mechanic sampler, pneumatic probe sampler, probe sampler), sampling of soybean meal (at barge loading transfer facilities), official weighmaster application, semi-annual scale report, manufacturers' certification–Installation of automatic sampler (at barge loading transfer facility), semi-automatic sampler certification (at barge loading transfer facility), official referee chemists (meal). Soybean meal export trading rules: Minimum blending procedures for export meal blended at ports, sampling of soybean meal (at vessel loading facilities), manufacturers certification–Installation of automatic sampler (at vessel loading facility), semi-automatic sampler certification (at vessel loading facility). Trading rules on soybean oil (first adopted 21 May 1930). Sales contract. Definitions of grade and quality of export oils. Soybean lecithin specifications. Appendix to trading rules on soybean oil: Inspection, grading soybean oil for color (NSPA tentative method), methods of analysis (A.O.C.S. official methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses; soap stock, acidulated soap stock and tank bottoms (only method numbers listed), official weighmaster application, semi-annual scale report, official referee chemists (oil). Soybean oil export trading rules. Uniform soybean oil export contract. Foreign trade definitions.

The page titled National Soybean Processors Association (p. ii) states: "During the past crop year about 1,000,000,000 bushels of soybeans moved through processing plants of NSPA's 24 member firms. Approximately 50 percent of America's 1.8 billion-bushel soybean crop was bought and processed by NSPA members. Exporters account for another 36 percent of the crop, and the remainder [14%] is returned to farms for seed, feed, and residuals." Also discusses industry programs, soybean research, and international market development."

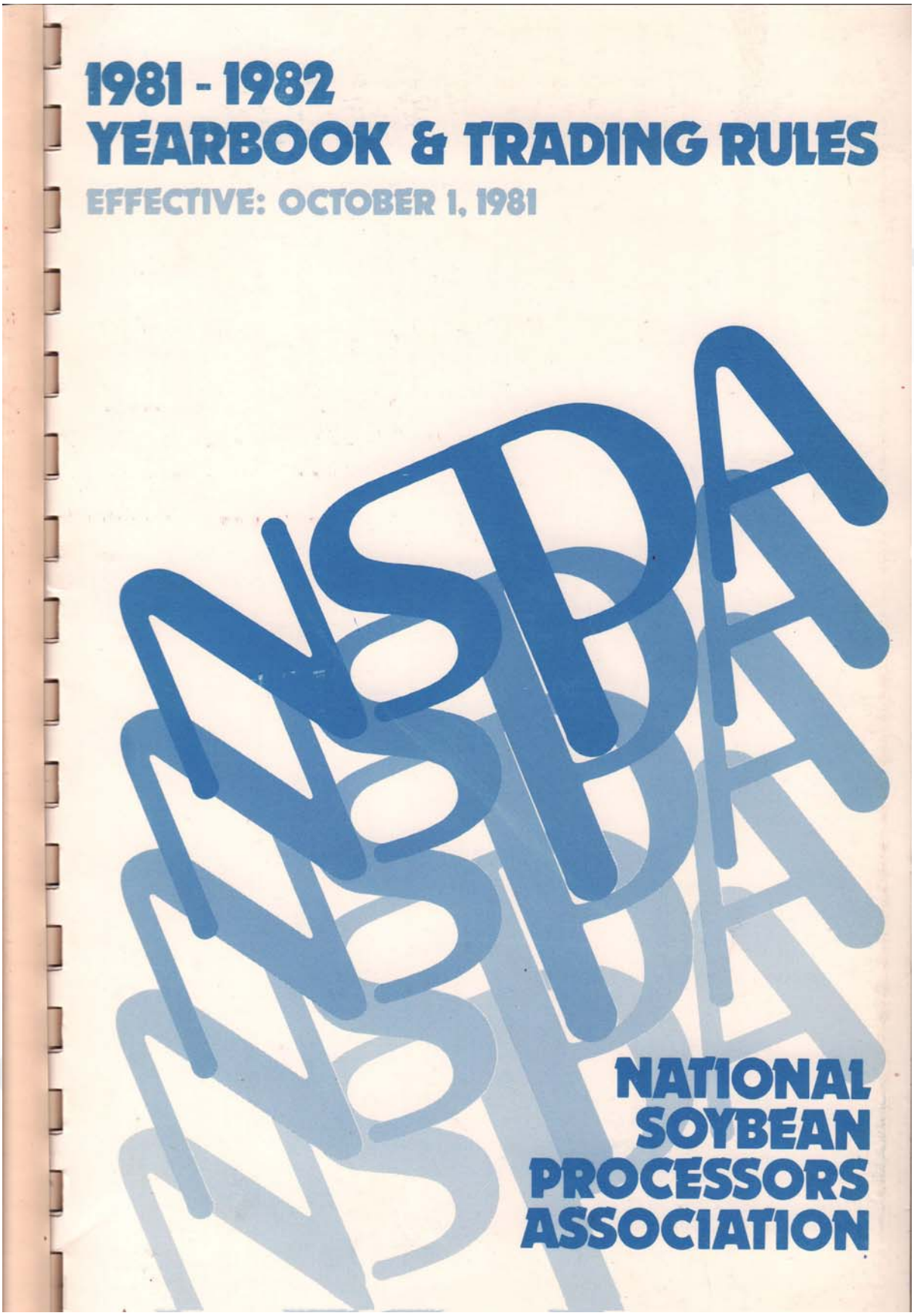
The section on officers, executive committee, and board of directors (p. 7-8) gives the name, company affiliation, and phone number of each person. Officers–Chairman: Gaylord O Coan, Gold Kist, Inc. Vice Chairman: Edward J. Cordes, Ralston Purina Co., President: Sheldon J. Hauck. Secretary: Donald H. Levinworth, Cargill, Inc. Treasurer: Lowell K. Rasmussen, Honeymead Products Co. Immediate past chairman: C. Lockwood Marine, Central Soya Co., Inc.

Executive committee: Richard G. Rypkema ('83), Agri Industries. Charles Bayless ('83), Archer Daniels Midland Co. David C. Thompson ('82), Bunge Corporation. Harold H. Leavenworth, Cargill, Inc. C. Lockwood Marine, Central Soya Co., Inc. Gaylord O. Coan, Gold Kist, Inc. Lowell K. Rasmussen, Honeymead Products Co. Kermit F. Head ('82), Missouri Farmers Assn.–Grain Div. Sewell L. Spedden ('82), Perdue, Incorporated. Edward J. Cordes, Ralston Purina Co.

Board of directors (alphabetically by company; each member company has one representative on the board): Richard G. Rypkema, Agri Industries. Thomas H. Wolfe, Anderson, Clayton & Co. Charles Bayless, Archer Daniels Midland Co. Keith Voigt, Boone Valley Coop. Proc. Assn. David C. Thompson, Bunge Corporation. Harold H. Leavenworth, Cargill, Inc. C. Lockwood Marine, Central Soya Co., Inc. Ronald L. Anderson, Continental Grain Co. Donald M. Chartier, Farmland Industries, Inc. Gaylord O. Coan, Gold Kist, Inc. Lowell K. Rasmussen, Honeymead Products Co. Kenneth J. McQueen, Land O'Lakes, Inc. Kermit F. Head, Missouri Farmers Assn.–Grain Div. Robert E. Hicks, Owensboro Grain Co., Inc. Sewell L. Spedden, Perdue, Incorporated. Wilton L. Adcock, Planters Oil Mill, Inc. Thomas L. Shade, Quincy Soybean Co. Edward J. Cordes, Ralston Purina Co. William P. Hudson, Riceland Foods, Inc. J.D. Morton, Sherman Oil Mill. Styles M. Harper, Southern Soya Corp. Kenneth A. Robinson, A.E. Staley Mfg. Corp. Preston C. Townsend, Townsends, Inc. Tyler Terrett, West Tennessee Soya Mill, Inc.

Executive office, Washington, DC: Executive Director, Sheldon J. Hauck. Director, Public Affairs: Murray C. Keene. Director, Regulatory Affairs: Rhond R. Roth.

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Administrative Asst.: Alicia B. Rickman. National Soybean Crop Improvement Council: Robert W. Judd, Managing Director. General counsel: Elroy H. Wolff, Sidley & Austin. Special counsel: Julian B. Heron, Jr., Heron, Haggart, Ford, Burchette & Ruckert.

Members (listed alphabetically by company; within each company, first the name of the official Association representative {who is on the Board}, followed by the other personal members listed alphabetically by surname. For example, Archer Daniels Midland Co., the company with the most personal members, has 23. After the name of each personal member is given with his address and phone number. In the listing below, the number of personal members is shown in parentheses after the name of each company, followed by city and state of the various locations): Agri Industries–Soybean processing division (2); Des Moines, Iowa. Anderson, Clayton & Co. (4): Phoenix, Arizona, Jackson, Mississippi, Houston, Texas. Archer Daniels Midland Co. (23); Archer Daniels Midland Co. (26); Little Rock, Arkansas; Augusta, Georgia; Decatur, Illinois; Galesburg, Illinois; Granite City, Illinois; Fredonia, Kansas; Mankato, Minnesota; Red Wing, Minnesota; Kansas City, Missouri; Clarksdale, Mississippi; Fremont, Nebraska; Lincoln, Nebraska; Kershaw, South Carolina; Memphis, Tennessee. Boone Valley Coop. Processing Assn. (3); Eagle Grove, Iowa. Bunge Corporation (9); Cairo, Illinois; Danville, Illinois; Logansport, Indiana; Emporia, Kansas; Marks, Mississippi; New York City, New York. Cargill, Inc. (20); Osceola, Arkansas; Gainesville, Georgia; Cedar Rapids, Iowa; Des Moines, Iowa; Sioux City, Iowa; Washington, Iowa; Chicago, Illinois; Wichita, Kansas; Burnsville, Minnesota; Minneapolis, Minnesota; Fayetteville, North Carolina; Sidney, Ohio; Memphis, Tennessee; Chesapeake, Virginia. Central Soya Co., Inc. (11); Gibson City, Illinois; Decatur, Indiana; Fort Wayne, Indiana; Indianapolis, Indiana; Belmond, Iowa; Bellevue, Ohio; Marion, Ohio; Delphos, Ohio; Chattanooga, Tennessee. Continental Grain Co. (11); Guntersville, Alabama; Chicago, Illinois; Taylorville, Illinois; New York City, New York; Cameron, South Carolina. Farmland Industries / Far Mar Co (4); Van Buren, Arkansas; Sergeant Bluff, Iowa; Hutchinson, Kansas; St. Joseph, Missouri. Gold Kist Inc. (6); Decatur, Alabama; Atlanta, Georgia; Valdosta, Georgia. Honeymead Products Co. (3); Mankato, Minnesota. Land O'Lakes, Inc. (5); Fort Dodge, Iowa; Sheldon, Iowa; Dawson, Minnesota; Minneapolis, Minnesota. Missouri Farmers Assn.–Grain Div. (6); Mexico, Missouri. Owensboro Grain Co., Inc. (2); Owensboro, Kentucky. Perdue Incorporated (2); Salisbury, Maryland. Planters Oil Mill, Inc. (2); Rocky Mount, North Carolina. Quincy Soybean Co. (4); Quincy, Illinois. Ralston Purina Co. (8); Bloomington, Illinois; Lafayette, Indiana; Iowa Falls, Iowa; Louisville, Kentucky; Kansas City, Missouri; St. Louis, Missouri; Raleigh, North Carolina; Memphis, Tennessee. Riceland Foods, Inc. (9); Helena, Arkansas; Stuttgart, Arkansas. Sherman Oil Mill (1); Fort Worth, Texas. Southern Soya Corp. (1); Estill, South Carolina. A.E. Staley Manufacturing Co. (7); Decatur, Illinois. Townsend's Inc. (2); Millsboro, Delaware. West Tennessee Soya Mill, Inc. (1); Tiptonville, Tennessee.

Associate Members: ACLI Soya Co, White Plains, New York. Anderson Clayton Foods, Dallas, Texas. Balfour MacClaine International, Ltd., New York City, New York. Best Foods, a Unit of CPC International Inc., Englewood Cliffs, New Jersey. Canadian Vegetable Oil Processing–Div. of Canada Packers Inc., Hamilton, Ontario, Canada. Cobec Brazilian Trading & Warehousing Corp. of the U.S., New York City. Delta Cotton Oil & Fertilizer Co., Jackson, Mississippi. Durkee Foods, Div. of SCM Corporation, Chicago, Illinois (Millark M. Evak). Hunt-Wesson Foods, Inc., Fullerton, California. Kraft, Inc.; Glenview, Illinois; Memphis, Tennessee. Lever Bros Co., New York City, New York. Louis Dreyfus, Stamford, Connecticut. Maple Leaf Monarch Co., Toronto, Ontario, Canada (W.G. Milliken). Marwood Company, San Francisco, California. Overseas Commodities Corp., Minneapolis, Minnesota. Pillsbury Co., Minneapolis, Minnesota. Procter & Gamble Co., Cincinnati, Ohio. Schouten International, Inc., Minneapolis, Minnesota. Spencer Kellogg, Div. of Textron, Inc., Buffalo, New York. Alfred C. Toepfer, Inc., New York City, New York (Dierk Overheu).

Standing committees: For each committee, the function of the committee, the names of all members (with the chairman designated), with the company and company address of each are given–Export development committee, Crop Improvement Council. Meal trading rules. Oil trading rules. Safety, health, and loss prevention. Technical. Address: 1800 M. St., N.W., Washington, DC 20036. Phone: 202/452-8040.

316. Dunn, John R. 1981. Re: History of U.S. cooperative soybean processors. Letter to William Shurtleff at Soyfoods Center, Nov. 17–in reply to inquiry. 3 p. Typed, with signature. [2 ref]

• ***Summary:*** There are three basic organizational types for soybean plant cooperatives: (1) mills owned independently by single local cooperative associations, (2) mills owned by federated regional cooperatives which are, in turn, owned by local cooperatives, and (3) mills owned by centralized regional cooperatives, which are directly owned by farmer members. In reality, combinations of these three types are possible."

"Typically, the meal from cooperative soybean plants is sold either to cooperative feed mills (intra or inter-association sales) to non-cooperative feed mills, or to exporters. Very little meal is sold directly back to farmer owners.

"Most coop mills are not operated in direct conjunction with local cooperative grain elevators, as you indicate in

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the text. This may have been the case in the 1940's perhaps, but since that time, mills have become more independently located, procuring soybeans from farmers, from several local elevators by truck, or from distant production regions by train.

"I believe that ADM is now the largest processor–slightly ahead of Cargill. I don't have good figures to back that, however, rather a growing consensus among industry experts.

"Since our study, Gold Kist has sold its plants in Marks, Mississippi, and Decatur, Alabama, to Bunge, dropping Gold Kist to a 15 rank and raising Bunge to 3rd. The net effect on total cooperative share of processing capacity was to lower it to about 17 percent.

"Finally, while ACS has worked closely with the cooperative processors over the years, it would probably be an overstatement to say that we have worked with them more than any other government agency–I just don't know on that one. The credit for cooperatives' success in soybeans accrues to cooperatives themselves, and what assistance we have provided pales by their accomplishment.

"The following table shows various cooperative soybean processors, where they have or have had mills, and when each mill started or was operated. (1) Gold Kist: Decatur, Alabama 1974-1981; Marks, Mississippi 1977-1981; Valdosta, Georgia 1968-present. (2) Farmland Industries: Van Buren, Arkansas 1960 [sic, Oct. 1959]; Sergeant Bluff, Iowa 1974 [sic, Aug. 1975]; St. Joseph, Missouri 1963 (Far-Mar-Co merger). (3) Riceland Foods: Helena, Arkansas 1965; Stuttgart, Arkansas 1958. (4) Land O'Lakes: Sheldon, Iowa 1970; Dawson, Minnesota 1980; Ft. Dodge, Iowa 1971. (5) Honeymead Products: Mankato, Minnesota 1960. (6) Agri Industries: Mason City, Iowa 1943; Manning, Iowa 1979 [Formerly North Iowa Cooperative Processing Assoc., managed by Glenn Pogeler from 1943-1964]. (7) Boone Valley Processing Association: Eagle Grove, Iowa 1943. (8) Missouri Farmers Association: Mexico, Missouri 1946."

On other subjects: Intrade was formed in 1968. Farmers Export Co. [FEC] started in 1968. SoyCot started exporting soybean products in 1979. Address: USDA Agricultural Cooperative Service (ACS), Washington, DC 20250. Phone: 202-475-4929.

317. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Hartsville, South Carolina.
Date of Introduction: 1981.
Ingredients: Soybeans.
New Product–Documentation: *J. of the American Oil Chemists' Soc.* 1985. "Soy pioneer bows out, others grow bigger." March. p. 474, 476. Cargill has a soybean crushing plant in Hartsville, South Carolina.

Lauser, Greg C. 1982. "History of Cargill's involvement in the soybean processing industry." Minneapolis, Minnesota. 5 p. Unpublished typescript. March 15. Courtesy Cargill, Inc. In 1981 Cargill acquired a soybean crushing and vegetable oil refinery complex in Hartsville, South Carolina.

318. Francke, A. 1981. Plant proteins, the European experience. In: D.W. Stanley, E.D. Murray, and D.H. Lees, eds. 1981. Utilization of Protein Resources. Westport, CT: Food & Nutrition Press, Inc. 403 p. See p. 362-69. Chap. 19.
• ***Summary:*** Contents: Introduction. Vegetable protein sources. Production technology–soy. Application technology–soy. Market situation. Consumer acceptance. Legal acceptance. Conclusions.

"Unilever has played an active role in both the production and application of soy protein materials... In Europe the major source for the production of vegetable protein for human consumption is still the soybean...

"Production of soy protein materials in Western Europe is concentrated in Denmark, The Netherlands and the United Kingdom. France and West Germany produce only small amounts... Some producers are U.S. firms (e.g. Cargill, ADM) or their European subsidiaries; others are European companies. Typical European producers are Aarhus Oliefabrik (Denmark), Unimills (The Netherlands), Spillers and British Soya Products (United Kingdom) and Edelsoy [Edelsoya?] (West Germany)...

"Typical European producers of isolates are Oppenheimer (England) and Edelsoy (West Germany). Fibre spinning is still being studied, e.g. by Rhône Poulenc, France, although it has not made a real break-through. The protein department of Courtaulds (United Kingdom) who until recently, was the sole European manufacturer and supplier of spun soy fibres has been taken over by Mars...

"The whole current range of soy protein materials is being used in Europe. The best information is available for the United Kingdom. There, in 1972, 90% of the 45,000 tons of soy food ingredients used was accounted for by full-fat flour in bakery products and, to a lesser extent, in baby and health foods. Only 2,000 tons of soy materials, textured and non-textured flours and isolates, were used in meat products, mainly in institutional feeding and in the catering sector. This amount has increased to 5,000 tons in 1975. In 1977, the total consumption of soy materials amounted to 50,000 tons; thus no great change had occurred." Address: Unilever Research Duiven, Zevenaar, The Netherlands.

319. *EUVEPRO Newsletter.* 1981?--. Serial/periodical. European Vegetable Protein Federation, Rue de l'Orme 19, B-1040, Brussels.
• ***Summary:*** Euvepro was founded in 1978, with some support from the American Soybean Association. In 1983 it had about 60 members, both industrial consumers and manufacturers. Leviton (Nov. 1983) reported that at that time one of Euvepro's principal efforts was to change the tariff classification on soymilk, thereby permitting increased

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trading through lower taxes. Claudio Rochietta of Cargill is chairman of the upcoming Euvepro Conference. Address: Europe.

320. Boismenue, Clyde. 1982. Textured soy protein products in America today (Interview). *SoyaScan Notes.* Jan. 26. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The biggest present outlet for TVP (more precisely textured soy flour or TSF) is in the pet food industry, and some is used in the U.S. school lunch program. Occasionally a foreign country, such as Poland or the USSR, will buy some to extend meats.

The Briggs Amendment is a California state amendment of about 1975; it regulates the labeling of meat products containing soy. If you add soy to hamburger you must label it "imitation hamburger," and even restaurants and institutions must state the names on the menu or, if there is no menu, in a sign on the wall, if the extender is bread crumbs. But the health inspectors overlook a lot of violations, as in small restaurants. Companies are not even allowed to use fanciful names such as "Superburger." Because of all this, customers in California have stopped using soy in droves and brought sales to a crashing halt. Clyde thinks there may be a similar law in New York; he does not know how many other states have such restrictive laws.

Nationwide, imitation cheese must have the word "imitation" as the largest word on the box; it looks absurd.

A company that wants to make TSF must buy a number of large extruders. Each one makes 3,000 to 5,000 lb/hour, and most companies own 3 to 5. Every one of the major manufacturers for TSF or textured soy protein products is losing money. Prices are terribly low and the industry is operated at an estimated 10% of capacity in 1981.

ADM's TVP is the most dense, but it gets too soft on cooking. Textured concentrates are too hard, and are like gristle or rubber in the finished product; they have less flavor but cause less flatulence. Textured isolates are too expensive, costing more than the meat they are intended to replace. All companies are desperate for a breakthrough.

ADM has never spent much money on developing imitation beef, ham, or chicken. Yet it the company has developed meatless entrees to increase profit margins. Uncle Archie's line of meatless entrees included Pepper Steak (the first one developed), Chicken Almadine, Sweet and Sour Pork, and Hearty Stew. ADM wanted to move from TVP extender to meatless entrees about 2 years ago. Like everybody, they rushed to GNC (General Nutrition Corp.), which reformulated the pepper steak by removing the mushrooms. It didn't sell well before or after the reformulation, so ADM tried to market it themselves under the Uncle Archie's brand. From the start, they appealed to the Safeway mentality, using lots of artificial ingredients. The product now tastes good but it looks like they will flop anyway.

Worthington and Loma Linda are also having big, indeed disastrous, problems. All the TSP (textured soy protein) products are dying on the vine. Central Soya can't sell textured concentrates. Loma Linda plans to try to duplicate the success of Sanitarium Food Co. [Australia] with breakfast cereals. Some health food stores have carried Loma Linda products, but natural food stores object to all the additives. And now even some Seventh-day Adventists are starting to be critical for the same reason. None of the natural- or health food stores will carry Clyde's TVP because it contains so much artificial stuff.

Nabisco is no longer in the business, and Central Soya has discontinued the line of material they bought from General Mills. Cargill and Lauhoff are now in quite a precarious position. Cargill makes a good line of soy flours, but they also have a line of textured protein products that they have never been able to position correctly; they are operating at about 10% of capacity. Cargill got in early then in 1976 spent several million dollars more upgrading their plant so it is one of the nicest in the industry. A man with the inside scoop on Cargill is ADM's manager in the western region, Bill Potter, phone 213-833-1389. He was Cargill's sales manager and now lives in Los Angeles.

The three people and companies that hold all the process patents and pooled them were Nabisco, Swift & Co. and ADM; that jump-started this industry. All three had a slightly different process, so they cross licensed to get the TVP process going. Lynn Adolphson of ADM is the best man in the USA to ask about his; he really knows the industry.

General Mills was one company that really went into TSP in a big way. They had a line of flavored products that has never been duplicated since–all the TVP items that were used as meat extenders, including the Bontrae line which were very fancy products. They introduced spun isolates in a

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really big way in both the bacon bits type products and their whole line of frozen meat analogs. One day they shut down the whole operation without any warning. They sold the frozen line to Dawson Mills, and sold the Bontrae process to Central Soya, both of whom have shut down these products in the last 18 months or so. Dawson Mills got completely out of the ISP business, but may still have a weak line of textured products. People keep hoping the market will materialize, but it never happens, so eventually they have to get out to cut their losses.

Three companies went out in the first washout: General Mills, Swift & Co., and finally the Marschall Division of Miles Laboratories. A division of National Can called National Protein Products or something like that made a compressed soy grit very similar to that made by Nabisco.

We're now heading for a second washout. Lauhoff is weak but has a little niche in the pet food industry. With the market collapsing and export sales bleak, everyone is going hook and tong after the pet food industry. Lauhoff was just bought by Bunge. Worthington is probably in a pretty precarious position. They have huge capacity with a market of 2-10% of capacity.

Lauhoff and Cargill will probably be the next ones out. Dawson Mills is sort of dragging along at the rear, a little weak. Clyde is not sure if they still sell textured products. They banked an awful lot on textured soy concentrate. They still have a few fairly large customers–such as SAGA Food Services. All three companies need big volume to run their machines economically.

ADM is definitely in the strongest, premier position among the makers of new soy protein products. ADM has strength across the board–not just in pet foods. They are the only company with a truly complete line of products and a decent line of flavored products. ADM is way out in front with the edible soy products because of better texture and flavor. Cargill, Dawson Mills, and Central Soya have sort of a nondescript product–not outstanding and not positioned well. They are losing money.

Central Soya is having problems with its textured soy protein concentrate. Staley is a dogged competitor. They have concentrated on a few items which they sell inexpensively; they do a good job with those, but they have no flavored products. Farmland (Far-Mar-Co) is also a dogged competitor. They have a line of flavored TSF that has never gone any where.

Each strong manufacturer has at least one pet food account from which they draw their financial life. All the companies are losing money on their pet food TSF but they have to have it to keep their overhead spread thin enough to make money on anything else. So the competition in the edible soy products industry is brutal.

What killed them all was Wenger Manufacturing Co. In the early days the pet food makers were happy to get TSF at 60 cents/pound, which was much cheaper than beef. But soybean meal was 6 cents/pound. So pet food makers started to buy a lot–dozens of carloads. Then Wenger shows up and says, "Why not buy an extruder, buy soybean meal for 6 cents/pound, and make your own TSF?" This forced TSF processors to drastically lower rates to cost of meal plus a fixed processing charge. That still allowed the processors to work off a lot of scrap. Some bought Wenger extruders. That was the end of profits in the pet food industry.

Dwayne Andreas took an early liking to TVP. Dwayne is a very homey person, a Quaker [sic, Mennonite] in the true sense. He developed and made a flaked breakfast cereal out of TVP; it contained 100% of the RDA for everything and you just poured milk on it–not a hot cereal. Or it could be used as a tuna extender. But in about 1972 the cereal makers rejected it; they thought it was too concentrated. That was one of the first times ADM got burned–a sort of TVP tragicomedy. Bob Sullenberger is another key man and good source of information. Address: Basic Foods Co., 1211 E. Olympic Blvd. #204, Los Angeles, California 90021. Phone: 213-623-6686.

321. Tsukamoto, J.Y. 1982. Soybean production in western Canada. Paper presented at the 37th Annual Meeting of the Expert Committee on Grain Breeding (ECGB). 10 p. Held 16 Feb. 1982.

• ***Summary:*** "The commercial scale production of soybeans in Western Canada was limited primarily to Manitoba because of a lack of markets for soybeans in both Saskatchewan and Alberta... According to the cooperators' estimated yields, a total of about 32,500 bushels (884.7 tonnes) was produced in the Agro-Man soybean production demonstration, for which McCall yielded an average of 22 bushels per acre (1480 kg/ha) and Maple Presto yielded about 14.5 bushels per acre (975 kg/ha) (See Table 1)...

"Cargill Grain Company Limited reported that they had three major contracts for the commercial production of soybeans using the variety McCall. The fields ranged in size from 150 acres (61 ha) to 500 acres (202 ha). Yields ranged from 22 bushels per acre (1,480 kg/ha) at Morden to 32 bushels per acre (2,152 kg/ha) in the Emerson and Portage la Prairie areas...

"There also was some production of soybeans not for crushing but for human consumption. It is estimated a total of approximately 4,500 acres (1,821 ha) of soybeans were grown in Manitoba in 1981." Address: Manitoba Agriculture.

322. Lauser, Greg C. 1982. History of Cargill's involvement in the soybean processing industry. Minneapolis, Minnesota. 5 p. March 15. Unpublished manuscript.

• ***Summary:*** Soybean processing: "1942–Cargill entered the soybean processing business with the acquisition of expeller plants in Springfield, Illinois (sold in 1950), and Cedar Rapids (east), Iowa. Note: These two plants were purchased from Ike Sinaiko and Joe Sinaiko respectively, but probably

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in 1943.

"1943–Cargill acquired Plymouth Processing Company's plant and grain elevator at Ft. Dodge, Iowa (sold in 1971 [to Land O'Lakes]).

"1945–The company acquired from Honeymead solvent extraction plants in Spencer and Cedar Rapids (west), Iowa. The solvent-extraction process is used in modern plants today.

"1946–Cargill acquired the Washington, Iowa, soybean crushing plant and began crushing flax seed at a plant it built at Port Cargill in Savage, Minnesota. The same year, the company acquired from the Falk Corporation a flax processing plant in Minneapolis. Since 1967, that plant also has been crushing sunflower seeds.

"1947–The company opened a soybean crushing plant at Savage, Minnesota.

"1950–Cargill built its first plant specifically designed to crush soybeans in Chicago to serve domestic oil and meal markets. In 1956, a refinery was built adjacent to the crushing plant that produces industrial refined non-edible oil used in paints and other protective coatings and in vinyl products. Cargill also acquired a flax crushing plant in Philadelphia that was closed as a crushing plant in 1953.

"1957–Cargill opened a soybean processing plant in Memphis, Tennessee. A second plant was added adjacent to the first in 1970.

"1959–Cargill expanded the scope of its soybean crushing activities to the Southeast by opening a facility in Norfolk, Virginia, and acquired a plant in Sioux City, Iowa, from Sioux Industries.

"1960–The Wichita, Kansas soybean crushing plant was acquired from the Soy Rich Company.

"1961–The company acquired the Des Moines, Iowa soybean crushing plant from Spencer-Kellogg Co. In 1967, Cargill opened its first domestic salad oil refinery adjacent to this crushing plant.

"1965–Cargill began crushing soybeans overseas at its new plant in Tarragona, Spain.

"1968–The company opened a second overseas crushing plant in Amsterdam, the Netherlands.

"1970–A third seed crushing plant [named Soja-France, with Dominique de Clerq as chairman of the board and general manager] was opened at St. Nazaire, France. A crushing plant at Reus, Spain, also was added in 1970 and Australian cottonseed crushing operations were acquired in 1972.

"1967–The company opened the Gainesville, Georgia, soybean processing plant. A refinery, Cargill's first to produce hydrogenated or "hardened" oil for the Southeastern food manufacturing industry, was built adjacent in 1979.

"1970–Cargill built the Fayetteville, North Carolina, crushing plant and a refinery was added in 1976.

[1971–Soybean crushing plant at Fort Dodge, Iowa, sold to Land O'Lakes.]

"1973–Soybean processing complex began operations at Ponta Grossa, Brazil.

"1975–Acquired plant in Osceola, Arkansas.

1976–Soybean plant was built at Barcelona, Spain.

"1977–Soybean plant constructed and operations began at Brest, France.

"1978–The company opened a soybean processing plant in Sidney, Ohio, to serve domestic meal and oil markets. This facility was the company's first soybean processing plant designed to burn coal as its source of power.

"1980–Construction began on vegetable oil refinery adjacent to Wichita soybean crushing plant and operations started in late 1981. A crushing plant also was acquired in Antwerp, Belgium.

"1981–Company acquired a soybean crushing and vegetable oil refinery complex in Hartsville, South Carolina.

"1982–Cargill acquired a soybean crushing plant in Monte Alto, Brazil.

"Summary. Soybean Crushing: The company now operates soybean processing plants in the United States, the Netherlands, Belgium, France, Spain, Brazil. The plants range in capacity from 20,000 to nearly 120,000 bushels a day. In the U.S., the company operates 15 plants in Iowa, Illinois, Minnesota, Kansas, Virginia, North Carolina, South Carolina, Tennessee, Georgia, Arkansas and Ohio. It operates 6 U.S. refineries located in Gainesville, Georgia; Fayetteville, North Carolina; Des Moines, Iowa; Hartsville, South Carolina; Chicago, Illinois and Wichita, Kansas."

In a cover letter to William Shurtleff, Greg says: "I'd now like to answer the specific questions you posed in you letter:

"1. Ralston Purina is the largest animal feed producer, according to *Feedstuffs* magazine.

"2. Will Cargill is the focus of Cargill's early history because he was the founder and is generally regarded as the most innovative and enterprising, while his brothers' skills in administration and finance served the company well.

"3. Nutrena Mills were headquartered in Kansas City, Kansas, when they were acquired in 1945. While they may have used Cargill soybean meal in their animal feeds, it is highly unlikely because of the transportation costs between Kansas City and the nearest Cargill crushing plants at the time in Ft. Dodge and Washington, Iowa. Nutrena probably had closer sources of supply for meal.

"4. I've addressed the seeming contradictions you mentioned in the attached, edited version of your copy." Address: Public relations, Cargill, P.O. Box 5625, Minneapolis, Minnesota 55440.

323. Eldridge, Arthur C. 1982. Determination of isoflavones in soybean flours, protein concentrates, and isolates. *J. of Agricultural and Food Chemistry* 30(2):353-55. March/April. [9 ref]

• ***Summary:*** These commercial soy products have high

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estrogenic activity. Their total and individual isoflavone content was determined by high-performance liquid chromatography. Dehulled, defatted soybean flours (10 samples) contain the following mean isoflavone content (mg/100 gm): Genistin 119.8, daidzin 61.7, daidzein 32.8, genistein 26.6, glycitein 7-Beta-glucoside 12.9. The total of these numbers is 253.8. The same isoflavones were found in soy protein concentrates and isolates but in decreased amounts.

Preparation of extracts: Ground defatted soybean flour was extracted with several solvents. Refluxing with 80% methanol gave the maximum extraction and most reproducible results.

Of the commercial soy flours used, one was a true soy flour (Nutrisoy 7B, made by ADM), and eight were textured soy flours: TVP (unflavored, ADM), Textratein (Cargill), Centex 300, 300L, 400, and 400 SL (Central Soya Co.), Mira Tex (Staley), and Promote III, SL (Griffith Labs).

The soy protein concentrates tested were: Response (Central Soya Co.), Food protein concentrate (Swift & Co.), Pro Con 2000 (Staley), Promosoy 100 (Central Soya), and GL-301 (Griffith Labs). GL-301 had the highest total isoflavone content (317) and Promosoy 100 had the lowest (16)–a dramatic difference. Those with the highest isoflavone content were prepared by aqueous leaching of defatted soybean flours, whereas those with the lowest content were prepared by extracting hexane-defatted soybean meals with alcohols, which removed some of the isoflavones from the meal.

The soy protein isolates tested were: Edi Pro N, Edi Pro A, Supro 610, 620, and 710 (all made by Ralston Purina Co.). Supro 710 had the highest total isoflavone content (132) and Supro 620 had the lowest (105)–a relatively small difference. Address: Northern Regional Research Center, Peoria, Illinois.

324. Shellenbarger, Sue. 1982. Bigness counts in agribusiness and Cargill Inc. is fast becoming a commodities conglomerate. *Wall Street Journal.* May 7. p. 40 (East).
• ***Summary:*** An in-depth look at the little known privately-owned giant that trades and processes grains and oilseeds. Graphs show Cargill's annual earnings and sales from 1971 to 1981. Earnings rose from about $45 million in 1971, to over $200 million in 1975, dropped to about $100 million in 1977, then topped a record $250 million in 1980. Sales have grown dramatically from about $5 billion in 1973 to $28.4 billion in 1981–but the profit margin in 1981 was only 0.73%–the lowest in over a decade. In the export boom years from 1973 to 1981, Cargill's cumulative profits totaled over $1,500 million. The company's total assets exceeded $5 billion in 1981 and its net worth is about 1.8 billion. Cargill is working to get bigger by acquisitions. In 1978 it outbid ConAgra Inc. for MBPXL Corp., America's second largest beef packer after Iowa Beef Processors Inc. Its stakes in the poultry business are also increasing. Yet for all size and activity, Cargill remains unknown to many consumers and farmers.

The company started in 1865 as the operator of a lone country grain elevator. The Macmillan family has played a central role in management ever since 1916, when John Macmillan, who had married into the Cargill family, took control during a period of severe financial stress and managed to pay off creditors. Today Whitney Macmillan is chairman and CEO. M.D. "Pete" McVay, Cargill's president is generally credited with building much of Cargill's new milling and processing business. Cargill's headquarters, a replica of a French chateau, are on the banks of Lake Minnetonka, Minnesota. Address: Staff Reporter, Wall Street Journal.

325. Cargill, Domestic Soybean Crushing Division. 1982. How our energy-efficient processing helps plug your soybeans into more markets (Ad). *Soybean Digest.* Nov. Back cover.
• ***Summary:*** See next page. A full-page color ad. The top half contains a photo of a huge soybean, with an electric power cord running from the back of the bean and plugging into a plug on a photo of Planet Earth.

The bottom half of the ad contains this text:

"We're using the old 'bean' to cut our energy costs.

"We've gotten a lot smarter about saving energy. We know that more than half the variable cost of processing soybeans involves some form of energy. And we're cutting those costs every way we can.

"Since 1972. we've reduced the energy needed process a bushel of beans by more than 40%. We're recycling heat from grain dryers; adding extra insulation to steam pipes; replacing gas and fuel oil with coal-fired boilers at several Cargill plants; even changing the method of processing soybeans.

"Energy isn't saved in big gulps.

"It's saved in little sips. And to make sure we're not wasting energy, every Cargill soybean processing plant keeps a sharp eye on energy consumption. It's paying off. Today, our total per-bushel processing cost (adjusted for inflation) is less than half what it was 30 years ago.

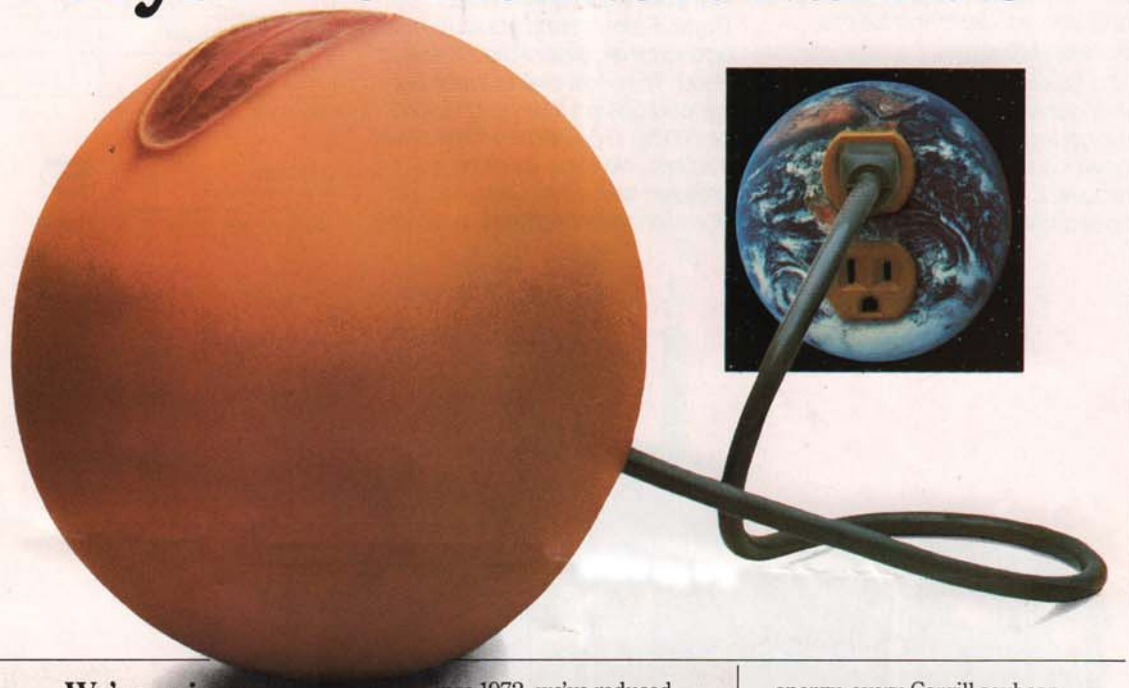
"By cutting costs we run our plants more efficiently. That helps make our meal and oil prices more competitive in U.S. and world markets. It also helps plug us into new markets and increase demand for your beans. And that can be a very good thing for both of us."

At the lower right is the round green and white Cargill logo. Address: Box 9300, Minneapolis, Minnesota 55440. Phone: (612) 475-6102.

326. Cargill, Domestic Soybean Crushing Division. 1982. Cargill's lower shipping costs are keeping soybeans on the right track (Ad). *Soybean Digest.* Dec. p. 47.

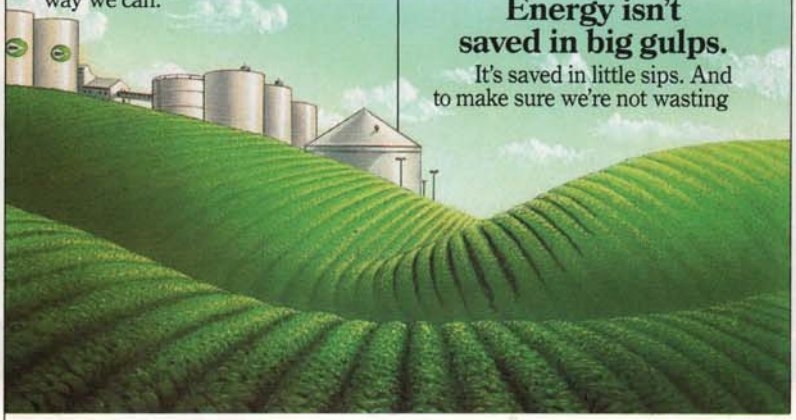
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How our energy-efficient processing helps plug your soybeans into more markets.



We're using the old "bean" to cut our energy costs.

We've gotten a lot smarter about saving energy. We know that more than half the variable cost of processing soybeans involves some form of energy. And we're cutting those costs every way we can.



Since 1972, we've reduced the energy needed to process a bushel of beans by more than 40%. We're recycling heat from grain dryers; adding extra insulation to steam pipes; replacing gas and fuel oil with coal-fired boilers at several Cargill plants; even changing the method of processing soybeans.

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By cutting costs we run our plants more efficiently. That helps make our meal and oil prices more competitive in U.S. and world markets. It also helps plug us into new markets and increase demand for your beans. And that can be a very good thing for both of us. Domestic Soybean Crushing Division, Box 9300, Minneapolis, MN 55440. (612) 475-6102.

CARGILL

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• ***Summary:*** A full-page color ad. The top half contains a photo of a huge soybean, hilum in the middle, resting on some railroad tracks. The lower half is this text:

"We've been working with the railroads: Deregulation has freed up the railroads so they can better compete in the transportation marketplace. And we're working with them to find innovative ways to lower rates through cost efficiencies. For example: the cost of shipping soybean meal from some of our processing plants has dropped by nearly 50%. With savings like that, you can be sure that meal will be priced right to assure a ready market. And that's just one of the ways we're keeping your beans competitive.

"The meter's running even when the train isn't: Shippers charge us a fee for letting railcars, trucks, barges or ships stand empty before loading. To help eliminate many of these charges we've developed faster and more efficient loading and unloading methods.

"For example, instead of loading whole ships with soybean meal, we're arranging large combination cargoes with other commodities. That cuts our soybean meal export costs and gives our customers better service.

"Transportation efficiencies like these reduce the cost of the services we provide. That's a big way to keep soybean meal competitive in the United States and world markets and build demand for your soybeans. Keeping soybeans on the right track can be a very good thing for both of us."

At the lower right is the round green and white Cargill logo. Address: Box 9300, Minneapolis, Minnesota 55440. Phone: (612) 475-6102.

327. **Product Name:** [Soy Flour, Soy Grits].
Manufacturer's Name: Cargill B.V. Affiliate of Cargill, Inc., USA.
Manufacturer's Address: Coenhavenweg 2, P.O. Box 8074, 1013BL Amsterdam, Netherlands.
Date of Introduction: 1982.
New Product–Documentation: Soya Bluebook. 1982. p. 68; 1986. p. 87. Note: This entry states that Cargill also offers soy protein concentrates and soy protein isolates, however Cargill purchases these two products from another company; Cargill does not manufacture them.

328. Costa, Jose Antonio; Marchezan, E. 1982. Caracteristicas dos estadios de desenvolvimento da soja [Characteristics of the stages of soybean development]. Campinas, Sao Paulo, Brazil: Fundacao Cargill. 30 p. [Por]* Address: Campinas, Sao Paulo, Brazil.

329. **Product Name:** [Purina Protein Soy Flour, Cargill Soy Flour, and Cargill Textratein].
Manufacturer's Name: Interfood Deutschland GmbH. Div. Interfood Luxemburg SAH.
Manufacturer's Address: Goldgrubenstr. 6A, 6380 Bad Homburg, West Germany.
Date of Introduction: 1982.
New Product–Documentation: Soya Bluebook. 1982. p. 61, 66; 1986. p. 86. Address is now Louisenstr. 115, 6380 Bad Homburg 1, W. Germany.

330. Forrestal, Dan J. 1982. The kernel & the bean: The 75-year story of the Staley Company. New York, NY: Simon and Schuster. xxv + 315 p. Illust. Index. 22 cm.
• ***Summary:*** This is the best (and only) history of the A.E. Staley Manufacturing Company.

Contents: The kernel [corn]. The bean [soya]. 1. How it all began. 2. The high road to debt and Decatur. 3. Staley makes history in sports. 4. Soybeans come to the U.S. 5. What's good for Decatur is usually good for Staley and vice versa. 6. Trials and triumphs of the thirties (In 1938 Staley launched Sweetose corn syrup, made with enzyme technology). 7. Countdown for a weary pioneer. 8. New management and a new world war [World War II]. 9. Strictly business. 10. Smooth road ahead, except for the bumps. 11. The shock waves of the sixties. 12. That Shangri-La called retail. 13. The sweetest story ever told. 14. A little thing called fermentation. 15. The soaring seventies. 16. The new Staley Company. Directors and corporate officers (1951-1981). Honor roll of service.

Augustus Eugene Staley was born on 25 Feb. 1867 in a log cabin on a 265-acre farm near Julius, North Carolina. His father was William Staley [1840-1885] and his mother was Mary Jane Ledbetter Staley [1842-1906]. Augustus was the eldest child. The three other children in the family were Arthur E. Staley [1869-1930], Georgiana Staley [1872-1952], and Wilhelmina C. "Willa" Staley [1885-1950]. Growing up on a farm with many chores to attend to, little Gene had little time for primary school, except during the winter months; he was a self-taught and self-made man.

"At one camp meeting, in 1880, Gene Staley's father met a Methodist [other accounts say Baptist] missionary who had recently returned from China and who had brought back a basket of strange beans called soybeans. Gene Staley later recalled, 'The missionary gave my father a handful of the beans. My father turned them over to me to play with. I planted two rows of the beans in the family vegetable garden. I was proud of them. I weeded them and picked them. Then I planted some more. The missionary said they would be good for the soil. I believed it–even if no one else did.'"

In 1881, at age 14, he began selling some produce from the family farm in Randleman, the nearest town; it contained 300 people and was 9 miles away. He drove the farm's wagon alone and barefoot, and by mid-day, having sold everything, he headed home and declared "I'm going to be a businessman."

In Sept. 1883 he saw a sign in Greensboro, North Carolina, that read "Boy Wanted–$15 a Month." He went to the Odell Hardware Company's retail store on South Elm Street and got the job. There he was given the hard work of

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lifting farm implements in the back room. He learned how to stretch $15 a month, of which $10 went for room and board. At Christmastime he was fired.

For the next 14 years, from 1883 to 1897, Gene Staley was a successful traveling salesman. He visited such distant places as Seattle, Washington. He made good money although he had to work long hours and had no fixed location to call home. In 1896, his net profit was $5,000–a fortune at the time. More important, he learned a great deal about how to be a successful salesman, and about business and people.

On 14 Dec. 1898 Gene Staley, age 31, was married to Emma Tressler, age 23, and the daughter of Andrew J. and Emeline Richardson Tressler of Bryan, Ohio. She was a fine pianist. She agreed to his proposal on the condition that he "Settle down in Baltimore and have a home I can share with you." They lived in a rented house at 1721 St. Paul Street. She continued her piano lessons at a Baltimore conservatory. Gene's starch suppliers were giving him a hard time, so he decided to start his own starch manufacturing company. On 12 Nov. 1906 the "A.E. Staley Starch Manufacturing Co. of Baltimore, Maryland, was incorporated under the favorable auspices of Delaware law, with Gene Staley as president and Charlie Schuster as secretary-treasurer." He found shareholders to fund his new operation among the roughly 2,600 starch retailers who knew him directly. The company was capitalized at $3.8 million. In early 1908 he learned that a 13-year-old starch manufacturing plant in Decatur, Illinois, was in receivership. The location he knew was ideal. In 1909 he bought it for $45,000 and began to fix it up. (p. 19, 25).

Though corn refining by the "wet milling" process would continue to be A.E. Staley's principal business, in 1922 founder Gene Staley declared: "The day will come when our plant will process more soybeans than corn." By 1950 this prediction had come true, as the Decatur facility handled 50 carloads daily of soybeans versus 30 of corn.

As early as 1918 Gene Staley had begun his own soybean investigations, and in 1920 he ordered two expellers from the V.D. Anderson Company of Cleveland, Ohio. The manufacturing equipment was ready by 1921 but two delays held up the commencement of soybean crushing: (1) A special ramp for trucks bringing soybeans into the plant needed to be built, and (2) 1921 was a year of economic depression for both the nation and the company; Staley's expenses exceeded income by $692,000. Finances were so tight that it was deemed prudent to delay the pioneering venture into soybean processing for another year.

In 1922 the company issued two formal announcements: (1) June 1922: "The A.E. Staley Manufacturing Company announces that in response to the general and urgent desire on the part of farmers in Central Illinois, it has been decided to install a soybean plant in conjunction with the Decatur starch and glucose manufactory.

"A satisfactory building is now in readiness. Several expellers have been purchased and delivered. Bean dryers are under construction. Storage for 150,000 bushels of beans is ready for use. The plant is planned so that large increases in capacity may be had without expensive changes. The first unit will have a capacity of about 500 bushels a day. It will be finished in ample time for the 1922 harvested crop."

(2) Oct. 1922: "On September 30, the new soybean plant of the A.E. Staley Manufacturing Company was put into operation, thus inaugurating a new industry for Central Illinois and providing the growers of this territory with a market for their beans."

Staley's first actual purchase of soybeans occurred on September 28, 1922, from the Andrews Grain Co. of Walker, Illinois. The transaction involved 1,547 bushels at $0.9975 per bushel. Subsequently 5,674 bushels were purchased from various sources. However after operating for only 16 days and producing 209,300 lb of soybean meal and 42,036 lb of oil, the expellers ran out of beans and had to be shut down. Later more beans were found but the new mill was in operation for a total of only 74 days in 1922 and 57 days in 1923. When the 1924 season approached, soybeans were rather plentiful–but at $1.50 a bushel. Although soybean production and acreage in Illinois were now growing rapidly, times were still hard for the company. A letter written by Gene Staley in May, 1924, in response to an inquiry from West Virginia, said, in part: "The result of our experience in the soybean industry so far has been both unprofitable and discouraging, but it is our intention to leave the machinery in our plant for another year. If the operations are not profitable, we'll dismantle the plant and discontinue the soybean business altogether... Our company refused to pay over $1.50 [a bushel; some new companies have paid up to $1.80] but on 34,000 bushels we lost more than $12,000."

Fortunately a major upswing came in 1925. The company bought almost 70,000 bushels of soybeans for $1.30 a bushel and stayed in operation for 7 months. This increased to 8 months in 1926. Staley continued to buy all the soybeans that farmers brought him (p. 60-62).

Page 54: "Soybeans come to the U.S.: In 1922, the city fathers of Decatur, Illinois, never envisioned their community hosting such organizations as Soy Capital Bank & Trust Company, Soy Capital Electric Inc., Soy City Electric Supply Co., Soy City Marine Inc., Soy City Motel, Soy City Tire & Retreading Inc., Soy City Towing Co., Soyland Power Cooperative Inc., and Soyland Service Center, Inc.

"Not to mention radio station WSOY.

"Back in 1922, Decatur was a beanless sort of place, content to be in the heart of the Midwest's sprawling farm belt where corn ruled as king of the realm, and content to have the Staley company spearheading corn's golden era."

The term "The Castle in the Cornfields" is in the Index and appears on pages x, 83, 91, 93, 188, and 245. Page 87 states: "the editors [in 1929 and 1930] began to call it 'The Castle in the Cornfields.'"

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The amazing story of this building's construction appears on pages 83-91. The story of its sweltering interior and how air conditioning finally arrived is on pages 188-91. The ground was broken on 16 Feb. 1929 and the new offices were occupied on 19 April 1930 (p. 87). However the building was not finished until 1931.

Note 1. Soyinfo Center believes that (in some areas) this book is more colorful than it is accurate. For example, the crucial "Peoria Plan" of 1928 is not mentioned.

Note 2. The biggest weaknesses of this excellent book are: (1) it has no bibliography, endnotes or footnotes. So we generally don't know the author's source of any particular piece of information. (2) It contains almost no genealogical information about A.E. Staley's family; when and where were his children born? when and where were they married, and to whom? (Continued). Address: Decatur, Illinois.

331. Forrestal, Dan J. 1982. The Soybean Special train (spring 1927). Helping to establish the National Soybean Oil Manufacturers Association (1930) (Document part). In: Dan Forrestal. 1982. The Kernel & the Bean: The 75-Year Story of the Staley Company. New York, NY: Simon and Schuster. xxv + 315 p. See p. 64-68.

• ***Summary:*** Gene Staley was concerned that farmers would not be farsighted enough to plant enough soybeans to keep up with his ambitious plans. He felt he would need more than 300,000 bushels of soybeans by the mid-1930s. So he decided to conduct a massive education program throughout central Illinois by hiring a train! He announced that "the newest thing on rails will be the Soybean Special." Working together with the Illinois Central Railway Company, the University of Illinois College of Agriculture, and Southern Illinois Normal University, Staley helped put together a promotional marvel. The project was planned in 1926 and began operation in the spring of 1926.

When the Soybean Special rolled out for inspection on 28 March 1927 in Decatur, it was "whistle-tooting proof that Gene Staley was a salesman, an 'operator,' an entrepreneurial innovator, and a spirited crusader for the lowly bean."

The Soybean Special consisted of an engine and six cars. "At the rear was an office car containing dining and sleeping quarters for officials." There were two cars contained exhibits and displays on soybean planting, cultivation, processing, and utilization, prepared with the help of Professor J.C. Hackleman of the University of Illinois. There were also two cars converted into motion picture theaters and a lecture car. In 1927, between March 28 and April 17, a total of 33,939 passed through the train as it traveled 2,478 miles and made 105 scheduled stops.

A special touch of showmanship, suggested by Staley, was a contest–with prizes were awarded in seven districts of the 19 counties visited by the train. Each prize was the same–50 tons of soil-enriching limestone. The game involved guessing the number of soybeans in a 5-gallon glass jug.

"Frederick Wand, articulate expert on soybeans, was the Staley company's principal and constant representative on the train, but Gene Staley went aboard for some parts of the excursion. When a young visitor asked Staley if he was the 'inventor' of soybeans, and displayed a sense of modesty which was appropriate under the circumstances but otherwise atypical. When a newspaper reporter asked Staley if he ever had time to cultivate a hobby, he replied, 'Sure.' When the reporter followed through with the question, 'What might your hobby be?' the Decatur entrepreneur answered, 'Soybeans–just soybeans I guess.'"

"The year 1927 showed the Staley company far out in front in the soybean industry, crushing 216,000 bushels and accounting for 39% of all beans processed by an industry that was now up to 18 processors. (This leadership role was destined to be staunchly maintained by Staley until 1957 when Cargill Inc., the formidable Minneapolis [Minnesota] company, unceremoniously jostled Staley off the peak.)"

The early years were difficult because, before 1922, not many soybeans were grown on farms around Decatur. Gene Staley recalls (p. 68): "But I worked hard and wound up losing money on soybeans in the start-up years... even though I always knew we were on the right track and would need perseverance and patience in order to achieve profits." I was nice to have a profitable corn refining company to support these new, experimental ventures.

"By 1930 the soybean processing industry had expanded enough to feel it needed a trade association. The Staley company was represented at an organizational meeting held at the City Club in Chicago as were Archer Daniels Midland Company, Allied Mills Inc., Funk Bros. Seed Co., and Spencer Kellogg & Sons, Inc. By the time the National Soybean Oil Manufacturers Association was completely organized, it had 12 processing companies in its ranks. It subsequently changed its name to the National Soybean Processors Association." Address: Decatur, Illinois.

332. Forrestal, Dan J. 1982. The kernel & the bean: The 75-year story of the Staley Company (Photo captions). New York, NY: Simon and Schuster. xxv + 315 p. Illust. Index. 22 cm.

• ***Summary:*** The photographs are not numbered, nor are the glossy pages on which they appear.

Photos show (after page 6): 1. "Company founder A.E. Staley Sr., poses proudly with his Masonic emblem in his lapel. Born in 1867, he died in 1940."

2. "This is the grave of William Staley, father of the company's founder. The cemetery is located adjacent to the farm where Augustus Eugene Staley was born, near Julian, North Carolina."

3. "Mr. and Mrs. William Staley are shown in this early photo, made near Julian, North Carolina. Their first child, born in 1867, Augustus Eugene–who would become the founder of the Staley company–is at the left. The other

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children are Georgiana, Arthur and Wilhelmina. The photo was made circa 1880."

4. "Starting in 1898 with $1,500 capital, Mr. Staley set the groundwork for the A.E. Staley Manufacturing Company by selling Cream Corn Starch to housewives and small grocers in the East."

5. "Below, one of the earliest subscriptions for shares of preferred stock in the Staley company. Note the 1907 date. The company was incorporated the year before."

6. "Incorporated in 1906, the Company purchased this defunct corn processing plant in Decatur in 1909 and began operations three years later."

7. Pictured above in a *Decatur Review* of 1912 were 'structures on which $150,000 is to be expended in remodeling by the A.E. Staley Manufacturing Company, which will employ 200 men when in operation.'"

8. "George E. Chamberlain was hired as general superintendent in 1912 with the assignment to 'run the plant.' He held the same position until his death in 1926."

9. "W.S. 'Billy' Pritchard, originally hired by Staley to pack Cream Corn Starch, was the oldest employee in point of service. More than once, when the new business was performing poorly, Pritchard nearly resigned, only to be induced to stay. Originally hired as a salesman, at a salary of $3.25 per week, Pritchard ultimately was elected to membership on the board of directors."

10. "Charles J. Schuster was hired as secretary-treasurer in 1903 at the Staley company's Baltimore office, remaining there until the office was closed during the Great Depression 30 years later."

11. "A five-room frame building, with a brick vault added as an afterthought, provided ample office space for the company in 1910. Later growth could be marked by the way additions were built on to the structure. By the time it was demolished in 1930, the frame structure was a large two-story building."

12. "Providing hot meals for employees in a plant was an innovation in 1911. Staley people of that day remember eating heartily of 'home cooked' meals served at a counter."

13. "The tall, slender gentleman disguised by the distinguished-looking beard and Panama hat is a much younger George Chamberlain."

After page 38: 14. "The *Staley Fellowship Club Journal*, forerunner [the *Staley Journal* and later] of today's *Staley News*, was first published in 1917. Pictured on the cover, top row, from left, are C.G. 'Boob' Keck, a foreman in the plant who was president of the fellowship club; Woodrow Wilson, president of the United States; and A.E. Staley, Sr., company president. Pictured below them is George Chamberlain, general superintendent of the plant."

14. "These were attendees when the first sales meeting was held in Decatur in December, 1922. Front row, from left, Reginald Pope, W.H. Randolph, Jr., New York; L.R. Dickinson, Boston; G.A. Dean, Spartanburg, S.C.; Don J. Houran, Jack Hixon. Second row, from left, Theodore Jones, Tommy Webb, George Diamond and J.W. Pope, Atlanta."

15. "These were the members of the Staley Fellowship Club, formed in 1917."

16. "Addition to Mill House, circa 1919."

17. "Under construction in 1920 was the syrup refinery, which in this photograph is mistakenly labeled the Bone Black Kiln house. The building is now known as No. 10 and is still in use."

18. "The Syrup Packing House, or Building 17, under construction in 1919." A huge building.

19. "A.E. Staley, Sr., pictured above, generally recognized as the founder of soybean processing in this country, opened the first soybean expeller plant in Decatur on September 30, 1922. Mr. Staley had to use all of his persuasive skills to convince corn farmers, who used soybeans solely as a nitrogen replenisher for the soil between corn plantings, that there was money to be made in rotating the two crops."

20. "This was the pioneering professional football team, the Decatur Staleys, which was organized and managed by George Halas starting in 1920. This legendary team won the national professional championship in 1920 with ten victories, one loss and two ties. Most of the players had achieved fame at colleges before signing on as Staley football-playing employees who had additional duties to perform in the Decatur company's office and plant." The name of each player is written in white on his dark jersey.

21. "Mr. Staley gave Halas $5,000 'seed money,' allowing him to move the team to Chicago. He asked only that Halas continue to call the team the Staleys for one more season." A full-page letter, written on Staley letterhead, details the agreement.

22. "Joe 'Iron Man' McGinnity, left, joined the company as manager of the Staley baseball team in 1919. He had set major league pitching records for Brooklyn and Baltimore in 1900 and 1901, and ultimately was enshrined in the Baseball Hall of Fame at Cooperstown, New York. George Halas, above, better known for his football exploits, was a hard-hitting outfielder on the Staley team. Halas earlier played briefly for the New York Yankees."

23. "For many years the Staley field, located at the corner of Eldorado and 22nd Streets in Decatur, was the center of the city's sports interests."

24. "Founder Staley (in derby) and Judge Kennesaw Mountain Landis, on his left, at the 1927 dedication of Decatur's Three-I League ballpark, Fans Field."

After page 102: 25. "This headline from a *Decatur Review* of 1930 told of an explosion at Staley. Note misspelling of the word 'receive.'"

26. "Early quality control was conducted in small but adequate quarters in Decatur."

27. "Immediately following World War I, Staley glucose syrup was shipped to England in large [wooden] barrels."

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Note: Staley was making corn syrup commercially by about 1919-1920. By 1923 it was named "Staley Syrup."

28. "In 1920, when he was chosen as the Democrats' nominee for vice president of the United States, Franklin Delano Roosevelt visited the Staley plant in Decatur, accompanied by Mrs. Roosevelt. The visitors are flanked by A.E. Staley, company founder (right), and George E. Chamberlain, general superintendent (left). Roosevelt and James M. Cox, the presidential nominee, were defeated by Republicans Warren G. Harding and Calvin Coolidge. Roosevelt later was elected to four terms as president in 1932, 1936, 1940 and 1944, the only man in history to hold that distinction."

29. "Thornton C. 'Chase' Burwell, top left, was a long-time vice president and manager of transportation. Edwin Scheiter, above right, joined Staley upon graduation from Decatur High School and rose through the ranks to become the first non-Staley-family president of the company. James H. Galloway, below left, was the company's first plant superintendent, while C.C. 'Dok' Hollis, below right, was placed in charge of the firm's Chicago office in 1927.

30. "Officers of the Staley Sales Corporation in the early years included, seated from left, Roy M. Ives, Ray C. Scherer, A.E. Staley, Jr., and Edwin K. Scheiter. Standing is Company President A.E. Staley, Sr.

31. "Members of the early grocery products sales force drove their own delivery trucks, in an attempt to assure customers of prompt, individual service."

32. "Lake Decatur has for many years provided an important supply of water to the Staley company. The upper floor of the pumping station, at the shoreline, formerly served as headquarters for the Staley Fellowship Club."

33. "Some early delivery trucks displayed signs identifying the company they represented." This sign says "Staley's."

34. "The Staley Viaduct, a 'great, safe route to the Northeast,' was opened on July 3."

35. "The viaduct, which carries traffic over the plant site, was built as a cooperative effort among the Staley company, the Wabash Railroad, the City of Decatur and Decatur Township."

36. "A.E. Staley was proud of his 1929 touring car and prouder of the Administration Building erected at the east end of town."

37. "Ground breaking for the building took place on February 16, 1929. On April 19, 1930, employees moved in. At 206 feet, the structure was the tallest and most modern in downstate Illinois. It has been referred to in print by such names as 'The Castle in the Cornfields' and 'Lighthouse of the Prairie.'" Note. We have included another view (aerial) of this Castle after it was finished (from Windish 1981, p. 68).

38. "The seal of the A.E. Staley Manufacturing Company is embossed in granite on the face of the company's Administration Building in Decatur."

39. "The lobby of the Administration Building is a favorite spot for visitors, many of whom are noticeably impressed by the architectural style of the building's interior. Founder Staley insisted that no expense be spared when he commissioned the building's construction." (Continued). Address: Decatur, Illinois.

333. Forrestal, Dan J. 1982. The kernel & the bean: The 75-year story of the Staley Company (Photo captions, continued). New York, NY: Simon and Schuster. xxv + 315 p. Illust. Index. 22 cm.

• ***Summary:*** (Continued): After page 166: 40. "Edwin K. Scheiter, H.P. Dunlap and A.E. Staley Jr., the first three men at the left, took a trip in a Ryan monoplane in 1928. The plane was similar to the one flown to Paris by Charles Lindbergh in 1927."

41. "When completed in 1927, Elevator C had a capacity of more than 5,000,000 bushels of grain."

42. "The founder sits at the winter home which he and his wife occupied in the thirties. The mansion was located alongside Biscayne Bay in Miami. The Decatur industrialist died there the day after Christmas in 1940."

43. "A.E. Staley; Sr., purchased 'the home of my dreams' on College Hill in Decatur for $16,500 in January, 1913. The structure is an original Frank Lloyd Wright design." No! According to an e-mail from Laura Jahr (12 May 2018), director of the Staley Museum in Decatur: "Regarding the home by Frank Lloyd Wright, that is a misconception that has spread through our community and was not well researched by the author of *The Kernel & the Bean.* The Staley home was built in 1883 by a man named William J. Quinlan. Staley purchased the home in 1913 from a family named Ennis. He had a Staley engineer make a rough draft design of the remodeling changes he wanted to carry out. The actual architects were an architectural firm out of Chicago: Childs & Smith. There is an interesting article in the *Decatur Herald or Review* from 1913 that discusses all the changes that Staley carried out on the home. I believe that the misconception regarding Frank Lloyd Wright's involvement stems from the fact that in that time period (1910-1913) 3 homes here in Decatur were being built under Wright's firm... although, Wright himself did not carry out all the work, rather his disciple, Marion Mahony, finished the jobs here. Staley did incorporate some 'Wrightesque' qualities to the home but they were not carried out by Wright himself.

44. "This is the former Emma Tressler of Bryan, Ohio. She became Mrs. A.E. Staley in 1898 [Dec. 14], and resided with her husband and children in Baltimore before moving to Decatur in 1912."

45. "A.E. Staley, Jr., took over management of the company following his father's death in 1940."

46. "A. Rollin Staley, the founder's younger son, joined

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the company in 1931. At the time of his death in 1968 he was a member of the Board of Directors."

47. Ione Staley was the eldest of the founder's five children, a family which included three girls and two boys.

48. Mary, the youngest of A.E. Staley, Sr.'s five children, spent much of her adult life in the Chicago area. She died in 1968 in Lake Forest, Illinois."

49. "Ruth Staley left Decatur at an early age, attended schools in the East and settled in Highland Park, Illinois. She lived there for many years before moving to Florida, where she died in 1970."

50. "The company expanded its manufacturing operations beyond Decatur for the first time in 1940 when it acquired this soybean processing plant in Painesville, Ohio. Located near Lake Erie and the St. Lawrence River, it was able to use a nearby harbor which was closer to Europe than some coastal ports."

51. "Herschel Morris, Staley's first starch sales superintendent, is shown in a photo circa 1923."

52. "David P. Langlois joined Staley in 1932 as a research chemist. Co-inventor of Sweetose corn syrup, Dr. Langlois was a successful research leader for the company until his retirement in 1966."

53. "Dr. Julian K. Dale, co-inventor of Sweetose, a proprietary sweetener, was an early member of the firm's research organization. The product was introduced in 1938."

54. "Sweetose corn syrup was sold in large quantities from 1938 on. The product was patented in 1939. It focused national attention on the Staley company's expertise in enzyme technology."

55. "Helen Harder, the first cashier, was the forerunner of many women who contributed to the Staley company's operations."

56. "Lucile May, the company's first nurse, was largely responsible for the construction of a first-aid hospital on the premises of the Decatur plant. A plaque in her memory hangs inside the hospital's main entrance."

57. "Doris Hill Murphy was secretary to E.K. Scheiter from 1923 until his retirement in 1966."

58. "Dr. R.E. Greenfield joined Staley in 1926 as an expert on the company's water supply needs. In later years he was placed in charge of a newly created research engineering division."

59. "Howard File spent most of his adult life heading Staley chemical laboratories and the company's research department. He joined Staley in 1912 when both he and the company were quite young. He retired in 1947 and died in 1951."

60. "During World War II, Staley employees participated in a payroll savings plan with allotments for War Savings Bonds averaging 10 percent of gross payroll. In this photo of ceremonies at the Decatur plant, the 10 percent Treasury Department flag is raised below the American flag."

61. "Clinton P. Anderson, right, Secretary of Agriculture in the Truman administration, was the guest speaker at an Illinois Chamber of Commerce dinner in Decatur in 1945. With him is A.E. Staley, Jr."

62. "Up-to-the-minute market information was kept posted on this 'big board' in the grain-buying department. Today's grain buyers utilize individual consoles located on their desks."

63. "Early research efforts were carried out in laboratories such as this one, forerunner of the company's multi-million-dollar research center."

64. "Otto D. Sutter was named manager of the New York office in 1937. He began his Staley career in 1922."

65. "Transportation of corn and soybeans overland, either by rail or truck, has changed over the years. This early worker in the plant prepares to manually switch rail cars from one track to another."

66. "Early methods of bottling corn syrup made it necessary for workers to 'cap' the bottles by hand."

67. "Staley has operated its own fire department at the Decatur plant for a number of years. Working in cooperation with Decatur's city fire department, Staley fire personnel have proved invaluable in a number of emergency situations."

68. "The introduction of 'packing lines' included machinery which filled bottles, capped them, and packed them into cartons for shipping."

69. "Horace J. Kapp was elected vice president of the company in 1942. He joined Staley in 1930."

70. "A bagging station in the Staley feed mixing plant of the 1940s could be used simultaneously on different feed formulas."

71. "H.C. Wilber, with supervision over Elevator C, was division superintendent of the company's terminal elevator division."

72. "John Shyer, the company's first 50-year veteran."

73. W.B. Bishop joined Staley in 1927 and had responsibility for the company's chemical engineering laboratory for many years before being made technical superintendent."

74. "In August, 1948, A. E. Staley, Jr., company president, left New York harbor on the Cunard liner Queen Elizabeth, bound for England en route to Norway. In the bon voyage party before the ship sailed were his mother, the founder's widow, Mrs. Emma Tressler Staley, and his wife, Mrs. Lenore Mueller Staley."

75. "A.E. Staley, Jr., addressed the Senate Foreign Affairs Committee in 1949 following a yearlong assignment as director of the Economic Cooperation Mission (Marshall Plan) in Norway."

76. "This medal is the 'Commander with Star of the Order of St. Olav,' presented to A.E. Staley, Jr., for his service to Norway."

77. "One of Staley's first chemists, Lowell Gill, joined the company in 1915 and stayed on to make contributions in

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major areas of R&D."

78. "Technical Director Dr. Thomas L. Gresham, with the company only a short time, conceived the present Staley Research Center."

79. "A.E. Staley, Jr., is shown with Edwin K. Scheiter. The former was the founder's older son, who joined the company at an early age and went on to become president and chairman. Scheiter started in 1918 and became the company's third president."

80. "A.E. Staley, Jr., cut the ceremonial birthday cake during festivities marking the 50th anniversary of the company in 1956. Looking on are, from left, Decatur Mayor Clarence Sablotny; Decatur Chamber of Commerce President E. Wayne Schroeder, and Frank M. Lindsay, owner and publisher of Lindsay-Schaub Newspapers, Inc."

81. "A.E. Staley, Jr., center, and his younger brother, Rollin, are shown with George Halas, owner of the Chicago Bears, at Wrigley Field in 1956, the company's 50th year. Halftime ceremonies were devoted to the Staley organization, which sponsored the Bears' predecessor team, the Decatur Staleys, starting in 1920."

82. "W.R. Boyer was elected director and treasurer of the company in 1955."

83. "A.E. "Gene" Staley III, son of Gus Staley and grandson and namesake of the founder, joined the company in 1952 and left several years later to go into business for himself in Chicago, where he now resides."

84. "Ruth Cade, for many years editor of *The Staley Journal*, used the in-house publication to inform employees and retirees of company goings-on. Established in 1917, *The Staley Journal* was one of the first magazines of its kind in the United States."

85. "Eva Coddington became Gus Staley's second wife in 1951. A native of Chicago, she was very active in Decatur civic affairs prior to her death in 1969."

86.

"Garry Moore, left, advertised 'Sta-Flo' starch on his morning network television show. With him are Denise Lor, a singer on the program, and Durward Kirby, the show's announcer.

87. "Radio and television personality 'Smiley' Burnette made personal appearances during the fifties to promote Staley consumer products. Also identifiable in the photo are, left, Joe Schultz, and right, Henry Volle, former Staley employees. Rol Staley is driving the automobile."

88. "Staley consumer brands included popular laundry and home care products.

89. "Mary Mathews (a pseudonym) was popular with homemakers of the period, giving advice on the use of Staley's various home care products. Mary Mathews' famous recipes featuring Staley products as ingredients were also popular items."

90. "Staley made several important acquisitions in the 1960s, including that of Wagner Products in 1968. Wagner, of Cicero, Illinois, was a producer of fruit-flavored beverages."

91. "Here is an array of Staley consumer products. The company disposed of most of its retail products line in 1981." (Continued). Address: Decatur, Illinois.

334. Forrestal, Dan J. 1982. The kernel & the bean: The 75-year story of the Staley Company (Photo captions, continued). New York, NY: Simon and Schuster. xxv + 315 p. Illust. Index. 22 cm.

• ***Summary:*** (Continued): After page 230: 92. "E.K. Scheiter, left, and A.E. Staley, Jr., right, with New York Stock Exchange president Keith Funston at the start of trading in Staley common stock on floor of the Exchange, May 29, 1963."

93. "The $4.2 million Research Center takes shape on the east end of the Staley property in Decatur. It was completed and dedicated in 1960."

94. "Robert M. Powers, at left, was important in the company's research efforts during the 1960s and early '70s. He would become Staley's president and chief operating officer in 1981. Nathan Kessler, at right, also spearheaded the company's technical efforts during this period."

95. "Roy I. Rollins, a company veteran, held a variety of management positions, including director of personnel, director of manufacturing, group vice president, and membership on the Board of Directors. Rollins retired in 1970."

96. "James W. Moore was actively involved in the company's commodity operations during much of his career. He was vice president, commodities, and later group vice president, AgriProducts, before retiring in 1974."

97. "From left, William Barnes III, Thomas W. Samuels, and E.K. Scheiter look on as A.E. Staley, Jr., announces plans for the construction of a Staley Pavilion at Decatur Memorial Hospital. Both the Staley Company and the Staley family have provided several million dollars to the hospital over the years."

98. "A.E. Staley, Jr., officiated at the dedication of the Staley Pavilion of Decatur Memorial Hospital in 1968. Also present, in front row from left, are Monsignor George Powell of St. Patrick Catholic Church; Ellis Arnold, Decatur's mayor; and Thomas Samuels, long-time community leader and Staley legal counsel."

99. "The Staley company entered a transitional period in 1965 when Donald E. Nordlund, left, was elected president. He assumed the duties of chief executive officer in 1973. At right is the chairman of the board, A.E. Staley, Jr."

100. "Customer demand for 55 percent high fructose corn syrup has increased because of approval by major soft drink companies, such as Coca-Cola, which use it in a variety of soft drinks."

101. "Lou G. Doxsie, a Staley vice president for many years, was instrumental in the company's early entry into

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high fructose corn syrup."

102. "The decade of the 1970s marked the Staley company's greatest period of growth. In 1972, Staley commenced commercial-scale production of high fructose corn syrup, en route to achieving world leadership in high fructose technology." One brand is IsoSweet.

103. "The Morrisville, Pennsylvania, plant, completed in 1972, became the company's first corn wet milling facility outside Decatur. Corn is shipped year-round from the Midwest by rail, as well as purchased from farmers in Pennsylvania and New Jersey."

104. "Automated processes and computer technology enhance productivity at the Morrisville plant, where high fructose corn syrups and dextrose are made."

105. "In addition to its use in domestic markets, soybean meal is transported from Staley facilities by rail, then barge, to New Orleans for export."

106. "A Staley affiliate processes soybeans at this plant in northern Spain."

107. "The company's initial entry into sunflower seed processing takes place at this plant near Velva, North Dakota."

108. "Recent expansions include the addition of this unit, to produce dextrose and 55 percent high fructose corn syrup, at Staley's Morrisville, Pennsylvania, corn refining facility."

109. "In 1978, a 100 million-pounds-per-year hydrogenated oil unit was added to the company's Decatur vegetable oil refinery."

110. "In 1976, Staley purchased four soybean mills from Swift & Company, including the one above, in Des Moines, Iowa, which was undergoing a plant expansion at the time. The mill began operations the following year."

111. "The Champaign, Illinois, plant has been modified to increase its role in soybean processing."

112. "The Frankfort, Indiana, plant produces soybean meal for the important Indiana and Ohio agricultural region as well as for the Southeastern poultry market."

113. "The Des Moines plant is one of the company's five soybean milling facilities."

113. "The Fostoria soybean plant, located in the northwest corner of Ohio, serves poultry and livestock markets in Canada and along the eastern seaboard."

114. "Ione Staley, eldest daughter of A.E. Staley, Sr., participated in dedication ceremonies at Millikin University for the Staley Library at the school. Behind her, at left, is company chairman Donald Nordlund."

115. "Henry Staley, the second of Gus Staley's four sons, is one of two Staleys currently employed by the company. Henry joined the firm in 1956 and currently is a vice president and a member of the board of directors."

116. "Robert Staley, youngest of Gus Staley's four sons, joined the company in 1977 as a management trainee. He currently is manager of legislative affairs in the firm's Government Relations organization."

117. "The Staley Library at Millikin University was dedicated in 1976."

118. "Ging, Inc., a Staley subsidiary, operates country elevators in Central Illinois."

119. "Staley Commodities International, Inc. is well known as a leading commodity futures trading firm. It is headquartered at the Chicago Board of Trade."

120. "This corn sweetener plant at Lafayette, Indiana, is a symbol of Staley's growth in high fructose corn syrup. It was the most highly computerized corn wet milling plant in the world when it started operations in 1977."

121. "Corn sweetener production at Staley's Lafayette plant is highly automated. The 'brain' of the Lafayette plant is this centrally located, computerized control room."

122. "The first non-Staley-family management team in the company's history includes Donald E. Nordlund, seated, chairman, and Robert M. Powers, president."

123. "The Loudon plant, under construction, became operational in 1982."

124. "The 1981 Staley Board of Directors: Donald E. Nordlund Chairman and President. Robert M. Powers President and Director. William Barnes III Director. Joseph B. Lanterman Director. Donald C. Miller Director. Gilbert L. Bieger Executive Vice President and Director. Henry M. Staley Vice President and Director. Boyd F. Schenk Director. Robert K. Schell Director. Thomas V. Fischer Executive Vice President and Director. Pierre Callebaut Director. John W. Joanis Director. Nathan Kessler Vice President and Director. Frank H. Wagner Vice President and Director." Address: Decatur, Illinois.

335. Gilmore, Richard. 1982. A poor harvest: The clash of policies and interests in the grain trade. New York, NY: Longman. xv + 303 p. Illust. 24 cm. [120* ref]
• ***Summary:*** The author notes on p. 147, "If there is one thing that is now clear about the soybean embargo of 1973, it is that it was enacted in response to a shortage that never existed. The rapid surge in spot soybean prices in early 1973 was the result of a rash of overselling by American grain giants to their overseas affiliates."

336. Soy Protein Council. 1982. Soy protein: Improving our food system. Washington, DC. 6 p. Bulletin 1/82/5000.
• ***Summary:*** An 1-page (front only) insert in this 1982 printing (5,000 more copies were printed in Jan. 1982) gives the name, address, contact information, and soy protein products made by each current manufacturer: ADM, Cargill, Central Soya Co., Grain processing Corp., Honeymead Products, Kraft, Inc., The Procter & Gamble Co., Ralston Purina Co., and A.E. Staley Manufacturing Co. Address: 1800 M Street, N.W., Washington, DC 20036. Phone: 202-467-6610.

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337. Szuhaj, B.F. 1983. Lecithin (Interview). Conducted by William Shurtleff of Soyfoods Center, March 25. 2 p. transcript. [1 ref]
• ***Summary:*** Lecithin that is not sold commercially is blended back into the soybean meal and used in livestock feeds. It is sort of a secret; the industry doesn't talk about it. This has been the practice since the 1930s. It is neither a plus nor a minus for the meal. Lecithin comprises about one half of one percent of the total soybean and 2% of the oil.

A phospholipid is a lipid containing phosphorus. Phosphatides are a subcategory of phospholipids. Chemical lecithin is a phospholipid. But it is better to use the term "phosphatides" when writing about lecithin.

The three largest manufacturers of commercial lecithin in the USA are Central Soya, followed by A.E. Staley, and ADM. Cargill, the largest crusher in the USA, makes a lot of lecithin but does not sell it commercially. Central Soya has been the largest for at least 10 years. ADM is now out of the Centrolex business; they stopped making granules in 1982.

The health food industry looks to lecithin suppliers / manufacturers (which comes down to Central Soya) to conduct research on the health benefits of lecithin. But Central Soya is not in a position to put up the money needed for such studies; it would cost too much and (if the studies showed clear benefits) there would not be much profit from the resulting sales of lecithin. So nothing is going to happen.

In 1976 H. Peeters edited a book titled *Phosphatidylcholine: Biochemical and Clinical Aspects of Essential Phospholipids.* Nattermann, a German seller of phospholipids (and a competitor of Central Soya), brought together many scientists to work on their product and then to write articles about that product. They held a symposium in Belgium and published the proceedings (in English) in the book edited by Peeters, noted above. It was a contrived thing. They coined a new term, Essential Phospholipids (EPL). They spent lots of time and money with various clinics in Europe. Some of the papers were well done, but scientists see it as "paid for" conclusions. That's why people are looking for negatives nowadays.

One of the best authentic articles was published in *Lancet* in 1977 (vol. 8028, p. 68-69). It indicates that lecithin improved memory / brain function.

How about lecithin and coronary heart disease? Lots of research has been done but none of it is conclusive. Moreover, lecithin is regarded as a natural foodstuff, so it is not as highly regarded by the medical profession as if it were a pure chemical substance. Since it is a complex mixture of phosphatides, it would not be wise to try to promote it as a drug. Trying to prove that a natural food is therapeutic would be as difficult as showing that vitamin C can be used to treat the common cold. Address: Central Soya Co., P.O. Box 1400, Fort Wayne, Indiana.

338. *Wall Street Journal.* 1983. Cargill to build $100 million corn wet-milling plant. June 17.
• ***Summary:*** Cargill said it will build the new plant in Eddyville, Iowa–60 miles southwest of Des Moines.

Construction will begin this summer and is expected to be completed in early 1985. The end products will be 600 million pounds of high-fructose corn syrup, more than 200 million pounds of other corn syrups, and 150 million pounds of industrial and food-grade starches.

339. *Soybean Digest.* 1983. ASA Expo: July 31 to August 3. July/Aug. p. 25.
• ***Summary:*** This expo will be held at the Opryland Hotel in Nashville, Tennessee. Trade show exhibitors include: Asgrow Seed Company, Cargill Investor Services, Ciba-Geigy Corp., Coker's Pedigreed Seed Co., Computerized Farm Info, Systems Inc., ContiCommodity Services Inc., DeKalb-Pfizer Genetics, DuPont, Elanco Products Co., Funk Seeds International, Monsanto Agri. Products Co., North American Plant Breeders, Northrup King Co., On-Farm Computing Inc., Pioneer Hi-Bred International Inc., Riceland Foods, Rohm and Haas Company, Sandoz, Inc., Soybean Research Foundation, Inc., Chicago Board of Trade, and many others.

Note: This is the earliest document seen (Dec. 2004) that mentions DeKalb-Pfizer Genetics.

340. *Herald and Review* (*Decatur, Illinois*). 1983. Inventor sees use for TVP. Oct. 7. p. 14.
• ***Summary:*** William T. Atkinson, the inventor of TVP, retired in 1976 as "senior research chemist for the Decatur-based Archer Daniels Midland Co. At age 72, he is a consultant to ADM. In 1970, he patented the TVP process... He later assigned the patent to ADM. Many companies, including A.E. Staley Mfg. Co., Cargill and Ralston-Purina, have purchased rights to use the process. The first products using the TVP process were sold in the early 1960s. They did not become common in grocery stores until the 1970s... Since about 1950, Atkinson had been researching ways to convert soybeans into food for human consumption...

"In 1935, the Detroit native went to work for Henry Ford. He and other researchers in Ford's Greenfield Village developed a soybean-based fiber which was used for such products as automobile upholstery, clothing and, during World War II, felt... The soybean operation, and Atkinson's services along with it, were sold in 1943 to The Drackett Co. and moved to that company's Cincinnati, Ohio, facility. Atkinson began working for ADM in 1957 when it purchased Drackett's agricultural division. He moved to Decatur in 1969. Drackett shifted its soybean research efforts to food applications in about 1950. This was because of the development of new synthetic fibers which were superior to soybean-based fiber in making clothing and other non-food products. As a result, Atkinson's research effort shifted." A photo shows Atkinson. Address: 852 Karen Dr., Decatur, Illinois 62526. Phone: 217-877-9048.

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341. *Feedstuffs.* 1983. Cargill to expand soy protein plant. 55(45):6. Oct. 31.
• ***Summary:*** Cargill plans to add 20,000 square feet to its textured soy protein processing plant in Cedar Rapids, Iowa. Operations for flavored soy protein products such as imitation bacon, cheese, and ham bits will be improved. Expected completion date is April 1984.

342. Leviton, Richard. 1983. Report of soyfoods research and speaking trip to Europe with American Soybean Assoc., Oct. 8–Nov. 15, 1983. Colrain, Massachusetts. 82 p. Unpublished typescript. 28 cm.
• ***Summary:*** Describes visits to or discusses: ASA Belgium (Dennis Blankenship, Rita Batens, Michael Martin), Parma, Euvepro Conference, Parmalat, Guy Coudert and Dr. Sabin president of ONIDOL, Anuga, Jonathan, Société Soy (Bernard Storup, Jean de Preneuf), Le Bol en Bois, Budapest (Hungary), Agrimpex (Hungary), Migros, Sojalade / Die Genossenschafts Tofurei (Verena Krieger), Galactina, Soyana (Walter Daenzer), Alpro (Belgium; Philip Vandemoortele and Christian Daems), Aarhus retail stores (Denmark), Witte Wonder, Manna, Cauldron Foods Ltd. (Phillip Marshall, Peter Fagan). Contains a directory of principal people contacted, listed by country. Those not mentioned above are: England: Wild Oats Wholefoods (Mike & Loes Abrahams), British Arkady Co. (Bill Pringle), Sunworld Inc. (David White), Health Foods Manufacturers' Association (Britain). Belgium: ASA, Le Paradoxe (Dota Figuera). China Trading, Ralston Purina (A.G. van der Horn), Premier Foods (Pauline Six Chan). Italy: Cargill SpA (Claudio Rocchietta), Parmalat SpA (Dr. Alberto Rota, Mr. Barilla), ASA (Sergio Monari). France: Robert Bonneterre, Aux Rayons Verts. Germany: European Federation of Health Products Manufacturers (Wolfgang Reinsch, Bad Homburg). Hungary: Central Food Research Inst. (Balint Czukor), Agrimpex (Potori Karoly). Denmark: Danish Turnkey Dairies, Det Gronne Kokken. Netherlands: Witte Wonder Products (Niko van Hagen), Manna (Hans den Hoed), Albert Heijn Supermarkets, Dutch Seed Crushers & Oil Processors Assoc. (Dr. C.J.M. Meershoek). Switzerland: Sojalade (Verena Krieger), Soyana (Walter Daenzer). Austria: Tom Brennan.

Bound in the back of the report are photocopies of labels and promotional materials (graphics) from the following companies: Witte Wonder, Société Soy (Cerny), Cauldron Foods, Manna, Dansk Tofu (Sdr. Vinge Gl. Mejeri, 8860 Ulstrup), Sojalade, Bonneterre, Mutter Erde, Genossenschaftstofurei Engel (Dorfplatz, Ottenbach).

Note: This is the earliest document seen (May 2005) that mentions Parmalat in connection with soy.

Migros (p. 18-19) is Switzerland's biggest supermarket / department store; it sells some whole wheat products. Consumers oppose them for their size, but they attract foreign customers. Natural foods people are very political; they are opposed to Third World imports. Migros is expected to start selling tofu soon. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

343. Fundacao Cargill. 1983. Soja [Soybeans. 2 vols.]. Campinas, Sao Paulo, Brazil: Fundacao Cargill. [Por]*
• ***Summary:*** Vol. 1. Planting, the climate, plant protection. Vol. 2. Genetics, improving production. Address: Campinas, Sao Paulo, Brazil.

344. Wessel, James; Hantman, Mort. 1983. Trading the future: Farm exports and the concentration of economic power in our food system. San Francisco, California: Institute for Food and Development Policy. xiii + 250 p. Index. 22 cm. [431* ref]
• ***Summary:*** Contents: Acknowledgments. 1. A time of crisis. 2. The ABCs of the food economy. 3. Export boom and bust: How the 'Stompers' win. 4. Wheat for oil: Is it really a bargain? 5. The free market in grain and other myths [Cargill]. 6. The food dollar and the export boom: Who gains and who loses? 7. Soil for oil: The invisible threat to our food security. 8. The export boom and vanishing water resources. 9. The global economic crisis and rising agricultural exports. 10. The export boom and its impact abroad. 11. Lessons of the export decade. Notes. Bibliography. List of farm organizations.

345. Lockmiller, N.R. "Dick." 1984. Update on work with soybean crushing (Interview). *SoyaScan Notes.* Jan. 9. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Staley does not plan to sell their Decatur soybean processing plant. They plan to use it to make soybean flakes to process into flour, from which they will make textured soy flour, soy protein concentrates and isolates. Staley now buys its flakes from other companies.

Dick understands that five other Staley plants have been sold. The buyers could be ADM, Central Soya, or ConAgra. But not Cargill; the Federal Trade Commission (FTC) would not allow that.

Staley plans to continue making their specialty soy protein products–textured soy flour, soy protein concentrates, textured concentrates, isolates, and HVPs (hydrolyzed vegetable proteins). These products are doing fairly well. They no longer make soy flour.

Dick has now been manager of government relations at Staley for 3 years. Address: Manager, Government Relations, A.E. Staley Mfg. Co., Decatur, Illinois.

346. *Food Processing* (*Chicago*). 1984. Cargill to expand textured soy protein plant. Feb. p. 18.
• ***Summary:*** Cargill is expanding their textured soy flour plant in Cedar Rapids, Iowa, by 20,000 square feet. The expanded plant is expected to start operating in April 1984.

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347. Ralston Purina Company. 1984. First quarter report to shareholders. Annual meeting highlights. Checkerboard Square, St. Louis, MO 63164. 12 p. 22 cm.
• ***Summary:*** For the three months ended Dec. 31, 1984. Six of the company's soybean crushing plants were sold to Cargill, Inc. The seventh, at Memphis, Tennessee, was closed. "This action removes the company from a commodity business and frees up cash for other investment" (p. 7). Address: St. Louis, Missouri.

348. Wolf, Walter J. 1984. The main uses for the various modern soy protein products in America (Interview). *SoyaScan Notes.* March 2. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The following, listed within each category in approximate order of importance, are the main uses of modern soy protein products in the USA:

Soy protein concentrates: Processed meat products, including sausages, meat loaves, turkey loaves, salisbury steak in TV dinners (ground beef vs. sausages). Works as a binder and extender.

2. Isolates. Infant formulas (he does not know if pumping hams {by injecting an isolate solution} is yet legal in the USA; ask Ralston Purina). Is it legal in Europe? Coffee whiteners and other dairy analogs (including infant formulas), for example blend with cheese whey to replace nonfat dry milk (NFDM; most may be soy flour). Meat is a fairly big use.

3. Textured soy flour. Ground beef extender or atop pizza as a ground beef substitute or extender. Imitation bacon bits used in salad bars. All bacon bits are now made from textured soy flour, not spun isolates. Cargill is a big maker of imitation bacon bits. He thinks they supply General Mills who sells them as Bac*O's. He does not know who makes them for McCormick. So there are two sellers.

4. Textured concentrates are used mainly in higher quality meat products. Lots used by the military in extended beef. (Does military now also use textured soy flour?).

5. Jet Cooked Textured Isolates. Meat extender or replacer? They are chewy. More expensive foods. Jet cooked isolates are typically sold frozen; check. Not the typical thermoplastic extrusion. He is not sure if Worthington or anyone else makes textured isolates in the form of spun protein fibers.

6. Modified isolates are extensively hydrolyzed with pepsin (they are almost hydrolysates) and used in candies? He thinks the isolates used in whipped toppings are not hydrolyzed. Check. Whipped cream replacers are NOT hydrolyzed. He is not positive. Ask Gunther. A lot of them replace sodium caseinate with soy isolates to reduce sodium.

Question: Which of these products is most widely used in sausages? Concentrates and soy flour, he thinks.

One good but expensive source of information about industry and market statistics is Frost & Sullivan Reports: F&S Inc. 106 Fulton St. New York, NY 10038. Winter of 1982 titled "Protein Ingredients Market in the U.S." ($1100). Another is "New Food Ingredients in Europe" (Sept. 1981; $1250). He'll send me copy of flyer. In the contents are the estimated market shares of soy protein ingredient producers. They also did one ten years ago. The probably get their information from retired people in the industry. Address: Northern Regional Research Center, Peoria, Illinois.

349. Hawkins, Kerry L. 1984. World oilseed outlook and implications for the Canadian market. In: Ontario Soya-Bean Growers' Marketing Board. ed. 1984. Ontario Soybean Symposium. Chatham, Ontario, Canada: OSGMB. 319 p. See p. 205-223.
• ***Summary:*** The world grain trade grew rapidly in the 1970's. The decade was a seller's market for grain exporters. Between 1972 and 1980 total world trade in wheat, coarse grains, and oilseeds increased roughly 65%, and oilseeds and their related products more than doubled. 80% of the increase in imports in the 1970's went to non-traditional markets, especially centrally-planned economies and newly-industrialized countries. At the beginning of the 1970's the centrally-planned economies [e.g. USSR] embarked on an ambitious program to improve diets [i.e. increase consumption of animal products]. But they tried to do too much too fast, and the food subsidies proved too costly to continue. Since 1980, only soybean exports have continued to grow.

The main oilseeds produced worldwide are soybeans, cotton seed, ground nuts / peanuts, sunflower seed, rapeseed, sesame seed, copra, palm kernels, linseed / flax, and castor seed.

Soybeans have the lowest percentage oil content of all oilseeds; copra and palm kernels have the highest. Canola contains 40% oil vs. 20% for soybeans. Palm oil has become the low-cost oil and increased its share in price-sensitive markets. Brazil has passed the USA as the leading exporter of soybean oil. Population growth rate is decreasing, and should be 1.75% by the end of the 1980's. Address: President, Cargill Ltd., Winnipeg, Canada.

350. *Oil Mill Gazetteer.* 1984. Cargill will build $15 million refinery for soybean oil in Sioux City. 88(11):36. May.
• ***Summary:*** "Cargill has announced plans to spend approximately $15,000,000 to construct a soybean oil refinery adjacent to its soybean crushing facility in Sioux City, Iowa.

"Donald H. Leavenworth, group vice president for oilseed processing, said the refinery, which is expected to employ about 25 persons, will produce hydrogenated–hardened–edible oil. The oil will be marketed to Midwest and west coast food processors for use in margarine, bakery products, shortening and snack foods.

'Population growth and increased per capita

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consumption in these two regions have substantially increased the demand for edible vegetable oils,' Mr. Leavenworth said. 'The Sioux City refinery will help meet those growing needs.'

"Completion is expected in the summer of 1985.

"The vegetable oil refinery will utilize the crude soybean oil produced by Cargill's Sioux City soybean crushing plant, he said. The plant annually processes approximately 16,000,000 bushels of soybeans produced by area farmers."

351. *Grain & Feed Journals* (*Chicago*). 1984. Expand textured protein plant. July.
• ***Summary:*** "Cargill is adding 20,000 sq. ft. of additional space for its textured soy protein plant in Cedar Rapids, Iowa. The plant is designed to improve its manufacturing operations for flavor-textured soy protein products, such as imitation bacon, cheese and ham bits, etc., which are marketed by private label manufacturers for sale to consumers–primarily to institutional markets as ingredients and condiments. Operations should begin in mid-1984."

352. Cargill. 1984. How Cargill built a foreign market for U.S. soybeans by starting a chicken business from scratch (Ad). *Soybean Digest.* July/Aug.
• ***Summary:*** See next page. A full-page color ad. The top two-thirds contains a photo of a man holding one cute yellow baby chick. In front of him is a box of baby chicks. The text reads:

"Several years ago, Cargill saw a way to create a new market for soybean meal in Indonesia. Cargill sent one of its managers, Parky Parkinson, there to build a facility for raising chickens. It started out small, but today Cargill raises 4 million chickens a year in Indonesia. And they eat a lot of soybean meal. Where's Parky now? He's gone to Thailand to open up another market for U.S. soybeans by starting another chicken business... from scratch."

At the lower right is the round green and white Cargill logo.

353. *Food Engineering.* 1984. Vegetable proteins: Topics from nutrition to cancer prevention to dietary fiber were presented by soy protein suppliers at the IFT [Institute of Food Technologists] show. 56(8):116, 119. Aug.
• ***Summary:*** A.E. Staley makes Textured Procon, textured soy protein concentrates. Central Soya makes Response, structured soy concentrate. Cargill makes Textratein, textured soy flours in 3 particle sizes used as partial ground meat replacers. "Among the ingredients from Kikkoman International were dehydrated miso and dehydrated tofu from soy, and dehydrated HVP (hydrolyzed vegetable protein) from soybean meal and corn gluten." Hercules highlighted its standard and Luxor lines of HVPs for mild and beef-like flavors, and its capacity to customize HVPs to customer need. A brief summary is given of research indicating that miso may prevent cancer.

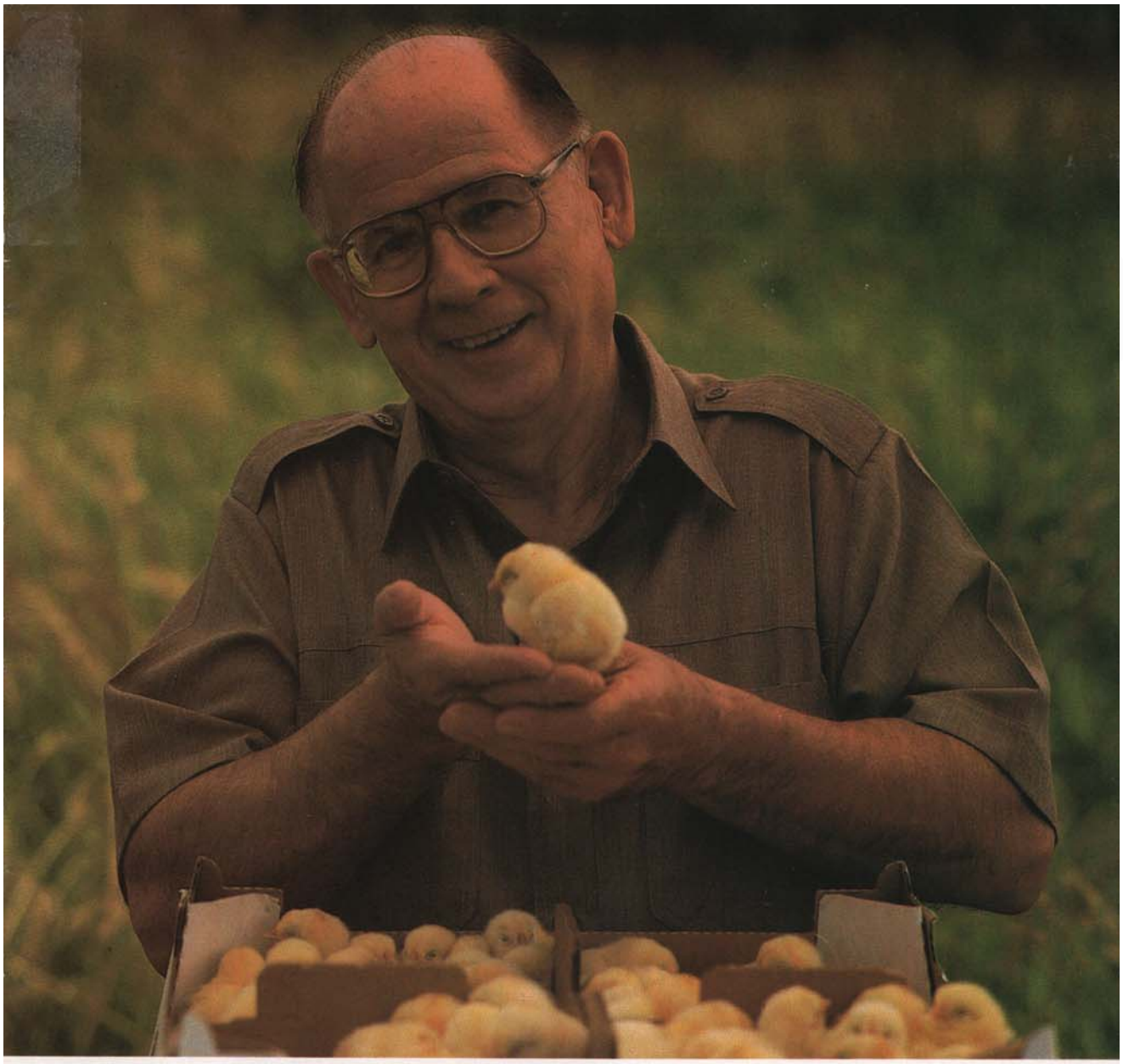
354. *Soya Bluebook.* 1984. Industrial product manufacturers, and non-food uses of soy oil in the USA. p. 80-95, 205. Aug.
• ***Summary:*** Product categories are: Adhesives/coatings (7 U.S. companies / 6 foreign companies), industrial lecithin (8/43), industrial soy flour (4/25), industrial soy oil (10/47), paints & varnishes (5/3), resins (5/3), soaps (0/30), soy sterols & tocopherols (3/11), soybean fatty acids (6/36).

In 1982, nonfood utilization of soy oil totalled 205 million lb., or 2.1% of total U.S. soy oil usage (97.9% was for foods). Of this, 96 million lb was used for resins and plastics, 38 millions lb for paint and varnish, 16 million lb for fatty acids, and 55 million lb for other nonfood uses.

Manufacturers of soy sterols and tocopherols include– In the USA: Distillation Products Industries, Kingsport, Tennessee 37662; Durkee Foods Div. of SCM Corporation, Cleveland, Ohio 44115 [Formerly The Glidden Co.]; Henkel Corporation, Minneapolis, Minnesota 55435. In Japan: Ajinomoto Company Inc., Chuo-ku, Tokyo; The Nisshin Oil Mills Ltd., Chuo-ku, Tokyo. In Europe: Cargill B.V., Amsterdam, Netherlands; Industrie Chimiche Italia Centrale S.p.A. (ICC), Ancona, Italy; Italiana Olii e Risi S.p.A., Ravenna, Italy; S.I.O. S.p.A. (SIO), Modena, Italy. There are also 3 manufacturers in Brazil and one in India.

355. American Soybean Assoc. ed. 1984. First European Soyfoods Workshop, Proceedings. Brussels, Belgium: ASA. 129 p. Held Sept. 27-28 at Amsterdam, Netherlands (Krasnapolski Hotel). No index. 30 cm. [38 ref]
• ***Summary:*** See next page. Contains 9 papers, mainly on soyfoods in Europe. A directory includes company name, person's name, and address for the conference's 105 participants. Organizations represented include Caderas de Kerleau, Aarhus Oliefabrik (Aarhus C, Denmark), Aixagri, Alfa-Laval, Alfa-Laval Food (John Wilson), Alpro N.V. (Ph. Vandemoortele, Ch. Daems), Alpura Koreco Ltd., Aros Sojaprodukter (Ted Nordquist), BRT, Cargill (R. Sevink, Amsterdam, Netherlands), Cauldron Foods Ltd. (Mr. Marshall, Mr. Fagan), Centraalbureau Voor Schimmelstruct, Centro Studi Proteini Vegetali, CETIOM ONIDOL (Emmanuel Prudom, Toulouse, France), Chemex, Comite Eetbaar Plantaardig Eiwit (Hague, Netherlands), Consumers' Association, Condimenta, Cooperative Occitane, Danish Turnkey Dairies Ltd., Delisana Natuurvoeding, Deutsche Gesellschaft für Ernaehrung [2 different addresses], DE-VAU-GE Gesundkostwerk (Dr. W. Lubosch), Dragon & Phoenix Ltd. (Donald Lysen), E & R Chemicals, Edelsoja GmbH (K.O. Tielker), E.M. Chajuss Ltd. [Daniel Chajuss], Fa L.L. Frank (Missendorp de Bie), Fed. Nat. Syndicats De Dietetique, F.I.M. Houterman, Food Industries, Food Manufacture, F.M. Lin, Galactina Ltd. (P. Speck), Gebruder Bauermeister, Gemint, Giulini Chemie, Goorden Import Cy, Henselwerk GmbH (Rolf Berger), Heuschen (Mr. Heuschen,

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How Cargill built a foreign market for U.S. soybeans by starting a chicken business from scratch.

Several years ago, Cargill saw a way to create a new market for soybean meal in Indonesia. Cargill sent one of its managers, Parky Parkinson, there to build a facility for raising chickens. It started out small, but today Cargill raises 4 million chickens a year in Indonesia. And they eat a lot of soybean meal. Where's Parky now? He's gone to Thailand to open up another market for U.S. soybeans by starting another chicken business...from scratch.

CARGILL

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AMERICAN SOYBEAN ASSOCIATION

FIRST EUROPEAN SOYFOODS WORKSHOP

SEPTEMBER 27-28, 1984

KRASNAPOLSKI HOTEL

AMSTERDAM



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Deurne, Netherlands), Itona Products Ltd. (Mr. and Mrs. Hampson), Ivel, Keuringsdienst Voor Waren, Libelle, Lucas Meyer (Axel Schulte), Masterfoods, Melkunie Holland, Niticel B.V., ONIDOL (Guy Coudert), Paksoy TIC, Paul's Tofu (Paul Jones), PFW Nederland BV, Plumrose FDD, Premier Foods, Purina Protein Europe (A.G. van der Horn & Willy Naesens, Zaventem, Belgium), Royal Neth. Dairy Federation, Ruitenberg N.V., Sanico N.V., S.G.A. Flavours, SIO [Societe Industrielle des Oléagineux, Marie Gérard, Nanterre, France], Sopad Nestlé (Mr. Rolland, France), Sojadoc (A. Lacombe, P. Roger, Mr. Henras & Mr. Attié; St. Paul, 81140 Penne du Tarn, France), Sojaquelle (Wolfgang Furth-Kuby), Solnuts B.V. (J. Liebregts), Soy (De Preneuf, Cerny, France), Staley Intern[ational], Stern Chemie (Volkmar Wyviol, Hamburg), UNCAA, Union Deutsche Lebensmittelwerke [Hamburg], Univ. of Strathclyde [Glasgow, Scotland], Vamo Mills (B. Cleenewerck, Ghent, Belgium), Verstegen Specerijen, V.D.SP.V.B.A., Wenger International (I. Ben Gera, Antwerp, Belgium).

Registered on Sept. 27. Naarden Intl., Protevit, Wessanen, Mr. Karas & Mr. Drosihn [Soyastern–From Germany, not Turkey].

A note in the Nov. 1984 issue of *Soya Foods* (ASA, Europe) (p. 2) stated that the workshop was attended by 105 people from 14 countries, and was considered to have been very successful.

Note 1. This is the earliest published document seen (May 2015) concerning Sojadoc of France.

Note 2. E.M. Chajuss is the name of Daniel Chajuss' father. He and his son founded Hayes Ashdod Ltd. "E.M. Chajuss Ltd." is a limited or incorporated company that was jointly owned by Daniel and his father. Daniel Chajuss attended this Soyfoods Workshop as a "delegate" of E.M. Chajuss Ltd. company.

Note 3. This is the earliest document seen (March 2020) that mentions Wessanen of the Netherlands. Address: Brussels, Belgium.

356. Cargill. 1984. How Cargill works around the world, around the clock, to find more markets for America's grain (Ad). *Soybean Digest.* Sept.
• ***Summary:*** See next page. A full-page color ad. The top two-thirds contains a photo of a man holding a phone talking to an attractive young lady in front of a row of computer screens with many clocks on the back wall. The text reads:

"When a Midwestern farmer gets up at dawn, it's already noon in Geneva, where Cargill grain traders have been looking for buyers for his crops. And when he calls it a day, it's tomorrow in Bangkok, and Cargill grain traders are already on the job. Getting more American grain into world markets is important to you. So we work at it around the world, around the clock."

At the lower right is the round green and white Cargill logo.

357. *Wall Street Journal.* 1984. Ralston signs to sell 6 soybean facilities to Minnesota firm. Oct. 19. p. 49, col. 1.
• ***Summary:*** The plants were sold to Cargill. The move is part of Ralston Purina's attempt to move away from commodity based businesses to higher-margin consumer goods. The seventh mill, in Memphis, Tennessee, is reported to be permanently closed.

We are not told where the plants were located except that they are in the Midwest and Southeast.

The soybean industry has been unprofitable for the past three years as a result of lagging export demand and excess capacity.

Cargill, a closely held firm "which doesn't have to report earnings on a quarterly basis to shareholders, is in a better position to withstand several more years of slack profit in the cyclical commodity business, an executive from a competing company said.

"Cargill said the industry will probably suffer from excess capacity for several more years. 'We believe in the long-term potential of soybean processing.' a Cargill spokesman said."

358. Cahalan, Steve. 1984. Staley created market. *Herald & Review* (*Central Illinois*). Nov. 14. p. A3.
• ***Summary:*** "In large part, Decatur owes its title of 'Soybean Capital of the World' to Augustus E. Staley Sr., founder of A.E. Staley Mfg. Co. which in turn founded the U.S. soybean processing industry in the early 1920s.

"The title was promoted by the late Henry H. Bolz, longtime general manager of the Association of Commerce. He said the title was justified because Staley almost single-handedly encouraged farmers to grow soybeans and provided the first and most dependable market.

"Staley was born in 1867 on a farm near Julian, North Carolina, and at age 17 became a traveling salesman of such products as starch, baking powder and flavoring extracts.

"After 15 years as a traveling salesman, he started his own starch business in Baltimore. He purchased the former Wellington Starch Co. plant in Decatur in 1909 and moved to the city.

"The company survived tough times after World War I and gradually expanded.

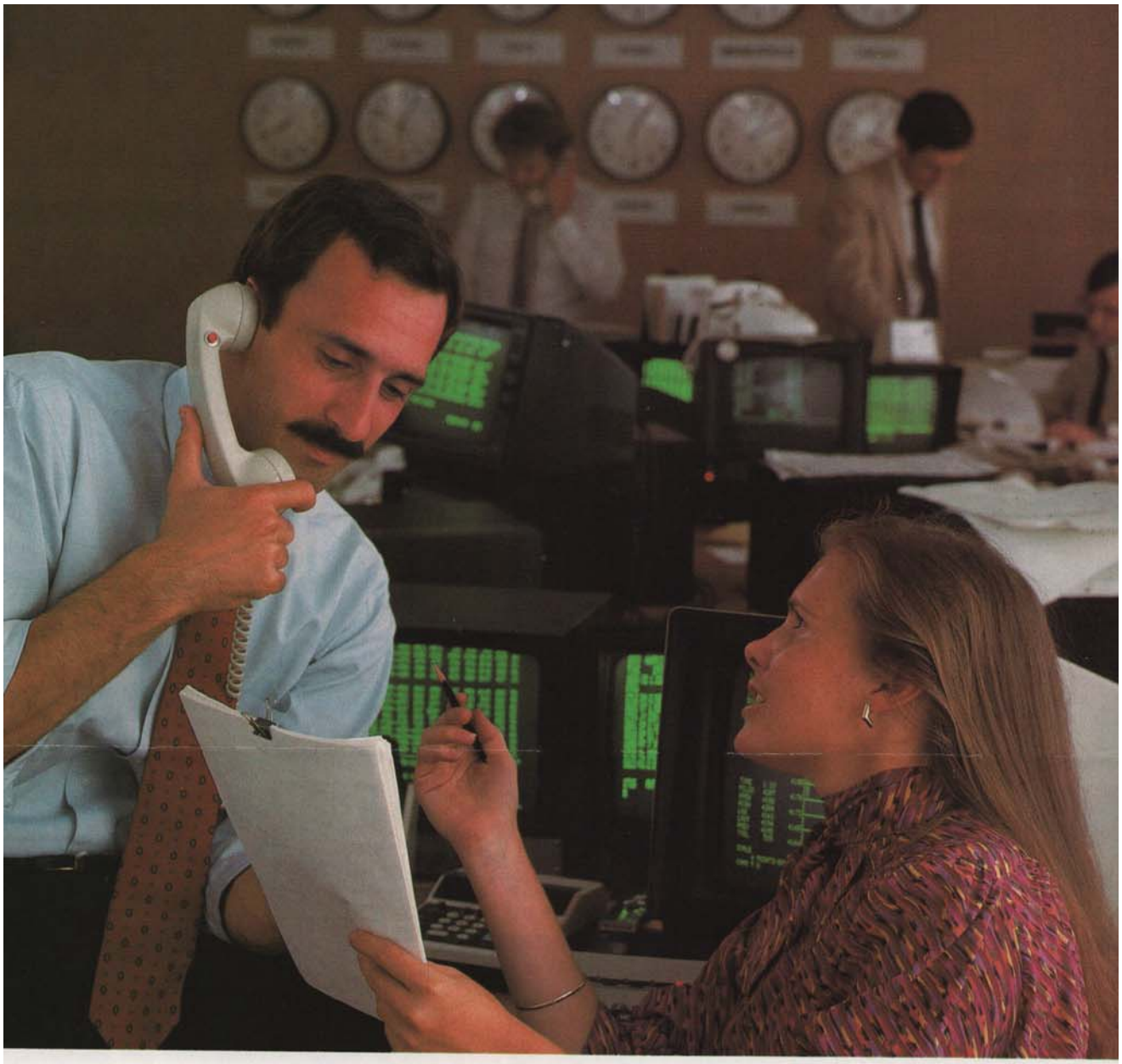
"Staley opened his first soybean processing plant in 1922 in Decatur, after urging farmers to grow soybeans.

"He put together a traveling promotional and educational 'Soil and Soybean Special' train which traveled through Central Illinois in 1927.

"The special train of six cars and an engine had exhibits about soybean planting, cultivation, processing and uses; motion picture theaters, and a lecture car.

"The U.S. Department of Agriculture, University of Illinois College of Agriculture and Southern Illinois State Normal University at Carbondale helped put the exhibits

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How Cargill works around the world, around the clock, to find more markets for America's grain.

When a Midwestern farmer gets up at dawn, it's already noon in Geneva, where Cargill grain traders have been looking for buyers for his crops. And when he calls it a day, it's tomorrow in Bangkok, and Cargill grain traders are already on the job. Getting more American grain into world markets is important to you. So we work at it around the world, around the clock.

CARGILL

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together.

"In the 1930s, Staley envisioned using refined soy bean oil in foodstuffs instead of just using the crude oil as a substitute oil in paints and soaps. He also convinced feed formulators to use the protein-rich meal in their feed mixes.

"Asked in the late 1930s what his hobby was, he answered, 'Soybeans, I guess. They're my baby.'

"He first became interested in soybeans as a boy, after his father had been given some soybeans by a missionary who had returned from China. The city's major processors and the production from the surrounding area led to the grain trade pricing soybeans and bean products 'F.O.B.' Decatur. That designation provided the official stamp of approval to Decatur's "soybean capital" claim.

"Decatur now has just two soybean processors, down from five in 1953.

"They are Staley and Archer Daniels Midland Co., the world's largest until Cargill Inc. recently purchased the soybean facilities of Ralston Purina."

A portrait photo shows Mr. A.E. Staley. Address: Herald & Review Farm / Business Writer.

359. Ingram, Ron. 1984. Analysts: Staley to drop soybeans. *Herald & Review* (*Central Illinois*). Nov. 14. p. A3.
• ***Summary:*** "A.E. Staley Mfg. Co.'s review of its soybean operations is seen by market analysts as another move by the Decatur firm away from total dependence on agribusiness for its profits.

"'They're throwing in the towel. They've given up hope of the soybean business coming back to an adequate return on investment,' said David Goldman, a vice president with E.F. Hutton & Co. Inc., New York.

"'Long term, maybe this (soybean crushing) doesn't fit any longer' in Staley's plans, said Craig Carver, a vice president with A.G. Edwards & Sons Inc., St. Louis.

"If Staley should sell its soybean operations, both analysts agreed it would be a positive move for the company.

"'The soybean crushing business in good times tends to be quite volatile, and we haven't had many good times in the last few years, Carver said. 'Staley has gotten the reputation for running that business pretty conservatively and that eliminates a lot of profit opportunities. You have to manage the business aggressively to take advantage of swings in the markets.'

"Goldman said it appears Staley sees there has been a fundamental change in the soybean processing business which has permanently reduced the profit potential for soybeans.

'If you'll pardon the pun, all of their soybean earnings didn't amount to a hill of beans anyway,' he said. 'It's been a drag on earnings. It's been a drag on return.

"Goldman said Staley should be able to 'get some cash for it, even if they have to write off something' to do so.

"Referring to Staley's recent merger agreement with CFS Continental Inc., nationally the No. 2 food service industry supplier, Goldman said the acquisition will help Staley restructure into high-growth and high-return areas. `When it's all over they will be less of an agricultural company than they were.'

"Carver said last week's announcement by Pepsico and Coca Cola to use 100 percent high-fructose corn sweetener–a major Staley product–in their colas may have helped Staley toward a decision to review its soybean operations.

"Fructose will make the whole corn milling industry some good margins as a result of the major bottlers' decisions, Carver said. Carver said there are some potential buyers for Staley's soybean operations, among them Central Soya of Fort Wayne, Indiana; Conagra Inc. of Omaha, Nebraska, or Continental Grain Co. of New York.

"He also suggested Decatur-based Archer Daniels Midland Co. could buy part of Staley's milling capacity, but could not acquire it all without getting in trouble with the U.S. Justice Department over antitrust violations.

"Goldman said ADM is 'up to something sneaky.' He said between June 30 and Sept. 30 ADM's cash position increased to $1 billion from $300 million, strongly implying the company is preparing to make a major acquisition.

"'I wonder if they may have known something about Staley,' Goldman said.

"Richard E. Burket, ADM vice president and assistant to the chairman, declined Tuesday to comment on Staley's announcement that it is reviewing soybean operations.

"Burket acknowledged ADM was aware of the action and added, 'At this time we don't know what we might be able to do.'

"ADM is the second-largest U.S. soybean processor. It held the No, 1 ranking until recently when Cargill Inc. of Minneapolis, Minnesota, acquired the mills owned by Ralston Purina Co. of St. Louis [Missouri]. The acquisition pushed Cargill into the top spot among U.S. soybean processors." Address: Herald & Review Farm / Business Writer.

360. Ralston Purina Company. 1984. Annual report to shareholders 1984. St. Louis, Missouri. 40 p. 28 cm.
• ***Summary:*** In the financial section, under "Raw materials" we read (p. 17): "The Company has entered [in Oct. 1984] into a preliminary agreement with Cargill, Inc. to sell six of the Company's seven soybean plants. On completion of the sale, the Company will purchase all of its soybean meal requirements for animal and poultry and poultry feeds, pet foods, and soy protein products from outside soybean processors. This should not materially affect the cost of soybean meal to the Company." Address: St. Louis, Missouri.

361. Associated Press (AP). 1984. Farmers upset at proposed soybean facility sale. *Morning Herald* (*Durham, North*

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Carolina). Nov. 20.
• ***Summary:*** North Carolina farmers say they are afraid that the proposed sale of a Ralston Purina Co. soybean crushing plant in Raleigh to Cargill might give Cargill a near monopoly on the state's soybean market.

Ralston Purina wants to sell soybean crushing plants in six states to Minnesota-based Cargill, which may be the world's largest agribusiness company. Address: Herald staff writer.

362. *SoyaScan Notes.* 1984. Chronology of soybeans, soyfoods and natural foods in the United States 1984 (Continued–Part II) (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Continued: July 26. At the NNFA (National Nutritional Foods Association) show in Atlanta, Georgia, Great Eastern Sun rolls out Ah Soy, its new line of soymilk imported from Saniku Foods in Japan, in vanilla, chocolate, and plain flavors, in foil retort pouches. After the show, the Soyfoods Association board meets. Steve Snyder replaces Michael Austin as director of SAA. The next day, SAA directors Snyder, Burke, and Barat travel to St. Louis, Missouri, to meet with the staff of the American Soybean Association to discuss possible areas of mutual interest. ASA appears friendly and open minded, and offers to discuss specific future joint projects. A potential line of communication is opened.

July 30. *People* magazine (circulation 2.8 million) article on Tofutti titled (ineptly) "A Happy Zealot Turns Curd (Yuck!) into a Creamy Treat."

July. "The Soyfoods Industry: Growing Like a Beanstalk" by B. Bialick published in *Whole Life Times.*

Aug. 9. The last issue of Soyfoods magazine (No. 10) arrives, with its first color photo on the cover. 7,000 copies printed at a cost of $11,200. Doug Fiske of Encinitas, Calif., a professional editor and publisher, did a fine job. Magazine's focus has been changed from production to marketing of soyfoods.

Aug. 12-17. World Soybean Research Conference III held at Iowa State University. Heavy emphasis on soybean production and agronomy; relatively little new material on soyfoods. Soyfoods movement is not represented.

Aug. 20. Ralston Purina introduces Checkerboard Farms TenderLean, America's first branded ground beef product consisting of 75% ground lean beef and 25% textured soy protein isolate. Some meat journals are harshly critical and many meat departments refuse to carry it. Ralston withdraws the product.

Aug. 24. Westbrae Natural launches WestSoy Natural, a plain soymilk similar to Ah Soy but lower in price and made with organic ingredients. Imported in a foil pouch from Saniku Foods in Japan, it is the company's first soymilk.

Aug. 31. San-J International Inc. announces that it will construct a soy sauce plant (44,000 square foot, $5 million) in Virginia on a 27-acre site just north of Colonial Heights.

Sept. Chico-San, Inc. introduces unpasteurized miso in a revolutionary "Pressure Release Package," a plastic bag with a one-way valve that allows the escape of the carbon dioxide produced naturally during fermentation.

Sept. 9-14. Gloria Vanderbilt announces that she, in conjunction with Dolly Madison and Frusen Gladje, will launch a tofu ice cream.

Sept. 27-28. First European Soyfoods Workshop held in Amsterdam, The Netherlands, at the Grand Hotel Krasnapolski, organized by the American Soybean Association's Belgium office. ASA reports attendance as 105 people from 14 countries, but participants report a maximum of 50 participants. Talks on tofu, soymilk, tempeh, distribution, and microbiological standards, all later published in the Proceedings. There is a large Expo with soymilk equipment from Alfa-Laval and Soya Technology Systems prominently featured. A very successful event, and another ASA first!

Oct. *The Tofu Gourmet* by Linda Barber and Junko Lampert published by Kodansha in Menlo Park, CA. 129 p. Many color photos.

Oct. 15. "Here Tofutti, There Tofutti," a full-page, very positive article with 2 color photos published in *Newsweek* magazine (circulation 3 million).

Oct. 23. The joint managing directors of the International Food Information Service, owners of Food Science and Technology Abstracts (FSTA, the world's largest, oldest, and most widely used food-related computerized database) visit William Shurtleff at The Soyfoods Center to discuss putting the 6,500 bibliographic records in The Soyfoods Center Library into FSTA, thus making this information available worldwide. Both parties are very interested in the project but technical problems remain to be solved.

Oct. Westbrae Natural Foods launches Malted's, billed as "thick and rich non-dairy soy delights." Marketed like a milkshake and imported from Japan in a foil pouch, they come in three flavors: vanilla, carob, and cocoa-mint.

Oct. Three member team from Plenty Canada spends one month in Sri Lanka, funded by the Canadian International Development Agency, studying the country's soyfoods program. They learn, teach, and introduce tofu ice cream.

Nov. 13. A.E. Staley Manufacturing Company, America's oldest existing soybean crusher, announces that its soybean crushing operations are for sale.

Nov. 20. Tofu Time's first Tofutti Shop opens in uptown Manhattan, New York. A fast-food retail outlet with a slick, red-and-white plastic, almost gaudy, decor.

Nov. 16. Chico-San Inc. is purchased by H.J. Heinz Co., largely for its rice cake business.

Nov. 21. After years of searching, William Shurtleff, with help from Nancy Florida in Java, discovers an 1815

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reference to tempeh in the *Serat Centini*, from the Court in Solo, Java. This pushes the earliest reference to tempeh back 60 years and has it originating in Indonesian rather than in Dutch culture.

Nov. 30. America's first Tofu Standards are issued by the Soyfoods Association's Tofu Standards Committee, in part to help stem the rising tide of products bearing the name "tofu" that contain little or no tofu.

Nov. Galactina, a Swiss manufacturer of soymilks since 1969 (they make Vita Drink / Enteroform, a soymilk sold to in vanilla, chocolate, and strawberry flavors to the dietetic and pharmaceutical markets for tube feeding), starts test marketing tofu in Swiss supermarkets. An attractive recipe booklet is attached to each packet, which is pasteurized for a 6-week shelf life.

Dec. Excellent, 19-page cover story on "Soymilk and Soyfoods," published in the prestigious *Journal of the American Oil Chemists' Society.* 1984 is the Society's 75th anniversary.

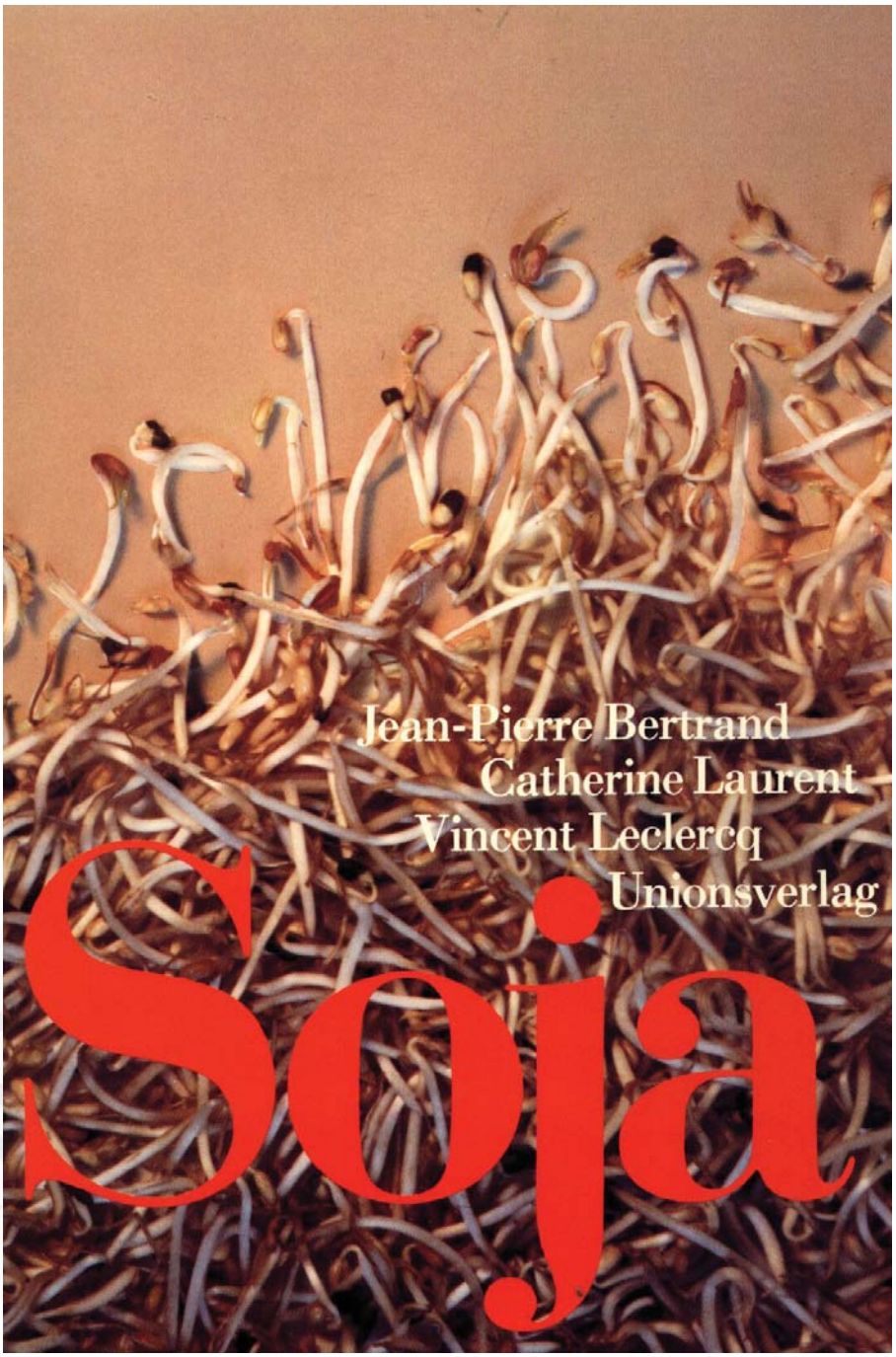
Dec. Ralston Purina, in its 1984 annual report, notes: "The Company has entered into preliminary agreement with Cargill, Inc., to sell six of the Company's seven soybean [crushing] plants." It also reported strong, steady growth in sales of soy protein products, from about $98 million in 1980 to $152 million in 1984, for an 11.5% compound annual growth rate (but only 4.5% after adjusting for inflation).

Dec. Gloria Vanderbilt's Glace, a soy-based nondairy ice cream, starts being test marketed in Los Angeles, in nine flavors.

Dec. A poll of readers by *Vegetarian Times* magazine finds that 53.1% of readers used tofu one or more times during the past 7 days; 29.4% used it 3 or more times.

Dec. 31. Brightsong Light Foods in Petaluma, California, receives the first funds of a $500,000 equity investment from a Hong Kong investor, who had seen an article praising Brightsong in *Venture* magazine. Brightsong greatly expands its product development and promotion.

* American Soybean Assoc. phases out its Human Nutrition Dept., headed for years by Judy Trujillo.



* Chicago Board of Trade [Illinois] starts trading options contracts on soybean futures. Continued.

363. Bertrand, Jean-Pierre; Laurent, Catherine; Leclercq, Vincent. 1984. Soja. Aus dem Franzoesischen von Felicitas Schaetzl [Soya. Translated from the French by Felicitas Schaetzl]. Zurich, Switzerland: Unionsverlag. 130 p. Illust. No index. 21 cm. Reprinted in 1988. [8 ref. Ger]
• ***Summary:*** A German translation of *Le Monde du Soja* (1983), this book gives a very good overview (from the French point of view) of the development of the soybean

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plant in the context of world agriculture. However it suffers from lack of an index.

Contents: 1. The soybean in the world economy: Portrait of a "sacred grain," soybean meal / cake–a high-value feed, soy oil–from diesel motors to ice cream, soy protein–the industrialized protein. Sidebar, by Verena Krieger: Soymilk and tofu, miso, tamari, shoyu and soy sauce, tempeh, soy sprouts. Producers and users. 2. The soya complex: Consumers and producers without power, the producers–a club with contradictions, the multinationals in the middle of the soya chain (a profile of each of the largest multinationals: ADM {USA}, Bunge & Born {Argentina}, Cargill {USA}, Central Soya {USA}, Continental Grain {USA}, Louis Dreyfus {France}, Ralston Purina {USA}, A.E. Staley {USA}, Unilever {England/Holland}, p. 30-31), the international wholesale business, the commodity exchange as a barometer.

3. How prices are determined: Subsidy politics in the USA, price guarantees in Brazil, the price of soybean meal and soy oil. 4. From sacred bean to soya complex–a look back: Colonial times, Europe becomes curious, the American soya complex is born, the struggle over margarine, soybean meal becomes successful, the war as a big opportunity, soya conquers America, soya against cotton–the oil battle.

5. Soya from the Americas conquers the world: The Marshall Plan–the first clever offensive, Public Law 480–food aid with a club-foot, trade pressure under the banner of free trade. 6. The politics of the importing countries: U.S. soya vs. EU cereal grains, France–the model of protein dependency, in the maze of European agrarian politics, Japan–the free way for imports. 7. The embargo of 1973–Trade war and crisis: the exchange awakens.

8. Brazil–The new soybean giant: The export sector is nursed back to health, credit–but not for everyone, the export boom, the equal weight problem. 9. The newcomers–Argentina and Paraguay. Paraguay, a little appendage of Brazil?, startup difficulties in Argentina, help for Soviet stock-farming.

10. The new questions: The Eastern Bloc in the conflict of goals, industrial comeback of the soybean in China, developing countries–meat and oil for the poor? 11. The reverse side of the "Soya Model:" Brazil–Flight from the land, dependency, and hunger, Tunisia–adulterated olive oil, Senegal as loser in the peanut / soya battle, a model of supply dependency.

12. Which alternatives? A "protein plan" in the European Union, better utilization of the green forage stock, industrial amino acids–a way out / escape? 13. Plant- vs. animal protein: Industrial soya protein–food of the future?, the Third World, a large market with the ability to pay, a future with contradictions.

Figures: (1) The various basic ingredients and commodities that can be made from the soybean (p. 11). (2) Overview of the use of soybeans and soy products (p. 14-15). (3) Soybean production and trade worldwide, 1980/81, Sept. to Oct., in million metric tons. (4) German newspaper headlines concerning soybeans, 1983-84 (p. 36). (5) Map of worldwide soybean trade, 1935-1939, in 1000 metric tons (p. 46). (6) Map of worldwide soybean trade, 1948-1949, in 1000 metric tons (p. 59). (7) Map of worldwide soybean trade, 1980, in 1000 metric tons (p. 63). (8) Graphs of soybean exports, from USA, from Brazil, from Argentina (p. 83). (9) Bar graph–Yield of protein in kg of protein per ha: Soybeans 7,900. Alfalfa 7,200. Potatoes 5,000. Maize 4,500. Poultry 1,200. Pork 800. Milk 700. Beef 600 (p. 120).

About the authors:

Jean-Pierre Bertrand, an agronomist (*ingénieur agronome*) and economist, is a research fellow at the French National Institute for Agricultural Research (*Institut national de la recherche agronomique, INRA*).

Catherine Laurent, a veterinarian and economist, is the author of a doctoral thesis on the soybean industry (*filière du soja*). Vincent Leclercq, an agronomist (*ingénieur en agriculture*) and economist, is a research associate at the INRA, for the International Economics Laboratory in Montpellier (*Laboratoire d'économie internationale de Montpellier*). He is also a member of Solagral, which stands for Agro-Food Solidarity (*Solidarités agro-alimentaires*). Address: France.

364. Wilson, James Ray. 1984. Multinational enterprise in Brazilian geographic development: 1968-1978. PhD thesis, University of Minnesota. 211 p. Page 1524 in volume 45/05-A of Dissertation Abstracts International. *
Address: Univ. of Minnesota.

365. *Wall Street Journal.* 1985. Ralston Purina says it sold 6 soybean-processing sites. Jan. 3. p. 23, col. 3.
• ***Summary:*** The deal leaves Ralston Purina completely dependent on outside sources for soybean products for its pet food and other products. "The food and animal-feed concern said the sale is part of a strategy to move away from commodity-based enterprises to higher-margin consumer goods. Ralston stopped operations at its seventh soybean-processing facility in Memphis, Tennessee, on Dec. 18 and the plant will be permanently closed on Feb. 1... Ralston will buy soymeal from suppliers in the future."

Cargill, a closely held grain processor and merchant based in Minneapolis, Minnesota, now owns 20 soybean-milling plants in the Midwest and Southeast.

366. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Bloomington, Illinois.
Date of Introduction: 1985 January.
Ingredients: Soybeans.
New Product–Documentation: *J. of the American Oil Chemists' Soc.* 1985. "Soy pioneer bows out, others grow

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bigger." March. p. 474, 476. On 2 Jan. 1985 Cargill finalized its purchase of six soybean processing plants from Ralston Purina Co. One of these was at Bloomington, Illinois.

367. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Lafayette, Indiana.
Date of Introduction: 1985 January.
Ingredients: Soybeans.
New Product–Documentation: *J. of the American Oil Chemists' Soc.* 1985. "Soy pioneer bows out, others grow bigger." March. p. 474, 476. On 2 Jan. 1985 Cargill finalized its purchase of six soybean processing plants from Ralston Purina Co. One of these was at Lafayette, Indiana.

368. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Iowa Falls, Iowa.
Date of Introduction: 1985 January.
Ingredients: Soybeans.
New Product–Documentation: *J. of the American Oil Chemists' Soc.* 1985. "Soy pioneer bows out, others grow bigger." March. p. 474, 476. On 2 Jan. 1985 Cargill finalized its purchase of six soybean processing plants from Ralston Purina Co. One of these was at Iowa Falls, Iowa.

369. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Kansas City, Missouri.
Date of Introduction: 1985 January.
Ingredients: Soybeans.
New Product–Documentation: *J. of the American Oil Chemists' Soc.* 1985. "Soy pioneer bows out, others grow bigger." March. p. 474, 476. On 2 Jan. 1985 Cargill finalized its purchase of six soybean processing plants from Ralston Purina Co. One of these was at Kansas City, Missouri.

370. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Louisville, Kentucky.
Date of Introduction: 1985 January.
Ingredients: Soybeans.
New Product–Documentation: *J. of the American Oil Chemists' Soc.* 1985. "Soy pioneer bows out, others grow bigger." March. p. 474, 476. On 2 Jan. 1985 Cargill finalized its purchase of six soybean processing plants from Ralston Purina Co. One of these was at Louisville, Kentucky.

371. **Product Name:** Soybean Oil, and Soybean Meal.
Manufacturer's Name: Cargill, Inc.
Manufacturer's Address: Raleigh, North Carolina.
Date of Introduction: 1985 January.
Ingredients: Soybeans.
New Product–Documentation: *J. of the American Oil Chemists' Soc.* 1985. "Soy pioneer bows out, others grow bigger." March. p. 474, 476. On 2 Jan. 1985 Cargill finalized its purchase of six soybean processing plants from Ralston Purina Co. One of these was at Raleigh, North Carolina.

372. *J. of the American Oil Chemists' Society.* 1985. Soy pioneer bows out, others grow bigger. 62(3):474, 476. March.
• ***Summary:*** The soybean crushing industry is undergoing major restructuring as A.E. Staley Manufacturing Co., a pioneer in soybean processing, leaves the business. On 2 Jan. 1985 Cargill finalized its purchase of six soybean processing facilities from Ralston Purina. At that time it probably passed ADM to become America's largest soybean crusher. The plants acquired by Cargill are in Bloomington, Illinois; Lafayette, Indiana; Iowa Falls, Iowa; Kansas City, Missouri; Louisville, Kentucky; and Raleigh, North Carolina. A 7th plant owned by Ralston Purina at Memphis, Tennessee, was not offered for sale, but was scheduled to be closed in February.

With this acquisition, Cargill now has 20 soybean crushing plants in the Midwest and Southeast. The location of each of Cargill's 14 other soybean crushing plants, with daily processing capacities ranging from 20,000 bushels to 120,000 bushels, are given.

Ten days later the A.E. Staley Manufacturing Co. announced it had sold its soybean crushing business to Illinois-based independent Soy Processors Co., owned by a general partnership of individuals associated with Archer Daniels Midland (ADM) and including ADM as a minority partner. With this, ADM probably recaptured its lead, but only by a slight edge.

In October Staley agreed to buy CFC Continental Inc., the nation's second largest supplier to the food service business. Ralston Purina, meanwhile, in October acquired ITT's Continental Baking Co.

Central Soya Co. has 9 soybean crushing plants, 7 of them in the USA at: Gibson City. Illinois; Decatur and Indianapolis, Indiana; Bellevue, Delphos, and Marion, Ohio; and Chattanooga, Tennessee. These 7 U.S. plants are said to have a total capacity of about 10,000 tons/day of soybeans. The 2 plants outside the U.S. are in Utrecht, The Netherlands, and Victory Soya Mills in Toronto, Ontario, Canada.

Ag Processing, a cooperative based in Omaha, Nebraska, operates 6 soybean crushing plants in the USA at: Van Buren, Arkansas; Eagle Grove, Sergeant Bluff, and Sheldon, Iowa; Dawson, Minnesota; and St. Joseph, Missouri. Total crushing capacity is estimated at 11,000 tons/day of soybeans. Ag processing is now entering the edible oil refining business, constructing its first refinery adjacent to its soybean crushing plant at St. Joseph, Missouri. Expected to be completed in 1985, it is rated to have a refining capacity of 12 tank cars (720,000 pounds) of soybean oil per day.

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Two poultry-related firms that are building oil refineries next to their soybean crushing plants are Perdue Inc. of Salisbury, Maryland, and Townsends of Millsboro, Delaware. Each refinery will have a capacity of 12 tank cars (720,000 pounds) of soybean oil per day.

According to the *Soya Bluebook,* the capacities of Perdue's two crushing plants are 700 tons/day at Salisbury, Maryland, and 600 tons/day at Cofield, North Carolina. Townsend's single crushing plant has a 1,200 tons/day capacity.

373. Meyer, Edwin W. 1985. Details on work with The Glidden Company (Interview). Conducted by William Shurtleff of Soyfoods Center, April 8. 4 p. transcript.
• ***Summary:*** Discusses: ADM's solvent extraction plant in Chicago, Norm Witte, Central Soya's Miracle Meal (the world's first dehulled soybean meal made with a desolventizer-toaster; launched in 1952, it revolutionized the poultry industry), Central Soya's first desolventizer-toaster started operation in Decatur in May 1950, Central Soya's soy protein concentrate plants, Robert Boyer and Frank Calvert, Norman F. Kruse [pronounced Cruze], Endre F. Sipos. Elmer B. Oberg.

Say Calumet Harbor, not Calumet River; Ed thinks they acquired the 2 country elevators on the rivers but may have added on something. Ed Wilhelm might know.

Promine was used mostly by a large sausage manufacturer in Detroit, Michigan, for its functional properties. It was looked at but never used by John Morrell & Co., Armour, Swift, or Kraft–which had an all-meat image and mentality; "they never touched it.

Glidden sold Morrell a lot of soybean grits for dog food, for years during the 1930s; Morrell had a dog food company in Iowa, which made a popular canned product.

Ed had to make a rapid exodus from the Glidden Co. on Laramie after ADM bought it. They wanted to get in quickly; he left some important documents behind.

ADM did sell their lecithin through the American Lecithin Co. in the early days, just like Glidden. Ask Joseph Eichberg about the exact nature of the agreement.

Ed wouldn't say that Glidden soy operations Chicago was struggling, but their profits were not up to Glidden's expectations so they were considered a weak division. World War II helped a lot financially, especially since the industrial protein was requisitioned by the U.S. Navy through NFS. Toward the end of the war Glidden was supplying soy flour for the relief programs to the liberated areas, especially Italy.

Oberg is too gracious to say that Central Soya bought Glidden largely for its research team. The main reason was the price was cheap; the whole works for $14 million, including all the elevators. Central got a great deal. Some years later they sold the Calumet Harbor elevators to Cargill for $8 million. At that time Central Soya had only a small development group under Sipos, who is still with them. He reported to Norm Kruse, starting in 1953. True, they basically had no research team. It was of equal importance to many others.

Steroids: After 1953 they had a major contract with Charles Pfizer Co. to process steroids and to sell them an intermediate for making corticoid steroids / hormones. That was the main business. They also had a little business with Charles Strauss in Montreal, Canada. "After 1953 we toll processed for Pfizer alone (that means for a given sum you process material for a certain party) so we remained in the steroids business."

Ed was an Abbott–Glidden–Upjohn fellow at Northwestern University. Abbott Labs and Upjohn were very interested in Glidden's work; they were involved in an informal joint research operation. General Mills got into making soy sterols at their Kankakee plant. Glidden put them into the business in a way. Upjohn was buying sterols from General Mills for many years. Upjohn is still using soybeans for their corticoid hormones. General Mills sold that plant to Henkel A.G., a German company.

The forerunner of Promosoy (Central Soya's soy protein concentrate) was Protein 70 (also called Pro-70), developed by E.B. Oberg. The pilot plant was built in 1959 and the full commercial plant later at the Gibson City plant. Pro-70 was developed at Glidden by Sidney Circle. He started working on the concentrate after the soy protein isolate, in about 1953-54. Pro-70 was not commercialized until after Central Soya bought Glidden's Chemurgy Div. in 1958. It was commercialized under the name Pro-70. The term Promosoy was introduced in about 1960 [sic, 1962] with the Gibson City plant. Both were exactly the same product–a soy protein concentrated. Response, their textured soy protein concentrate, was developed later under Ed Meyer's supervision.

The first formula for Rich Freeze was developed by Jim Liggett in about 1963-64; Ed was director of research at the time. It was developed partly for the Japanese market. "We [Central Soya] had an affiliate, Dai Nippon pharmaceutical, which was selling our granular phosphatides in Japan. Dai Nippon also had a few food ingredients, principally plant gums. They thought they might sell Rich Freeze, but they bombed out" [failed].

The Cone and Brown patent which was the basis for Alpha Protein. Address: 1701 N. Sayre Ave., Chicago, Illinois 60635. Phone: 312-637-0936.

374. Shurtleff, William; Aoyagi, Akiko. 1985. Soyfoods industry and market: Directory and databook 1985. 5th ed. Lafayette, California: Soyfoods Center. 220 p. Index. April. 28 cm. Updated every 1-3 years with a bibliographic supplement. [360 ref]
• ***Summary:*** Contents: 1. Introduction. 2. Directory of soyfoods manufacturers. 3. Directory of soyfoods support industry: Goods & services. 4. The many types of soyfoods.

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5. Historical: Historically most important books and serials, earliest references to individual soyfoods. 6. Year in review. 7. Soyfoods industry and market in the U.S. 8. Tofu industry and market in the U.S. and Canada. 9. Soymilk industry and market: Worldwide and in the U.S. 10. Tempeh industry and market in the U.S. 11. Soy sauce industry and market in the U.S. and Japan. 12. Miso industry and market in the U.S. and Japan. 13. Soynut industry and market in the U.S. 14. Natto industry and market in Japan. 15. Statistics on fermented soyfoods in East Asia. 16. Soyfoods in restaurants, delis & cafeterias. 17. Soybean crushing industry in the U.S. 18. Soy oil industry and market in the U.S. 19. Soy flour and cereal-soy blends industry and market worldwide. 20. Modern soy protein products industry and market in the U.S. 21. Soyfoods terminology and standards. 22. Names of soyfoods in major foreign languages (incl. Chinese / pinyin; Hoisin sauce = haixian jiang). 23. Soybean production worldwide and country-by-country. 24. Key institutions working with soyfoods worldwide. 25. Measures, weights, and equivalents. 26. About the Soyfoods Center & soyfoods consulting services. 27. Bibliography.

In February 1977 a Gallup poll in America showed a remarkable shift in the public's awareness of and attitudes toward soyfoods. The sampling of 1,543 adults across the nation found that: 33% believe that soybeans will be the most important source of protein in the future–ahead of fish at 24% and meat at 21%. 55% believe that "soy products have a nutritional value equal or superior to that of meat." 54% reported that they "had eaten foods containing soy protein as a prime ingredient within the past 12 months." Younger age groups living in large cities and those with college or university educations had the most favorable attitudes toward soy protein, indicating that support for soyfoods is likely to grow in the future. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

375. Fulmer, R.W. 1985. Trends in industrial use of vegetable oils in coatings. *J. of the American Oil Chemists' Society* 62(5):926-28. May. [3 ref]

• ***Summary:*** "Alkyd resins continue to be a major factor in coatings. Increased oil consumption in alkyd manufacture is not expected to be significant. Projections indicate a modest growth in total coatings usage at 2-3% per year. The industry is facing diverse coating performance demands that will bring unusual, more costly ingredients into use, probably at the expense of traditional oil-based alkyd resins. Offsetting this oil usage decline, perhaps, will be the continuing cost advantage of the relatively low-priced vegetable oils and the general versatility of alkyd resins. Increased use of oil-based resins is expected in emulsion (latex) paint modifiers to improve adhesion and early water resistance. The coatings industry, at least in maintenance and industrial coatings, is adopting a cost/square foot/year economic evaluation, factoring in the useful life of the coating.

"Very few indicators, if any, point to significant change in the overall consumption of vegetable oils in the surface coatings industry in the U.S. during the next 5 years. Projections indicate a modest, continued physical growth of 2-3% per year in coatings, consumption, more particularly in resin solids." Address: Research Center, Cargill, Inc., P.O. Box 9300, Minneapolis, Minnesota 55440.

376. Kingsbaker, C. Louis. 1985. The Louisville sewer explosions. Paper presented at the 91st Annual Convention of the International Oil Mill Superintendents Association. 12 p. Held 17 June 1985 at Denver, Colorado.

• ***Summary:*** Gives a detailed description of the fire and explosion at the Ralston Purina solvent extraction plant in Louisville, Kentucky, and the day by day, hour by hour sequence of events leading up to them. The explosions took place at 5:13 a.m. on Friday, Feb. 13, 1981. This was the worst sewer explosion in the history of the United States. The flash in the pre-dawn sky was so bright that a pilot 120 miles away, at 5,500 feet reported seeing it to the local control towel. "Fortunately, it occurred at 5:13 a.m., before rush hour traffic started and offices became filled. There were two miracles that happened here at this time. The first was that no one was killed, and only four hospitalized, none seriously... The second miracle was the weather." Long stretches of the main sewer trunk were totally blocked. It took 2 months before normal flows were returned to the sewer system, and 9 months to completely repair it. During these 2 months there were no heavy rains in the area. Heavy rains would probably have caused "flooding upstream of raw sewage with great health hazard to the residents of Louisville."

Photographs show the magnitude and power of these explosions. The sewers, located 30 feet below ground, are 12 feet wide, 12 feet high, and have concrete walls 10-12 inches thick reinforced with rebar. "Yet the force of the explosions was enough to blow up streets above the sewer along a two mile stretch in Louisville and leave 23 craters in the area, some as large as 30 feet long, 30 feet wide and about 25 feet deep... The damage was incredible."

Elsie Fischer was driving to work that morning when the street blew apart under her car. The roof of her Chevrolet Monte Carlo hit the bottom of the concrete viaduct, 13 feet above the street. She reported hearing a big boom sound under her car. She then passed out. "When she came to, he car was resting on its side against the concrete wall of the viaduct. Her friend, Shirley Rodes, looked out and said, 'my God, the whole street is gone.'" Elsie suffered only broken ribs and Shirley a broken hip.

Ralston Purina Co. ended up paying about $38.5 million for their negligence, including about $18.1 million to the Metropolitan Sewer District and about $12 million to private entity plaintiffs–20,000 people and 2,000 businesses who were without sewage service to their homes and businesses.

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"This amount does not include Ralston Purina's huge out of pocket costs." This event was a major reason that Ralston Purina got out of the soybean crushing business; they sold their seven solvent extraction plants to Cargill in 1985.

A graph accompanying this paper, and prepared by the author in 1981, shows 3 temperatures versus hourly time for Feb. 12 and 13, 1981. They are: (1) Discharge temperature from the rising film Evaporator (RFE). (2) Discharge temperature form the oil stripper. (3) Outlet temperature from the waste water evaporator (WWE). Taken together, the three graphs show that there were attempts Ralston Purina personnel to restart the extraction plant at 6:30 a.m., 7:30 a.m., and 7:30 to 12 noon on Feb. 13. Address: C.L. Kingsbaker, Inc., Atlanta, Georgia.

377. Leysen, Roger. 1985. Re: The largest soybean crushers in Europe. Letter to William Shurtleff at Soyfoods Center, Aug. 6–in reply to inquiry. 2 p. Typed, with signature on letterhead.

• ***Summary:*** The following are estimates based on Dr. Leysen's extensive contacts in the industry. The four largest soybean crushers, in descending order of size, are:

Cargill, approx. 9,500 tonnes/day. Five plants; 2 in France, and 1 each in Belgium, Netherlands, and Spain.

Unilever, approx. 7,100 tonnes/day. Three plants; 1 each in Netherlands, West Germany, and Switzerland.

Vandemoortele, approx. 5,500 tonnes/day. Two plants, both in Belgium.

Continental Grain, approx. 3,000 tonnes/day. Two plants; 1 each in the UK and Italy.

Information on the quantities of soybeans crushed each year in individual countries is only available from the different national oilseed processors' associations. Statistics for the EEC crush are available from FEDIOL. The picture is now becoming extremely complicated since most plants have been equipped or are being equipped for multi-seed crushing operations. The crushing of locally-grown rapeseed and sunflowerseed is interesting because of the crushing subsidies from the EEC; they compensate the price difference with the prevailing world price. Address: Market Manager Fats and Oils, American Soybean Assoc., Brussels, Belgium. Phone: 217 20 75.

378. Dunn, John R. 1985. Update on U.S. cooperatives and soybeans (Interview). Conducted by William Shurtleff of Soyfoods Center, Oct. 21. 2 p. typescript. [1 ref]

• ***Summary:*** Estimated capacities (in tons/day) of the major U.S. soybean crushers (Sept. 1985). Mr. Dunn has compiled the following statistics from the trade literature: 1. ADM 33,000. Ownership: Public. 2. Cargill, Inc. 26,000. Private. 3. Bunge 12,700. Private. Ag Processing Inc. 10,500. Co-op. 5. Central Soya 9,800. Private. 6. Quincy Soybean 4,600. Public? 7. Continental Grain. 4,100. Private? 8. Ralston Purina. 3,000. Public. 9. Harvest States Cooperatives (Mankato). 2,500. Co-op.

In August 1983 Land O'Lakes, Farmland Industries, and Boone Valley Processing Assoc. put all their plants into an interregional cooperative named Ag Processing Inc., headquartered in Omaha, Nebraska. It began operation in August 1983. Boone Valley no longer exists; its feed mill was taken over by Farmland. Land O'Lakes and Farmland still exist–they just spun their soybean processing assets into Ag Processing, of which they are owners. In Sept. 1983 [or June 1982] Ag Processing Inc. closed its plant in Fort Dodge, Iowa.

A ranking of the cooperative soybean processors is as follows: 1. Ag Processing Inc. 2. Harvest States (including Honeymead). 3. Gold Kist. 4. Riceland. 5. Agri-Industries. Address: USDA Agricultural Cooperative Service (ACS), Washington, DC 20250. Phone: 202-475-4929.

379. Anderson, Ronald L. 1985. Re: History of Continental Grain Company's involvement with soybeans. Letter to William Shurtleff at Soyfoods Center, Nov. 11. 10 p. Typed, with signature on letterhead.

• ***Summary:*** The following is excerpted from a 1985 Continental Grain Strategic Planning Study: History–World Processing Division: 1946–Allied Mills–Bought Taylorville, Illinois soybean crushing plant (100 tonnes/day capacity). Note: Allied Mills owned a soybean crushing plant at Taylorville, Alabama, by Aug. 1935.

1960–Allied Mills–Guntersville, Alabama, crushing plant start-up (500 TPD).

1965–Continental acquires 51% of Allied Mills, a major feed producer [Wayne Feeds] as well as a producer of fresh poultry.

1973–Acquired Allied Mills' plant in Cameron, South Carolina (300 TPD) and expanded it to 800 TPD.

1974–Allied Mills becomes a wholly owned subsidiary of Continental Grain. Continental's new Processing Division is created by consolidating the above three soybean plants from Allied Mills. That year Continental expanded its charter to include participation in international processing and oilseed product trading. Thus the company first expanded outside the USA. 1975–Acquired a specialty plant in Culbertson, Montana, to crush safflower and sunflower seeds (no soy; Expanded to 400 TPD in 1983). 1975-77–Constructed a soybean crushing plant at Liverpool (1,500 TPD; expanded to 2,200 TPD in 1982).

1976–Acquired a soybean and cottonseed crushing and oil refining plant at Capsa, Paraguay (600 TPD). 1977-79–Constructed a soybean crushing plant at Maringa, Brazil (2,200 TPD). 1979–Rebuilt a plant in Maurie, Australia, with a toll crush agreement with the Australian government, to crush soybeans, sunflower, and safflower seeds (300 TPD).

1980-81–Built a plant to crush sunflower and soybeans at Chivilcoy, Argentina (800 TPD). 1981–Acquired 50% of ICIC plant at Ancona, Italy. It crushes 800 TPD of soybeans

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and 250 TPD of sunflower seeds, and also refines oil. 1983–Bought plant in Sydney, Australia (300 TPD).

1984–Sold plant at Taylorville, Illinois. 1985–Acquired soybean crushing plant at Venice, Italy (1,200 TPD). 1986–Sold Liverpool plant (2,000 TPD). 1987–Sold Cameron plant (1,000 TPD). 1987–Closed Oleaginosa tung nut plant in Argentina. 1988–Sold Culbertson plant (400 TPD). 1989–Plant to sell all South America and Australia plants and upgrade Italian plants. 1989–Formed joint venture marketing company [Conti-Quincy] with Quincy Soybean of Quincy, Illinois.

In 1975 Continental's oilseed crushing capacity was 3,000 TPD or 1,100,000 tonnes/year. By 1985 this had increased roughly four-fold to 11,800 TPD or 4,300,000 tonnes/year.

A table lists all U.S. soybean crushers, the city and state of each of their plants, and the capacity of each. There were 78 plants with a total capacity of 121,025 TPD

America's largest soybean crushers are ADM (18 plants, 32,900 TPD, 27.3% market share), Cargill (21 plants, 29,200 TPD, 24.2%), Bunge (8 plants, 14,600 TPD, 12.1%), Central Soya (8 plants, 12,000 TPD, 9.9%), Ag Processing (6 plants, 10,050 TPD, 8.3%), Quincy Soybean Co. (3 plants in Illinois and Arkansas, 5,700 TPD, 4.7%), and Others (12 plants, 16,270 TPD, 13.5%). Address: Senior Vice President and General Manager, Continental Grain Co., World Processing Div., 277 Park Ave., New York, NY 10172. Phone: 212-207-5100.

380. *SoyaScan Notes.* 1985. Chronology of soybeans, soyfoods and natural foods in the United States 1985 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Jan. 2. The soybean crushing industry begins a year of major restructuring as the big get bigger and two pioneers drop out. Ralston Purina announces that it has sold six of its soybean crushing plants to Cargill, Inc. A seventh at Memphis, Tennessee, was closed. This removed the company from the soybean commodity business. With this transaction Cargill passes ADM to become America's largest soybean crusher.

Jan. 3. "Myth or Miracle: Debunking the Tofutti Fad," by Mark Medoff published in *Whole Life Times.* The first exposé of Tofutti, which contains very little tofu. Jan. 13 Medoff appears on the Gary Null Show, Natural Living, to discuss his findings for 1 hour on prime time radio.

1985 Jan. 12. A.E. Staley Manufacturing Co. announces that it is basically getting out of the soybean crushing business. It has sold five of its six soybean plants (having a combined crushing capacity of some 275,000 bushels daily) to Independent Soy Processors Co., which is closely affiliated with Archer Daniels Midland. Staley was unable to sell its Decatur facility, which ceased operations indefinitely in Jan. 1984. With this transaction ADM has probably regained a slight lead as America's largest soybean crusher.

Jan. 14-26. Soybean Utilization Workshop held at Soyafoods Research Center in Gannoruwa, Peradeniya, Sri Lanka, sponsored by the Sri Lanka Soybean Project and INTSOY. 24 representatives from 12 developing countries participate. The world's first event of its kind (*Soyanews,* Dec. 1985).

Jan. 25-27. Natural Foods Expo at Anaheim. Soy ice creams steal the show. Tofu standards are debated heatedly at Soyfoods Association board of directors meeting on Jan. 28, especially by Ralston Purina attorney. Board decides funds are too limited to try to hire an executive director for SAA. Jan. 31. Paul Obis, founder and editor of *Vegetarian Times,* is seriously considering buying *Soyfoods* magazine from Doug Fiske. He makes a firm offer in late March.

Feb. "Designer Beans," an excellent overview of the U.S. soyfoods movement and its gourmet connections by Sandy MacDonald, published in *New Age* magazine.

Jan. American Soybean Association introduces SIS (Soybean Information Service), a computerized database focusing on soybean production and marketing, and oil and meal. The earliest record is 1958.

Feb. 21. *Tofutti and Other Soy Ice Creams: Non-Dairy Frozen Dessert Industry and Market,* by Shurtleff and Aoyagi published by The Soyfoods Center. Two volumes, 352 pages. This is the first study of the rapidly emerging soy ice cream market, and of Tofutti.

Feb. 27. "Tofu Products May Be In, but Its Fans Wonder if There's Tofu in the Products" by Trish Hall published in *The Wall Street Journal.* Second major exposé on so-called "tofu ice creams" (such as Tofutti and Gloria Vanderbilt Glace), which contain only a token amount of tofu, as a marketing gimmick.

March 13-14. The theme of the Feb. 27 *Wall Street Journal* article picked up by the NBC evening news and the Today Show. Very positive coverage for tofu. Gary Barat of Legume, David Mintz of Tofu Time, and Gloria Vanderbilt each speak about tofu.

March 22. *The Book of Tempeh,* extensively revised second edition by Shurtleff and Aoyagi, published by Harper & Row. New bibliography (374 entries), history chapter, and list of tempeh producers.

March 26. Soyfoods Association's Tofu Standards (7th draft) presented to eight senior officials at the U.S. Food and Drug Administration's Center for Food Safety and Applied Nutrition, in Washington, DC, by Tom Timmins (Head of SAA Standards Committee), Gary Barat (President of SAA), Steve McNamara and Tom Donegan (SAA Food & Drug attorneys). The FDA group hears an hour long presentation on tofu, the standards, and the Soyfoods Association of America.

March. Soyarella (later renamed Soy Mozzarella), a tofu-based cheese, is introduced. It becomes an instant hit. Distributed by Neshaminy Valley Natural Foods of

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Huntingdon Valley, Pennsylvania, it is labeled as "non-dairy," yet it melts, and it tastes like cheese. Shrouded in secrecy, its manufacturer is unknown and the ingredients are questionable. It is sold in large blocks and labeled at individual stores.

March. American Soybean Assoc. launches a campaign among its members to write USAID and encourage them to cancel support for U.S. programs (such as INTSOY) aiding soybean production in Third World nations. The campaign is successful.

April 1. INTSOY signs a new cooperative agreement with USAID. Their work will henceforth focus on soybean utilization. The shift toward utilization began in 1983 and all work on soybean production and varietal development stopped in Aug. 1986.

April. *Tempe: An Annotated Bibliography,* compiled by Siagian and Sofia in Indonesia. Containing 273 references, it is the first bibliography to introduce the extensive Indonesian-language research on tempeh, the majority of which has been published since 1980.

April 15-16. International Symposium on Tempeh held in Jakarta, sponsored by the Indonesian Ministry of Health. 113 people attend.

April. Central Soya buys Griffith Laboratories' line of protein products.

May 31. Barricini Foods acquires Farm Foods, which then becomes a trade name for Barricini's natural / health foods line of non-dairy frozen desserts, including the pioneering product, Ice Bean, and Barricini Tofulite.

May. Morinaga, one of Japan's largest dairy companies, establishes Morinaga Nutritional Foods, Inc., a subsidiary with offices in Los Angeles, to focus on promoting their long-life silken tofu in America.

May. At the 6th Annual *Natural Foods Merchandiser* Merchandising Awards, soyfoods do well. Miso Mustard by American Natural Foods and Malteds by Westbrae win gold medals. Ah Soy by Great Eastern Sun wins a silver.

May. Soft Tofu Cheese, a non-dairy cream cheese cultured in miso, launched by Simply Natural, Inc.

June. Tofu Topper launched by Worthington Foods.

June. Ralston Purina publishes its 1985 Consumer Attitudes Monitor. Soy Protein in Foods, based on a nationwide survey of 628 adults. Indicates positive attitudes toward soy protein and soyfoods.

July 19. Shamrock Capital, a private company headed by Roy Disney, buys Central Soya, a publicly owned corporation. Agreement to buy was announced April 2.

July. Soy Supreme, spray-dried tofu powder, launched by Oberg Foods Div. of St. Peter Creamery.

July. Asian Symposium on Non-Salted Soybean Fermentation held at Tsukuba, Japan.

July 31. Tofu Time's sales of Tofutti increased more than sevenfold last year to $17,114,886 as compared with $2,361,391 for the previous year. Net income increased nearly 100-fold to $2,006,451.

July. New Gallup survey on vegetarianism of 1,033 Americans shows that millions are eating less meat and tens of millions agree with the move away from meat. 72% disagree with what used to be the standard notion: "The vegetarian diet is just a fad that will pass." A majority (52%) believe that "no one really needs to eat meat more than once or twice a week."

Aug. The DE-VAU-GE soymilk plant in West Germany starts production. Built by STS, with 4,000 liters/hour of soymilk capacity, they make Granose and GranoVita brands of soymilk.

Aug. Lightlife Meatless Tofu Pups (hot dogs) introduced by Tempehworks / Lightlife Foods of Greenfield, Massachusetts. The product sold nearly $250,000 in the next 10 months.

Sept. Soyfoods Center introduces SOYA, a computerized bibliographic database on soybean utilization, history, nutrition, processing, marketing, and production. Contains 18,500 references from 1100 B.C. to the present.

Sept. 30. Fearn Natural Foods in Illinois is sold by Louis Richard to Modern Products, Inc. in Milwaukee, Wisconsin.

Sept. 30 to Oct. 4. Tropical Soybean Workshop held at the International Institute of Tropical Agriculture (IITA), Ibadan, Nigeria. Proceedings are published in 1987 as Soybeans for the Tropics. Also this year IITA established a soybean utilization unit.

Sept. Tofulicious, a tofu-based non-dairy ice cream launched by Eastern Food products of Minneapolis. It was developed in conjunction with the University of Minnesota and funded by the Minnesota Soybean Research and Promotion Council. By 1986 it has become the first soyfood product in recent times to be actively promoted by state soybean associations, who sell it at many state and county fairs... where it is a big hit. Through Tofulicious many soybean growers begin to warm up to soyfoods.

Oct. 8th Draft of the Tofu Standards finished, incorporating extensive suggestions from FDA. Compiled by William Shurtleff.

Oct. Mori-Nu brand aseptically packaged tofu introduced by Morinaga Nutritional Foods.

Oct. Cream of the Bean Soygurt, a cultured soymilk yogurt, launched by Cream of the Bean, Inc.

Nov. Kikkoman introduces a long-life tofu in a foil retort pouch, imported from Japan. Poor quality causes the product to be withdrawn. It was re-introduced later.

Dec. Tofu Time starts exporting Tofutti to Japan. The first order by Daiei (a large retailer) of tubs for their parlors, is $350,000. This may be the first major export of a soyfood product (not including ingredients such as soy protein isolates) to Japan.

* The International Institute of Tropical Agriculture (IITA) in Ibadan, Nigeria, starts a program to promote processing and utilization of soybeans in Nigeria and

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throughout Africa. Continued.

381. *SoyaScan Notes.* 1985. Chronology of soybeans, soyfoods and natural foods in the United States 1985 (Continued) (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Continued. 1985 New Trends:

Dramatic Rise of Tofutti and Other Soy Ice Creams. 1985 will go down in the soyfoods history books as the "Year of Tofutti." Never before in history of the United States has any soyfood product achieved such widespread and sudden popularity or notoriety.

During 1985 at least 50 brands of soy ice cream (many with "Tofu" on the label) were on the market worldwide, most in the USA. And many were made by America's biggest dairy companies. An estimated 2.5% of all frozen desserts except novelties (popsicles, bars, etc.) sold in supermarkets were soy-based nondairy. The result of all this was to introduce tofu and isolated soy proteins to millions of people in a very positive context.

But many of the companies that sold so-called "tofu ice creams," while emphasizing tofu in their product names and marketing programs, actually had surprisingly little (if any) tofu in their products. In fact they contain so little that this marketing gimmick might be misbranding and a deliberate deception of the consuming public.

Rise of Soyfoods in Europe. Thanks to the Belgian Office of the American Soybean Association (ASA), and specifically to the efforts of Michael Martin, Europe's growing soyfoods movement is starting to become organized and active. In March 1984 Martin launched Europe's earliest known soyfoods newsletter, *Soya Foods,* and in September organized the First European Soyfoods Workshop, for which bound proceedings were published. This is the first time in recent decades that ASA has promoted soyfoods (other than soy oil) in the Western World. The strong U.S. dollar has led to a recent dramatic decline in imports of soybeans and soybean meal to Europe for feed and oil use (European rapeseed and sunflowerseed are being substituted), so the ASA is exploring new outlets where soy is unique.

The launching of tofu production and marketing by Switzerland's biggest supermarket chain, Migros, and by Galactina, a large and respected maker of dietetic and pharmaceutical products (including soymilk) is a landmark for tofu in Europe. In early January, *Tages Anzeiger,* one of Switzerland's biggest newspapers, had a special report on tofu, followed on Jan. 9 by a 30-minute TV feature on tofu.

The total number of soyfoods companies in Europe continues to show a steady increase. Many of these are being founded by people interested in macrobiotics. By Jan. 1985 there were 1,113 names in The Soyfoods Center's computerized mailing list of people actively involved with soyfoods in Europe.

At the 1984 ASA soyfoods workshop, Martin reported the following estimates of annual European soyfoods consumption: A table with three columns shows: Soyfood name, consumption, percentage of U.S. consumption.

Soy oil–1.7 million metric tons–38%
Modern soy protein products–40 million kg–28%
Soymilk–9 to 10 million liters–7%*
Tofu–5 to 6 million kg–22%
Tempeh–400,000 to 500,000 kg–50%
Miso–250,000 to 300,000 kg–11%
* U.S. figure includes soy based infant formulas. European figure is not clear on this point.

Note that the population of the USA is about 234 million compared with 489 million for all of Europe (not including the USSR), but 237 million for Northern and Western Europe, where most of these products are consumed.

Rapid Growth of Second Generation Soyfoods. In the 1984 edition of this book, we stated that the three fastest growing soyfoods in the USA (in terms of production increases) were tempeh (33% a year compound annual growth rate), tofu (15%), and soy sauce (14%). But now the picture has changed. In 1984 the fastest growing category was second generation products, ready-to-eat, all-American preparations, especially those based on tofu. The leader in this group is clearly soy ice creams (led by Tofutti), with a production growth rate of roughly 600% a year for the past 1-2 years. Then comes convenience tofu-based entrees such as Legume's products, tofu burgers and tofu burger mixes, and the like. This is the number one way that soyfoods are now entering the mainstream American diet. And the biggest gains are being made by marketing companies, rather than manufacturers. The second fastest growing category may now be imported soymilks, growing at about 40-60% a year.

Major New Capital Influx. The following is a brief summary of new capital influx to the soyfoods industry: A table with four columns shows: Company name, date of offering, $ amount, equity or debt; use.

Legume–Oct. 1982–$100,000 net–Equity. For tofu frozen entrees

Legume–Oct. 1982–$100,000–Debt. For tofu frozen entrees

Legume–Nov. 1983–$400,000 net–*Equity. For tofu frozen entrees

Legume–Nov. 1983–$200,000–Debt. For tofu Frozen entrees

Hinode Tofu–Nov. 1983–$2,500,000–Equity For general expansion

Tofu Time–Dec. 1983 $2,760,000 net–Equity. For soy ice cream

Tempehworks–July 1984–$265,000–Debt. For tempeh expansion

Legume–Feb. 1984–$200,000–Debt. For tofu frozen entrees

Legume–Aug. 1984–$1,248,000 net–Equity. For tofu frozen entrees

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Brightsong–Dec. 1984–$500,000–Equity. For tofu products

Legume–April 1985–Expecting lots more. For tofu frozen entrees

White Wave–Expecting.

Note: Equity = Sale of equity ownership in the company via stock in a public offering or in a private placement. Debt = Debt financing by taking out a private loan.

How have these companies fared? Tofu Time has done spectacularly well. The value of the company has increased more than five-fold since Dec. 1983, and profits are excellent. Legume, a marketer of low-calorie, cholesterol-free frozen entrees featuring tofu, has had the hardest sledding. A preliminary prospectus by Huberman Margaretten & Straus dated 5 June 1984 stated that from its inception through 31 March 1984, the company incurred aggregate losses of $709,773, including a loss of $18,465 in 1982, then $225,302 in 1983, increasing again to roughly $486,500 in 1984. Legume's common stock had a negative book value; 1984 sales were "a little less than $1 million." Yet the company has excellent products and in early 1985 landed some big food chains, which could help its bottom line considerably.

Growing International Interest in Tempeh. During 1983-84 Japan became a major tempeh producer. By May 1984 the world's largest tempeh producing company was Marusan-Ai (of Japan), which made 15,150 lb. a week. New marketing and production techniques were pioneered. The full story was described by Shurtleff and Aoyagi in *Tempeh Production* (1984).

Three Major International Symposia Featuring Tempeh were held: 15-16 April 1984 in Jakarta, Indonesia; 15-17 July 1984 in Tsukuba, Japan; and May 1986 in Honolulu, Hawaii. A special 13-day group study tour on Japanese Food Fermentations, led by Dr. Keith H. Steinkraus, has been organized by the Japanese-run, New York-based Technology Transfer Institute. Tempeh continues to be one of the fastest-growing soyfoods in the USA.

Growing Interest in Spray-Dried Tofu. Eleven articles were published this year on a product that promises to revolutionize the tofu industry. The first and largest manufacturers (St. Peters Creamery and Clofine) are both dairy companies. Spray dried tofu should appeal to the food industry, since it is easy to ship, store, and process.

Dairy Magazines Publishing Many Positive Articles About Soy-Based Dairylike Products. Traditionally the dairy industry has seen dairy analogs as a threat and fought to oppose them. The decades-long struggle against margarine is a good example of this. But now, many small dairies, struggling to survive, are looking for new products. A number (such as St. Peter Creamery and Clofine) have gained a new lease on life by starting production of soyfoods.

Major Changes in the U.S. Soybean Crushing Industry. Narrow crushing margins, a depressed export market for U.S. soybean meal, and poor profitability have led two of America's biggest soybean crushers, the A.E. Staley Manufacturing Company and Ralston Purina, to decide to get out of the soybean crushing business in Jan. 1985. Clearly they view poor profitability as a long term problem, and plan to diversify away from unpredictable agricultural commodities toward the "value added," retail end of the nation's food supply. Staley, in effect, sold its plants to ADM and Ralston Purina sold its plants to Cargill. In Nov. 1984 Staley acquired CFS Continental, Inc., the nation's second largest supplier to the foodservice industry. Staley, previously the oldest existing soybean crusher in America (since 1922), now relinquishes that honor to ADM. ADM is now the largest soybean crusher in America, but Cargill (which has many overseas plants) is the biggest in the world. These changes have led to a concentration of control in the U.S. soybean crushing industry. Both Staley and Ralston Purina plan to keep their edible soy protein (isolates, concentrates, etc.) operations.

Biotechnology is Emerging as a Major, Promising Factor in future soybean breeding development. Some agricultural experts are predicting that it could usher in the latest agricultural revolution, following the agrichemical revolution of the 1940s and the Green Revolution of the 1960s and 1970s.

The "Calcium Craze" Starts in America, aiding sales of tofu (curded with calcium sulfate), which is one of the best non-dairy sources of calcium.

382. *SoyaScan Notes.* 1985. Development of the book *History of Soybeans and Soyfoods* (Overview). Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** 1980 Oct. 22. First Table of Contents for Soyfoods History. I started this book because Nahum Stiskin of Autumn Press refused to let us use material from our tofu and miso books in our next book, titled *Soyfoods,* and it's hard to write the history portions of soyfoods. Inspired by Dr. Harry W. Miller and Henry Ford.

Dec. 9. Start to put bibliographic records on 3 x 5 inch file cards.

1981 March 13. Add chapters on Nutrition, National Soybean Processors Assoc., T.A. Van Gundy.

April 26. Add Society for Acclimatization, Li Yu-ying, Horvath, Lager.

May 15. Make Overview into four chapters. Add Soybean Chronology, Sri Lanka, History of Soybean Production, Asian History, Berczeller, USDA.

May 30. Change book title to History of Soyfoods and Soybeans from Soyfoods History.

June 6. Make Chronology Chapter 1. Make History of Soybean Production a separate chapter. Add McCay, Soyfoods Producers in the West (Listing of companies), changed title from Soyfoods History to History of Soyfoods.

August 21. Four Soybean Processors (Staley, ADM,

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Ralston Purina, Central Soya), Hymowitz, Bureau of Plant Introduction.

Oct. 8. Cargill, Co-op Processors, drop Hymowitz, Soybean Production Pioneers, put Soy oil ahead of soy flour, change the order of many chapters.

Nov. 3. Change title to *History of Soybeans and Soyfoods.* Put soy nuggets [fermented black soybeans] before miso.

Nov. 7. Set up first 3+2 character cataloging codes for Soyfoods Center library and documents, e.g. Hym-81.

1982 Jan. 2. Brief History of Fermentation East and West.

Feb. 2. Macrobiotics and Soyfoods, Kikkoman.

March 21. K.S. Lo and Vitasoy. Relocate East Asian pioneers at end of Pioneers section.

June 18. Separate Fermented Tofu and Fermented Soymilk.

July 22. Separate Soy Oil and Soybean Meal from Hydrogenated Soy Oil Products.

Aug. 21. Put all country histories together.

Oct. 25. Start using % instead of percent in Margarine chapter.

Nov. 13. D.W. Harrison.

Nov. 19. Decide to do separate chapter on Lecithin. Retitle each country from "History of Soyfoods in X" to "History of Soybeans and Soyfoods in X."

1983 Jan. 1. Switch from 3-letter codes to 4-letter. Hymo-73.

April 17. Changed "at" to KW = (keyword) on cards.

May 5. Dr. Fearn.

Nov. Added Cereal-Soy Blends at Flour chapter, Iowa State University, History of Soyfoods and Health Foods in Los Angeles.

1984 March. Meals for Millions, SFM-Rodale.

Sept. 22. Added 12 chapters on individual countries. Divided hydrogenation into 3 chapters: Oil, margarine and shortening. Change book's subtitle to "Past, Present, and Future." Structure it into four volumes.

Oct. 31. Completely restructure Soybean Production chapter into 16 parts. Discuss each by decade.

Dec. 26. Add Ice Cream.

1985 Jan. 19. Change ModProt to ProtMod, ProtIsol, etc.

March 8. Add PPC = Pioneering Protein Companies: Glidden, Rich Products, Gunther, Griffith Labs, I.F. Laucks. March 9. Add the Chemurgic Movement and US Regional Soybean Industrial Products Lab: Industrial Uses of Soybeans. United Nations, History of World Food and Protein, Hunger and Malnutrition.

April 17th. Redo outline, giving each company its own line and bibliography, like Adventists. Print outline vertically. Address: Director, Soyfoods Center, Lafayette, California 94549. Phone: 510-283-2991.

383. Baldwin, A.R.; Fulmer, R.W. 1985. Expanding opportunities for utilization of soybean oil and protein. In: R. Shibles, ed. 1985. World Soybean Research Conference III: Proceedings. Boulder, Colorado: Westview Press. xxiii + 1262 p. See p. 135-41. [6 ref]

• ***Summary:*** Contents: Potential protein uses: Products for rumen feeds, protein meals in animal feeds, other animal and pet foods, human foods/ingredients, use of soy flour in breads and bread-like, dough-based products. Potential soybean oil industrial uses: Dust controller, kerosene and diesel fuel additive replacement, carrier in pesticide applications, a chemical building block. Fabricated food opportunities. Vegetable oils vs. animal fats. Summary. References. Address: Cargill, Inc., 4854 Thomas Ave., South, Minneapolis, Minnesota 55410.

384. Benson, Bob. 1986. Cargill to purchase Liverpool soy crushing plant from Continental Grain. *Feedstuffs* 58(1):1, 32. Jan. 6.

• ***Summary:*** The acquisition consists of a soybean mill, oil refinery, and bulk handling facility. The plant was built in 1978 and expanded in 1982. The refinery was completed in 1985. This will be Cargill's first soybean crushing facility in England, although the company presently operates a multi-seed plant at Hull, England.

"Cargill will now operate soybean processing plants, multi-seed processing plants and oil refineries in England, France, The Netherlands and Spain." Address: Feedstuffs Staff Editor.

385. Cargill. Inc. 1986. How Cargill is helping develop a huge market for U.S. soybean oil (Ad). *Soybean Digest.* Jan.

• ***Summary:*** See next page. "What better place to market soybean oil than a country with 742,000,000 hungry mouths? That's exactly what prompted Cargill to send a representative to India. We're trying to convince government leaders that soybean oil is an inexpensive way to add needed calories to the nation's diet. If we're successful in raising India's oil consumption, it could open up a market for nearly 40 billion pounds. One more way Cargill keeps working to find more markets for your products."

386. Mason, Jim. 1986. The incredible egg story. Once regarded as an ideal protein food, eggs are now a questionable commodity. *Vegetarian Times.* Jan. p. 24-27.

• ***Summary:*** A carefully-researched and well-written story of the hellish life of today's chicken–which, not many decades ago scratched for bugs, basked in the sun, and laid eggs on many family farms. Today they live on factory farms and consumers are concerned about the cholesterol in their eggs.

"Each year in America, 260 million hens lay 62 billion eggs. It is a model of agricultural efficiency, but a living hell for the animals. Debeaked and stuffed four or five to a 12-by-18-inch cage, the hens, through genetic and environmental

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How Cargill is helping develop a huge market for U.S. soybean oil.

What better place to market soybean oil than a country with 742,000,000 hungry mouths? That's exactly what prompted Cargill to send a representative to India. We're trying to convince government leaders that soybean oil is an inexpensive way to add needed calories to the nation's diet. If we're successful in raising India's oil consumption, it could open up a market for nearly 40 billion pounds. One more way Cargill keeps working to find more markets for your products.

CARGILL

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manipulations, are forced to lay eggs as fast and as long as they can. Under these conditions, they are good, profitable egg machines for only one to two years. Then they are replaced.

"Cages and commercial enslavement have reduced our own notions of the chicken. We surely don't see today's chickens as beautiful, noble and valuable in their own right as, say, American eagles or whooping cranes. Centuries of domestication for agricultural purposes have done away with any thought that they are birds in the ordinary sense. And decades of factory farming have caused them to be treated as auto parts rather than living beings.

"So it is that the National Audubon Society, that great institution of bird loving, served chicken at last year's annual awards banquet. So it is that in England where the Protection of Birds Act, a 1954 law intended to prevent cruelty to birds, excludes poultry from the protection of sections that set out minimum cages sizes. So it is that the word 'chicken' is used to insult someone whom you wish to describe as stupid and cowardly. Indeed, the public's perception of chicken has been reduced below the status of other animals to a heartless, brainless commodity–a perspective which makes it much easier for us to engineer and manipulate them."

"In industry parlance, today's bird is simply a layer or a broiler, engineered for high egg production or rapid growth of muscle tissue. Chicken production is so specialized that even these two strains are managed by completely separate industries.

"Nearly all 'layer' hens today are of the White Leghorn variety because this bird pumps out more eggs than any other, and the eggs are neat, white-shelled ones..."

"Some 63 large companies own 52 percent of the nation's layer hens. Cargill, the biggest, has 10 million hens in nine states.

"The modern chicken owes its existence to the laboratories of a few key 'primary breeders.' About six companies develop the strains of birds that have been specialized for egg and broiler production. These companies sell breeding males and females to several hundred 'multiplier' companies which, in turn, produce the chicks that go to egg and broiler farms. At the multipliers, breeding birds have the run of open, litter-covered floors and they get more space and comfort than will their offspring in the egg and broiler factories. This is because the desired product is fertile eggs, and breeders get a higher percentage of fertile eggs if the breeding birds are given comfort, freedom and exercise." Also discusses debeaking, crowding (the "root of all suffering." "Fifty thousand or more hens are caged and stacked like so many boxes of detergent").

"At a cost of $2 million each year, the American Egg Board (AEB) promotes the 'Incredible Edible Egg' advertising campaign to boost egg consumption. The AEB collects a nickel for each case (30 dozen) of eggs sold by a producer. This funding scheme was set up in 1975 by an act of Congress, the 'Egg Research and Consumer Information Act.' The program is overseen by the USDA secretary who appoints directors to AEB."

387. *New York Times.* 1986. Briefs [Agri Industries and Cargill may form partnership]. Feb. 7. p. 31 (Natl); p. D3 (Late).
• ***Summary:*** The full text of this short announcement reads: "Agri Industries, Des Moines [Iowa], said it had tentatively agreed to form a grain marketing partnership with Cargill Inc. of Minneapolis [Minnesota]."

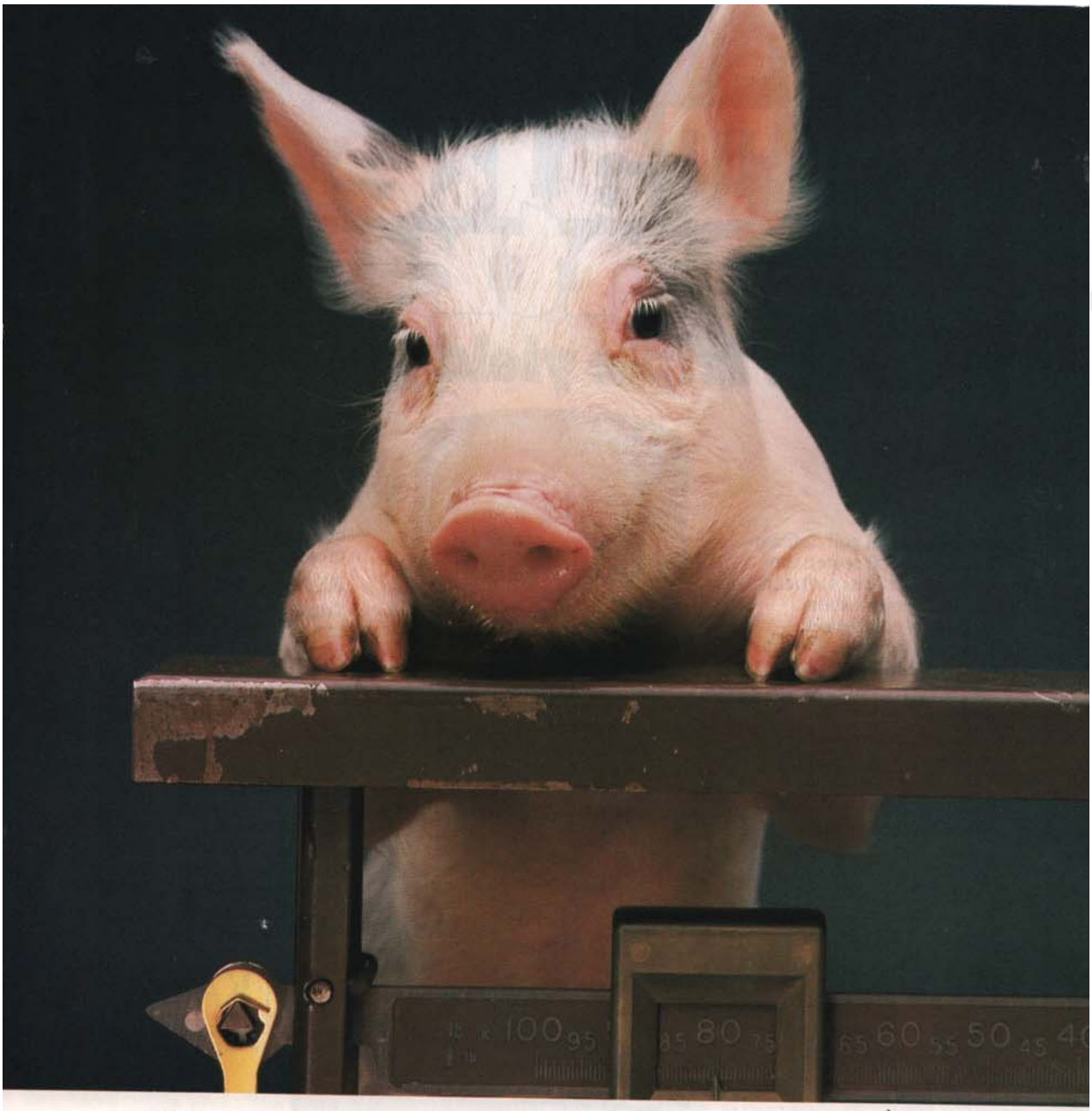
388. Cargill. Inc. 1986. How Cargill put Taiwan pigs on a steady diet of U.S. soybeans (Ad). *Soybean Digest.* March. p. 59.
• ***Summary:*** See next page. "A few years ago, Cargill started a program to improve hog production in Taiwan. Automatic self-feeders were introduced, along with better housing and improved sanitation. The result was a tremendous increase in the number of pigs that can be raised on the limited land available... One more way Cargill keeps working to help increase demand for soybeans all over the world."

389. *J. of the American Oil Chemists' Society.* 1986. Cargill to buy soybean facility [in England from Continental Grain Co.]. 63(3):289. March.
• ***Summary:*** Cargill has signed an agreement in principle to buy Continental Grain Co.'s soybean crushing, oil refinery and bulk handling operations in Liverpool, England. The agreement is slated to be completed by March 31, 1986. Continental Grain's soybean oil refinery, completed in 1985, as well as the original soybean processing facility built in 1978 and expanded in 1982. The Liverpool facility will be Cargill's first soybean crushing plant in England.

390. Nuri, Rashid. 1986. Economics of soybean processing plants. In: F.G. Winarno, ed. 1986. International Soyfoods Symposium. xiv + 403 p. See p. 145-55. Held 16-18 Sept. 1986 in Jogyakarta, Indonesia.
• ***Summary:*** Contents: Introduction. Soybean processing methods. Economics of soybean processing. Crushing economics in Indonesia. Address: Cargill Southeast Asia Ltd., 1 Scotts Rd., #22-10, Shaw Centre, Singapore 0923.

391. *Wall Street Journal.* 1986. Cargill leads Forbes list of largest private firms. Nov. 3.
• ***Summary:*** Cargill Inc., a trading company based in Minneapolis with $32 billion in sales, topped Forbes magazine's list of the largest U.S. companies for the second year in a row. It is followed by Koch Industries at $16 billion (2nd; petroleum and natural gas), and Continental Grain Co. at $14 billion (3rd; commodity trading firm based in New York).

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How Cargill put Taiwan pigs on a steady diet of U.S. soybeans.

A few years ago, Cargill started a program to improve hog production in Taiwan. Automatic self-feeders were introduced, along with better housing and improved sanitation. The result was a tremendous increase in the number of pigs that can be raised on the limited land available. Today, thousands of Taiwan pigs are making hogs of themselves on tons of soybean meal. One more way Cargill keeps working to help increase demand for soybeans all over the world.

CARGILL

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392. *Soybean Update.* 1986. Central Soya buys plants [from Bunge]. 10(46):3. Dec. 8.
• ***Summary:*** Central Soya plans to buy 7 of Bunge's 9 soybean processing plants, allowing Central Soya to control 20% of U.S. crushing capacity, while ADM controls 30% and Cargill 25%. Bunge plants to be sold: Cairo, Illinois; Decatur, Alabama; Emporia, Kansas; Jackson, Mississippi; Marks, Mississippi; Vicksburg, Mississippi; Logansport, Indiana.

393. *SoyaScan Notes.* 1986. Chronology of soybeans, soyfoods and natural foods in the United States 1986 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jan.–The first major soy cheese to hit the market is Soya Kaas–a landmark product. It was developed and introduced by Richard McIntyre of Soya Kaas Inc., a subsidiary of Swan Gardens Inc. Marketed exclusively by American Natural Snacks of Florida, it long remain America's most popular cheese alternative.

Jan. Ron Ishida, an attorney with no previous knowledge of tofu, working for Azumaya Inc. (South San Francisco, California), rewrites the Tofu Standards without authorization. They have already gone through 8 drafts. This creates a crisis.

Jan. *Soyfoods: The Journal of the European Soyfoods Association* (*ESFA*) begins publication from Paris. Philippe Vandemoortele of Alpro is president of the association and Guy Coudert is editor of the periodical. The association plans to organize a soyfoods conference every 2 years. But the journal is discontinued after 3 issues.

Jan. Tomsun Foods is reorganized, changing its name (for the fourth time) to Tomsun Foods International. The firm's new chairman is Juan Metzger, founder of Dannon Yogurt. The company produces nearly 3 million lb. of tofu a year.

Jan. First Tofutti Shop opened in Japan by Daiei Co. Inc., Japan's largest retailer. Shop sells non-dairy soy-based ice cream and related snacks.

Feb. 7. Fire destroys Island Spring tofu plant in Vashon, Washington, with an estimated $1 million loss.

Feb. Soya Kaas, an imitation cheese containing soymilk and casein, launched by American Natural Snacks, a marketer. The manufacturer is Swan Gardens of Georgia.

Feb. Jofu, a tofu-based, non-dairy, nonfermented, yogurt-like product, sweetened with fruits, launched by Tomsun Foods International of Greenfield, Massachusetts. The product is a hit, grossing nearly $400,000 in its first 32 weeks on the market.

Feb. Barricini Foods has its first public stock offering. Raises $1.5 million, gross to use in marketing Tofulite and Ice Bean soy ice creams.

Feb. Central Soya purchases Staley's protein line, including Mira-Tex, Procon [soy protein concentrate], and Textured Procon brands.

Feb. ASA hires Jim Guinn as technical director of soybean quality programs. Soybean quality is an area of growing interest, with two parts: 1. The traditional area of soybean condition, concerning grades, damage, foreign material, etc. 2. The newly emerging area of soybean composition and its relation to grades. New measurement technologies make it likely that soybeans may soon be sold based on their composition of oil and protein. Both effect exports and price.

March 5. Pesticide control now tops the Environmental Protection Agency's list of most pressing problems, announces *The New York Times* (and *Soybean Digest,* June/July). Stricter pesticide laws are enacted.

March 7. Richard E. Lyng of California becomes U.S. Secretary of Agriculture, replacing John R. Block. Policies remain unchanged.

April 18. Wm. Shurtleff, in charge of compiling the original tofu standards, submits a strong criticism of the illegitimate Ishida draft in the form of a detailed chronology of the development of the tofu standards.

April. Tofu cheesecake revolution in New York City profiled by *Whole Life.* Thirteen restaurants now offer them.

May. Tofutti Love Drops (chocolate covered graham cookie drops) launched by Tofutti Brands with much fanfare.

May. Nasoya's new million-dollar automatic tofu-making system, imported from Sato Shoji in Japan, begins operation.

June. Increasing consumer deception by "soy cheese" manufacturers. *Whole Life* publishes "Whole Frauds in the News: Will the Real Soy Mozzarella Please Stand Up (That is, If There is One)," an exposé of mislabeling involving Soyarella, Tofu Mozzarella, and Soya Kaas (though the latter brand is not at fault). Argues that it is deceptive for health food stores to call a product "non-dairy" if it contains casein (milk protein), even though FDA rules allows such a designation. In Oct. *Whole Life* reports that "Independent lab tests prove Soyarella hoax; Large quantities of casein [19.6%] found in so-called soy cheese." Soyarella had previously been marketed as casein free.

July. Ralston Purina Co. starts publication of *Nutrition Overview,* a newsletter focusing on soy protein and fiber.

July. Soyfoods win big in 7th Annual Natural Foods Merchandiser merchandising awards: Gold: San-J tamari and shoyu. Silver: Fantastic Foods' Tofu Scrambler and Tofu Burger, Westbrae Natural miso soups. Honorable mention: Walker & Wilks frozen entrees, White Wave boxed tofu.

July. Vitasoy reintroduces its line of reformulated and repackaged soymilk products, originally launched in 1984. They contain more solids and nutrients, and are sweetened with barley malt instead of maple syrup.

July. A Roper poll in the U.S. finds that tofu is the "most hated" food. 35% of a sample of 2,000 adults checked it on a list of foods said to be disliked, ahead of liver (34%), yogurt

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(29%), Brussels sprouts (28%), and prunes (24%). Results do not vary significantly by age, but tofu dislike is somewhat less among those with higher incomes. The poll results are very widely publicized, and are even the subject of a question on the TV program Jeopardy (in early 1988)–and its rerun! These findings suggest both a widespread awareness of tofu and a split image: Some like it and others don't.

Aug. Kikkoman's new shoyu plant starts operation in Chitose, Hokkaido, in northern Japan. The first product was shipped on 30 Jan. 1987.

Sept. 9. American Soy Products Inc. plant dedicated in Clinton, Michigan. A $10 million joint venture between Eden Foods and four Japanese companies (Kawasho, Marusan, Muso, Seikensha), construction on the plant began in Oct. 1985. It will make Edensoy soymilk in Tetra Brik cartons. The first products are shipped in November.

Sept. 19. Tofu standards passed by Tofu Standards Committee in San Francisco, after all committee members except Shurtleff agree to start with a blank slate in drafting new standards–thus erasing years of work by hundreds of people. Shurtleff resigns in protest, arguing that this is a violation due process. Shortly thereafter Barricini and Ralston Purina also refuse to give final approval. Tofu standards are stalled indefinitely after many years of hard work.

Sept. 24. First International Tofu Products Expo, Seminar, and Soyfoods Buffet, held in Munich, West Germany. Sponsored by Bernd Lehmann International Consultants. 100 people attend.

Oct. Supersoy brand soymilk introduced to America by Mitoku USA. It is made by Kibun Health Foods Co. in Japan.

Oct. Ralston Purina sells its domestic agricultural products business, Purina Mills. Total sales for 1986 were $5.5 billion.

Nov. Island Spring announces $6.5 million investment from Edward Lynch Co. to finance an expansion plan. Construction of a new 30,000 square foot factory is now underway on Vashon Island.

Dec. 1. White Wave of Boulder, Colorado, acquires Soyfoods Unlimited, a tempeh manufacturer of San Leandro, California. This makes White Wave America's largest tempeh manufacturer.

Dec. 8. Central Soya purchases 7 of 9 Bunge's soybean crushing plants. ADM is now estimated to control 30% of U.S. crushing capacity followed by Cargill (25%), Central Soya (20%), and other (25%).

Dec. Tomsun Foods International nets about $3.45 million in its first public stock offering (IPO). Most of the funds will be used for sales and marketing of Jofu, and to repay $800,000 in debts. Total Tomsun sales in 1986 were about $3.1 million.

Dec. Haagen-Dazs will drop Tofutti and start distributing Barricini Tofulite, a non-dairy frozen dessert.

Dec. Brightsong Foods is named as one of the top ten food innovators for 1986 by Food & Beverage Marketing magazine. In fact, Brightsong is listed first!

Dec. Tofruzen Inc., a soy ice cream marketer from Englewood, Colorado, raises $1.6 million in a public stock offering. Sales of Tofruzen in fiscal 1986 were $91,000, rising to $158,000 in 1987, and $213,000 in the first quarter of 1988.

Dec. Edible Soy Products in Hudson Iowa is sold to Solnuts of Tilburg, The Netherlands, and renamed Solnuts, Inc. The Hudson and Tilburg plants are the only ones in the world that dry roast soybeans to make soynuts.

Dec. More than 60,000 Italian farmers harvested nearly 25,000 hectares (61,700 acres) of soybeans this year. Italy is now Europe's largest soybean producing country, followed by France. Five years ago, Italy produced virtually no soybeans. The Ferruzzi Group is the leading promoter, helped by hefty subsidies from the EEC.

1986 New Trends:

So Called Tofu Cheeses. Eight new soy cheeses were launched during 1986, many with the term "Tofu" in the product name. Many have been shrouded in mystery, with the names of the manufacturer and ingredients often not disclosed. There has been much consumer deception, mislabeling, and several attempts to conceal the fact that they usually contain casein, the protein in cow's milk.

Soy Yogurts and Yogurt-Style Products. The leader in this exciting new category is Jofu from Tomsun Foods. The two basic types are fermented soymilk products (e.g. Cream of the Bean, Soy-O), and non-fermented tofu-fruit blends (e.g. Jofu).

Move to Manufacturing Soymilk in America. The rising cost of soymilk imports is making them unprofitable. Domestic production, which obviates shipping U.S. soybeans to Japan, then shipping the beans and water back, will have major, beneficial long-term effects on Edensoy, Ah Soy, and Westbrae Malteds. Still imported are Vitasoy (from Hong Kong, whose exchange rate is tied to the dollar) and Sunsoy (from Belgium).

The declining value of the dollar against the yen starting in late 1985 led to a steady rise in soymilk prices. But the combination of domestic production and larger size packages (see below) has led to a drop in soymilk prices during 1986. For example, Edensoy, selling for 6 times the price of dairy milk per unit volume in early 1984, was selling for only 3.5 to 4.1 times as much in late 1986, a drop of about 37%.

Soymilk Switches to Tetra Brik Cartons and Liters or Quarts. Edensoy, Westsoy, and Ah Soy have all switched to Tetra Brik cartons this year. Lower total manufacturing and shipping cost is the main reason. The liter/quart size was pioneered in the U.S. by Alpro/Vamo Foods/Sunsoy, and followed by Edensoy, Ah Soy, and Vitasoy. These counterparts of dairy milk in quarts suit the needs of regular soymilk users by offering a more economical price per unit

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volume plus greater convenience. Soymilk may be the first liter-size Tetra Brik product to succeed in America.

INTSOY is doing outstanding, pioneering work with soyfoods and soybean utilization in the Third World and America. Research is focusing on extrusion cooking, extruder-expeller processing for small-scale oil expression, and fresh green soybeans. Since April 1987 the INTSOY Newsletter has become one of the best soy-related publications available.

Morinaga Long-life Silken Tofu becomes a major force in the U.S. tofu market. Traditional manufacturers consider the product a major threat to their markets. Azumaya has hired an attorney who spends considerable time causing troubles for Morinaga.

394. Fundacao Cargill. 1986. A Soja no Brasil Central. 3a. ed. revista e ampliada [The soybean in central Brazil. 3rd ed. Revised and enlarged]. Campinas, Sao Paulo, Brazil: Fundacao Cargill. viii + 444 p. Illust. 28 cm. [Por]
• ***Summary:*** Contains 11 chapters by various authors; each chapter has its own bibliography. Chapter 1, by Shiro Miyasaka, gives a history of the development of soybean cultivation in Rio Grande do Sul, Sao Paulo (where Swift & Co. and Anderson Clayton were active), and Parana. He notes that the soybean started to be cultivated in Rio Grande do Sul in 1935. In 1955 about 95% of the soybean production there was concentrated in the Zona das Missoes. Address: Brazil.

395. Kahn, E.J., Jr. 1987. Profiles: The absolute beginning [Dwayne Orville Andreas and ADM]. *New Yorker* 62:41-68. Feb. 16.
• ***Summary:*** The best biography seen of Dwayne Andreas, with emphasis on his work with soy. On the first page is a long discussion of Nutri-Bev, a soy-based milk substitute.

Contains a nice portrait (illustration, line drawing) of Andreas on the first page. Address: New York.

396. Hannigan, Kevin J. 1987. Vegetable protein use shifts gears: The market for vegetable proteins has changed radically in the past few years with the emphasis shifting from nutrition to function. *Food Engineering* 59(5):155-58, 160, 162-63. May.
• ***Summary:*** Suppliers who proudly announced a "Protein Division" a few years ago have quietly folded their tent or changed its name. A consolidation and reorganization is taking place, product by product. About 2 years ago, Central Soya bought Griffith's protein line, although Griffith is still a distributor and continues to serve former customers. Last year Central Soya acquired Staley's concentrate line. Central Soya says its concentrates are "beating isolates to a pulp."

Three vegetable proteins (soy isolates, whey solids, and yeast) are now typical building blocks in over half the food in the American diet, found in more than 2,500 products. These proteins were worth $579 million in 1985, according to Frost & Sullivan, Inc. Soy and whey each have about 45% of the market, yeast about 10%. By 1989 says the F&S study, about 879 million lb of soy products will be sold annually. ADM sells mostly isolates, Cargill mostly soy flour and grits and textured products. Soy isolate is widely used as a binder at the 2% level to reduce ground meat patty breakage. Address: Features editor.

397. *Soybean Update.* 1987. 1987 acreage, production forecasts as of June 1. June 8. p. 2.
• ***Summary:*** Cargill Investor Services Inc.: 58.3 million planted acres, 57.1 million harvested acres, 32.5 bu/acre yield, 1.856 million production.

398. American Soybean Assoc. 1987. Overseas soy products donation program from the Dominican Republic. P.O. Box 27300, St. Louis, Missouri. 12 p. Special edition by Dr. Hyadee Rondon de Zadronga and Ruth S. Orellana. [10 ref. Eng; Spa]
• ***Summary:*** In Jan. 1985 ASA contacted the Soy Protein Council to suggest a joint soy protein feeding program in the Dominican Republic. The trial was conducted between Jan. and June of 1986. Dr. Haydee Rondon de Zadronga was program director. "The objective of the sponsors of this important research, was to demonstrate that soy protein has a prominent place in the daily diet, and that food products manufactured with soy protein do not cause any acceptance problem in pre-school age infants, that they are easy to acquire, and that they can be bought at popular prices."

"In 1984 the area planted of soybeans in the Dominican Republic was of 10,000 acres and in 1985 the acreage planted was of 25,000 acres. The program consisted of the donation of 2 tonnes of soy products to be used in a fortification feeding program."

The following products were donated: 250 kg Procon fortified soy protein concentrate by A.E. Staley Mfg Co.; 250 kg Response 4342 fortified soy protein concentrate chunks by Central Soya Co. 500 kg Textured 16328 textured fortified soy flour (50% protein), and 500 kg Bakers Nutrisoy 63100, fortified defatted soy flour (50% protein) by ADM, and 500 kg defatted soy flour (50% protein) by Cargill. Address: St. Louis, Missouri.

399. Cargill Hybrid Seeds. 1987. These are just a few of the reasons PAG, Paymaster and Cargill are coming together to bring you more consistent high-yielding hybrids (Ad). *Soybean Digest.* Aug/Sept. p. 4.
• ***Summary:*** See next page. This full-page color ad shows that Cargill is now in the seed business. The new company is named Cargill Hybrid Seeds. Probably mostly corn and no soybeans.

Note: PAG Paymaster seems to be the name of a company.

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These are just a few of the reasons PAG, Paymaster and Cargill are coming together to bring you more consistent high-yielding hybrids.

PAG, Paymaster and Cargill now bring you their most consistent high-yielding hybrids from each brand, under the Cargill Hybrid Seeds name. Next year, plant a consistent high performer. Cargill Hybrid Seeds.

CARGILL HYBRID SEEDS
PAG·PAYMASTER·CARGILL

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400. **Product Name:** [Textured Soy Flour].
Manufacturer's Name: Cargill B.V. Affiliate of Cargill, Inc., USA.
Manufacturer's Address: Coenhavenweg 2, P.O. Box 8074, 1013BL Amsterdam, Netherlands.
Date of Introduction: 1987.
New Product–Documentation: Soya Bluebook. 1987. p. 78.

401. Leavenworth, Donald H. 1987. Soybeans in the '90s–World supply and demand. *ASTA* (*American Seed Trade Association*) 16:1-13.
• ***Summary:*** Outlines eleven major changes that have taken place in the world soybean economy during the past six years, most of them negative for the U.S. soybean industry. 1. Drop in annual crushing capacity utilization from 80% to 70%. 2. Exports of oil and meal have declined. 3. Plants have been closed permanently. 4. Crushing volume peaked in 1979-80. 5. The U.S. share of the world market has declined though the total market is growing 5% a year. 6. Production of rapeseed and sunflower seed have increased rapidly in the EEC. 7. The strong dollar has encouraged developing countries to develop oilseed self sufficiency. 8. Malaysia and Indonesia have increased palm oil production. 9. Rapeseed varieties have been improved and Canola oil is now Canada's leading oil. 10. Crushing capacity in Brazil and Argentina have grown dramatically because of high taxes on soybean exports. 11. The 1981 farm bill gave U.S. farmers a fixed loan rate averaging $5.02 leading to high U.S. soybean prices. Address: Cargill, Inc., Minneapolis, Minnesota.

402. Soy Protein Council. 1987. Soy protein products: Characteristics, nutritional aspects and utilization. Washington, DC. vii + 43 p. No index. 28 cm. [96 ref]
• ***Summary:*** See next page. Contents: Preface. Introduction: Historical aspects. Importance of soy protein products. Definitions and methods of preparation. Protein quality and human nutrition. Health and soy protein. Functionality. Uses in food systems. Regulations regarding usage. Economics. Future considerations. Bibliography.

Provides an overview of the key benefits of soy protein products. The Soy Protein Council (named Food Protein Council from 1971-1981) is a trade association representing three processors of soy protein products: Archer Daniels Midland Co. (Decatur, Illinois), Cargill, Inc. (Minneapolis, Minnesota), and Central Soya Co. Inc. (Fort Wayne, Indiana). The Council acknowledges with gratitude comments received from the following specialists in this field: John Erdman, Lawrence A. Johnson, Irvin E. Liener, Edmund W. Lusas, Walter J. Wolf, Endre F. Sipos, and Keith J. Smith.

"The industry that produces soy protein products for human consumption has grown enormously since the late 1950s. Current production is about 1 billion [1,000,000,000] pounds of protein products for human consumption per year in the United States–or about 4-5 pounds per person." This includes soy flours and grits. Address: 1255 Twenty-Third St., N.W., Washington, DC 20037. Phone: 202-467-6610.

403. Fulmer, Richard W. 1988. The soybean as a chemical factory. In: L. McCann, ed. 1988. Soybean Utilization Alternatives. St. Paul, MN: Univ. of Minnesota Center for Alternative Crops and Products. vi + 429 p. See p. 1-12. [5 ref]
• ***Summary:*** Discusses the chemical composition of the soybean in detail including its fiber, protein, carbohydrates, oil, minerals and ash, lecithin and gums, vitamins, sterols, and numerous microconstituents.

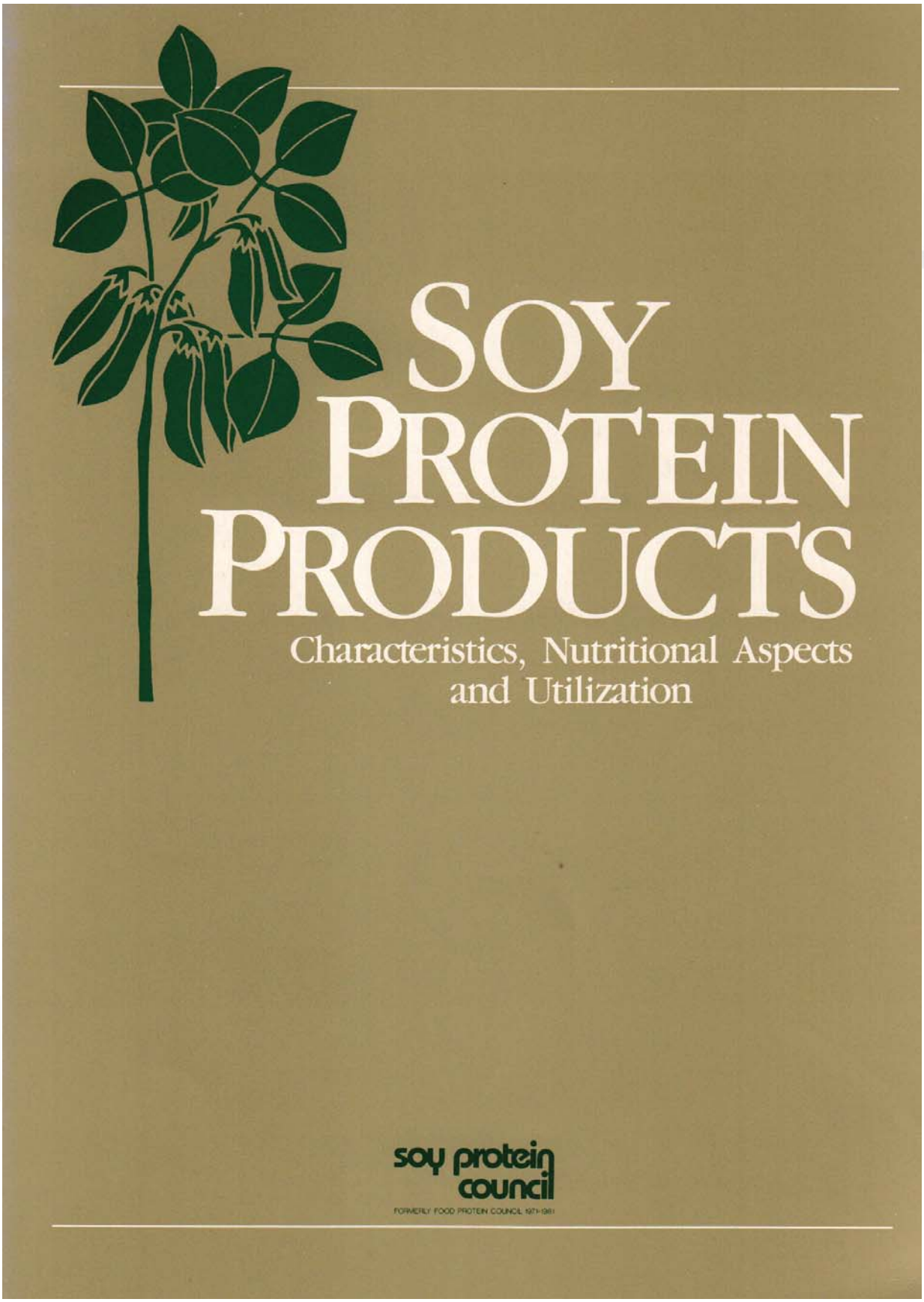
Today's modern soybean processing plant will process between three and four million pounds of soybeans daily, or roughly 75,000 bushels or 2,500 acres of soybeans each day. Further, it is not uncommon to have in excess of one million bushels of bean storage at the processing plant. The control processing of edible soy flour includes the following measurements: Lipoxygenase, peroxidase, nitrogen solubility index (NSI), protein dispersibility index (PDI), urease, trypsin inhibitor (TI), and available lysine. Address: Cargill, Inc., Minneapolis, Minnesota 55440.

404. Miller, John; Ledur Brito, Luiz A. 1988. SANBRA, SAMRIG, and Soybean Crushing in Brazil (Interview). *SoyaScan Notes.* May 13. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** SANBRA and SAMRIG are two closely related companies in Brazil, often collectively known as SANBRA. Their main activities are oilseed crushing (at 5 plants, the biggest of which at Ponto Grosso has 3,000 tonnes/day capacity), oil refining, production of finished oil products (such as margarine, shortening, mayonnaise), and exporting. Their total sales in Brazil are about $1,000 million dollars a year. Both companies have the same management; the various entities are largely for tax and legal purposes. Both are part of the multinational commodities group Bunge and Born, which is a family owned group with many independent companies worldwide. Actually the Bunge family left the group many years ago. The companies are not tied in to one central organization but are all owned by the same people. The company keeps a low profile, and even more since the famous Born kidnapping and ransom case in Argentina.

Brazil's soybean crushing industry has Ceval as the largest crusher (they have only been crushing for several years, but plan to crush 2 million tonnes in 1988), followed by SANBRA and Cargill, which are about equal in size. SANBRA has about 33% of the Brazilian margarine market.

SANBRA started in Brazil about 50-60 years ago in cottonseed trading and processing. In about 1957-58 SAMRIG started its first soybean crushing plant in Rio

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Grande do Sul, Brazil's southernmost state. The company then began to play a pioneering role in getting Brazil involved with soybeans. They encouraged farmers to start growing beans because the capacity of their plant (220 tonnes/day) was more than the total soybean production in that state. As a true multinational company, SANBRA could see the success of the soybean worldwide, which gave them confidence in its future in Brazil. Historically, soybeans have expanded steadily from south to north in Brazil. In about 1973 SANBRA built the first big soybean crushing plant in the state of Parana, city of Ponto Grosso. Cargill, Anderson-Clayton, and Continental Grain Co. soon followed suit in this same strategic location.

SANBRA has also been a leader in soy proteins in Brazil. In late 1969 in RGS they started a modern soy protein products plant that began by making isolates, then later expanded into concentrates, and textured soy flour. This is the only plant in Brazil to make isolates and concentrates. Many companies make textured soy flour (TVP). SANBRA also produces various soy lecithin products. The products are sold in Brazil and also exported. This business has grown a lot.

ITAL does basic research, with not as much emphasis on applying that research. There is not a strong link between them and industry. They also do some training. Address: SANBRA, Centro Empresario de Sao Paulo, Av. Maria Coelho Aguiar, 215 Bloco D, 5* Andar, Sao Paulo–CEP 05804–Brazil. Phone: 545-5459.

405. Haumann, Barbara F.; Baldwin, A.R. 1988. Feature. Update: Fats and oils industry changes. *J. of the American Oil Chemists' Society* 65(5):702-04, 706, 708, 710-13. May.
• ***Summary:*** Dramatic changes have occurred in the worlds' fats and oils industry during the past 25 years. U.S. soybeans, the major factor in world fats and oils trade in 1961, have encountered increasing competition from soybeans produced in South America as well as from palm oil, sunflowerseed and rapeseed. U.S. soybean dominance of world oilseed trade during the 1950s and 1960s began to crack in the 1970s. U.S. embargoes on soybean exports in 1973 and 1980 led Europeans, the Soviets and the Japanese to look for alternate sources of supply. They found Brazil and Argentina willing to learn how to grow soybeans for the export market. Ohio State University researcher Norman Rask has estimated total costs of producing a bushel of soybeans at $6.62 in the U.S., $5.39 in Brazil and $4.06 in Argentina.

In the world soybean market, Brazil's share of international trade has grown from 3% in 1981/82 to 14% in 1984/85; in the same time span, Argentina's market share rose from 6% to 13%. Meanwhile, the U.S. share declined from 82% to 65%. In world soybean oil markets, Argentina's share has grown from 3% in 1981/82 to 14% in 1984/85. Brazil's share has increased from 24% to 27%; the U.S. share has fallen from 27% to 20%. U.S. soybean growing area peaked in 1980 at 70 million acres. In recent years, it has declined, with only 56.4 million acres harvested in 1987. U.S. soybean accounted for 65.9% of all world oilseed trade volume in 1979/80. By 1986/87, its share had dropped to 55%. The 1982 Census of Manufactures counted 243 vegetable oil mills operating in the U.S. in 1982. Of these, soybean oil mills had increased to 137 establishments, versus 121 in 1977.

The U.S. Food and Drug Administration (FDA) in 1985 ruled that low erucic acid rapeseed oil could be used in food products in the U.S. The first company to act on this was Procter & Gamble, which in 1986 reformulated its Puritan cooking oil to contain 100% canola oil. The phenomenal increase in corn oil production has been due to enzymatic processes for high fructose corn syrup and a gas tax subsidy on fuel alcohol. Consolidation, mergers, buyouts, and restructurings have led to increasing concentration of capacity in the hands of a few international companies whose operations range from seed cultivation through shipping and export to complete processing. This has led to fewer locations that process larger quantities of oilseeds.

U.S. based soybean processors are expanding their foreign investments in an attempt to escape relatively high U.S. soybean prices as well as to circumvent trade barriers. These include Archer Daniels Midland Co. (ADM), Bunge, Cargill, and Continental Grain. Since 1982, ADM also has held a 45% interest in Alfred C. Toepfer International, a large commodities trading firm with headquarters in Hamburg, West Germany. In 1984, a National Institutes of Health panel recommended that Americans limit their cholesterol intake to less than 300 mg/day, fat intake to 30% of total calories in their diet, saturated fat intake to less than 10% of calories, and polyunsaturated fat intake to a maximum of 10% of calories.

There are a number of possible developments to watch during the next 20 years, including: Soybeans with low or zero linolenic acid; soybeans with higher yields (possibly hybrids) with broader adaptability to increase overall production; increased consolidation of oilseed processing. As world markets for oilseeds and oilseed products increase, market shares for soybeans and soybean products will decline. Address: JAOCS.

406. Golbitz, Peter. 1988. Soybean prices rise sharply. *Soya Newsletter* (*Bar Harbor, Maine*). May/June. p. 1, 12-13.
• ***Summary:*** Amid the possibly the worst drought to hit America since the Dust Bowl years, prices for soybeans have risen from $5.30 per bushel last November to just under $10.00 per bushel now, with prices have reached a high of nearly $11.00 in June. The recent price increases are attributable directly to the drought; and, a greatly reduced soybean supply, which resulted from increased exports due to a cheaper dollar overseas. History has shown that soybean prices don't have much of an impact on food prices

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in general. "In 1983, when soybean prices increased 37% from the prior year, food price inflation increased about 1%. Beef prices were up a mere 0.8% and pork prices actually decreased by 1.3%. The fact is, most of the costs food manufacturers incur are related to marketing. Farm products represent only 20% of the total price of food."

Archer Daniels Midland, Cargill, and Central Soya have all raised prices for their soy flour and soy concentrate products by 20% to 30% over the past few months. Of all the food categories affected, the rising price of soybeans may have a more pronounced effect on soyfood products than any other. The effect of rising prices will be felt the greatest in the Oriental markets, where tofu prices have traditionally run 40% to 50% lower than in the supermarkets due to greater competition. Address: Soyatech, Bar Harbor, Maine.

407. Steffens, Ken. 1988. Farmland, Far-Mar-Co., and PMS Foods, Inc. (Interview). *SoyaScan Notes.* Aug. 22. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Far-Mar-Co merged with Farmland in the late 1970s. Farmland then started losing money in a big way, so they wanted to divest some of their assets and get out of the business of making TVP. So three of the personnel bought Far-Mar-Co in 1983 in a leveraged buyout. The new company was called PMS Foods Inc., standing for Parke, Major and Shoup. They are still in Hutchinson, Kansas, making TVP. Farmland is a mere shadow of its former self, a manufacturer in Kansas City.

PMS paid ADM a licensing fee to make TVP. It goes for another 3 years. Four companies made TVP: ADM, PMS, Cargill, and Central Soya (in that order of size). The latter three all license the process from ADM. Ken, who worked for Ralston, says that Ralston is also named on the original patent and they get lots of licensing money. They litigated against all the producers of TVP. There were three different rights: process, chemical, and one other. ADM, Ralston, and Staley were co-holders of the patent–not just ADM. Ralston is no longer in the business.

Update. 1998. April. PMS Foods, Inc. is listed in the 1998 Soya Bluebook Plus on p. 192. Location: 2701 E. 11th, P.O. Box 1099, Hutchinson, Kansas 67504-1099. Phone: 316-663-5711. Fax: 316-663-7195. e-mail: sales@pmsfoods.com. Internet: www.pmsfoods.com. Contact: Derek Park, President. Plant manager: Floyd Shoup. Facility: Extrusion, served by rail & truck. Edible products: Meat analogs, textured soy flour. Address: PMS Foods, Inc., 2701 East 11th St., Hutchinson, Kansas 67501. Phone: 316-663-5711 (Oct. 1995).

408. *Cedar Rapids Gazette* (*Iowa*). 1988. Deaths: Joseph M. Sinaiko. Oct. 4.

• ***Summary:*** Joseph M. Sinaiko, age 97, of 3322 Terry Dr., SE, died on Oct. 3, early Monday morning, at Mercy Medical Center, following a long illness. He was born on 4 March 1891 in Minsk, Russia. He married Freda Fine on 8 Feb. 1922. They later divorced. Then he married Janet Epstein in 1958 at New York City. She died in 1985.

In 1921 he moved from Madison, Wisconsin, to Cedar Rapids, Iowa, where he founded the Iowa Milling Company, "a general feed mill which later became one of the first soybean processing plants in the country." The company, of which he was president, was located at 411 Sixth St. NE; in 1967 it was sold to Cargill.

In the early 1960s Mr. Sinaiko also founded Corn Starch and Syrup Co., a wet corn milling plant; in 1967 it was sold to Archer-Daniels-Midland Co.

His memberships in many organizations are listed. He is survived by: Three daughters–Arlene Oberndorf of Los Altos, California; Nadine Cole of Palo Alto, California, and Sally Dogon of Wellesley Hills, Massachusetts; a son, William Sinaiko, of Marina Del Rey, California; a sister, Leila Shapiro, of Hollywood, Florida; nine grandchildren and two great-grandchildren.

Memorial services will be at 11 a.m. Thursday, at Temple Judah, by Rabbi Edward Chesman of Temple Judah and Rabbi David Shapiro of Hollywood, Florida. There will be no visitation at the funeral home. A family prayer and graveside service will be held at 11:30 a.m. Friday in Forest Hill Cemetery, Madison, Wisconsin, by Rabbi David Shapiro. Memorial donations may be made to a charity of the donor's choice.

A small portrait photo shows Joe Sinaiko at an advanced age.

409. Mrkvicka, Mike. 1988. Ag industry pioneer was quiet giant: C.R.'s [Cedar Rapids] soybean, corn processing industry begun by Joe Sinaiko. *Cedar Rapids Gazette* (*Iowa*). Oct. 16. Sunday.

• ***Summary:*** This is a long obituary of Joe Sinaiko, who died on Oct. 3 at age 97. He was a pioneer in the soybean and corn processing industries. Yet praise and public attention made him uncomfortable, so he avoided the limelight. Yet when he died his remarkable achievements and contributions were largely unknown, even in Cedar Rapids where he lived most of his life.

A pioneer in the soybean industry, he began processing soybeans in 1928 at his plant at 411 Sixth St. NE.

His family and friends remember how he built up his business traveling door-to-door in rural Iowa, encouraging farmers to grow soybeans and explaining to them how best to do so. Then he'd buy the beans, process them into oil and meal, go back to the farmers, and persuade them to buy his soybean meal as a livestock feed ingredient. The farmers thought he was crazy at first, but they later became his best customers.

He was also a major player in corn processing in Cedar Rapids, where he started the Corn Starch and Syrup Co. ADM and Cargill would not be so important in Cedar Rapids

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today were it not for Joe Sinaiko.

Discusses his birth in Russia and immigration to the USA where his family settled in Madison, Wisconsin. Speaking no English, he entered school for the first time in his life, entering the fifth grade. His first teacher gave him English lessons after class. He later spoke fondly of her and the profound impact she had on his life.

Six years later he entered the nearby University of Wisconsin–but he had to negotiate. Using skills that served him well in later life, he persuaded the bursar to delay payment of the $30 tuition until the next summer, when he could earn the money working at his father's feed business. After two years of college, Joe quit to help support the family by delivering hay and oats for his father's store. In 1917 he joined the army and spent World War I in Texas. He caught influenza during the deadly epidemic of 1918, spent months in the hospital, received an honorable discharge, and considered himself lucky to survive.

Returning to Madison, he soon longed to get into business for himself. Cedar Rapids seemed like an excellent location. In the early 1960s [sic, 2 Dec. 1957] Joe granted a rare interview, published in the Cedar Rapids Gazette, in which he recalled: "I wanted a location where railroad facilities were more adapted to milling. In 1921 I found Cedar Rapids was well suited for both buying grain and shipping. So I moved."

In Cedar Rapids, his first job was delivering hay and oats to stables. Within four years, however, he had negotiated the purchase of the old Jackson Milling Co., a run-down six-story building on Sixth Street NE. He paid no money down–another tribute to his negotiating skills.

He renamed it Iowa Milling Co. and, willing to work hard, began to run it as a one-man, hand-to-mouth operation. He soon developed a reputation for honesty and was able to convince farmers that they should wait a week to be paid for their grain–long enough for him to mill it, sell it, and pay them back.

In 1928 Sinaiko began processing soybeans–after learning from a Quaker Oats salesman that a few farmers in Illinois had planted the crop. He began by purchasing a few hundred bushels. The A.E. Staley Manufacturing Co. was already processing soybeans on a small scale in Decatur, Illinois.

Then came the stock market crash of 1929 and the Great Depression of the 1930s. Sinaiko's mill barely survived. His creditors pressed him to declare bankruptcy, but again he negotiated his way out. They were terribly hard times. He even tried peddling a soap named Royal Gold, made from soybean oil. Then, in the early 1930s, the soybean producing and processing industries started to grow. Sinaiko was well positioned to take advantage of this growth, and before long his Iowa Milling Co. was thriving, selling soybean meal for both livestock feeds and human foods.

Then in 1941 [sic, June 1944] he decided to sell the company. He was unhappy with the excessive government regulation of his business. So Cargill bought him out that year. But as soon as he sold his company, Sinaiko realized he had made a mistake. He deeply regretted his decision.

Joe returned to the milling business by building two smaller mills in Fairfield, Iowa, and Washington, Iowa. But he still longed to get Iowa Milling Co. back. After World War II, he saw his chance. Cargill agreed to trade Iowa Milling Co. for the two plants in Fairfield and Washington. Sinaiko quickly agreed to the deal.

He was also developing plants outside of Iowa–in Springfield and Decatur, Illinois; Norwalk, California; and Minneapolis, Minnesota. He and his close relatives managed these businesses.

Sinaiko was keenly interested in new technologies that could make his mills more efficient. In 1951 he installed new solvent processing equipment for his soybeans at the Iowa Milling Co.

By the 1960s, his interest in new technologies led him into the field of wet corn milling. In 1964 he founded the Corn Starch and Syrup Co. and began construction of a large and very modern plant in Cedar Rapids. Competing corn processors scoffed at his audacity. When his plant began production in 1965, the competitors cut their prices for corn starch and syrup by 50%. Sinaiko was forced to follow suit. But his plant was so efficient that he could make a profit even at that low price–a remarkable achievement. His competitors could not. Cargill, the agribusiness giant, looking for a way to enter the wet corn milling industry, offered Sinaiko a deal he couldn't refuse. In 1967 Cargill purchased the Corn Starch and Syrup Co. and (for the second time) the Iowa Milling Co.

Again Sinaiko has second thoughts about the sale–this time of the corn processing plant. So at age 79 he decided to invest in another corn processing company–Corn Sweeteners. In May 1970 he announced the groundbreaking in Cedar Rapids.

But problems arose. Many of the engineers and management team for the new company came from the corn processing plant that Cargill had bought from Sinaiko in 1967. These defections upset Cargill and raised questions of business ethics. Sinaiko, who placed a high value on his ethical integrity in both business and personal matters, acknowledged the problem. Moreover, the new plant was too big for the personal, informal management style that he preferred. So in 1971 he sold his interest in Corn Sweeteners to Archer Daniels Midland Co., which used the plant to enter the corn processing industry.

After 1971 Joe never really retired. He kept an office in Executive Plaza, dabbled in real estate, kept an eye on his investment portfolio, and maintained a keen interest in world affairs and soybean prices.

He was a quiet philanthropist who donated to hospitals and to Coe College in Cedar Rapids, to the University of

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Wisconsin, and to a wide range of Jewish causes and many others.

Although Joe Sinaiko's accomplishments were largely unsung, he left a rich legacy to the vitality (economic and otherwise) of Cedar Rapids.

An excellent illustration by the Gazette's Chris Wolf shows a portrait of Joe Sinaiko. A 1964 photo shows his Corn Starch and Syrup Co. under construction. Address: Gazette staff writer.

410. Ewoldt, Harold F. 1988. Cedar Rapids [Iowa]: The magnificent century. Northridge, California: Windsor Publications. 136 p. See p. 26, 33, 128. Illust. Index. 29 cm. [18 ref]

• ***Summary:*** "Cargill Inc., headquartered in Minneapolis [Minnesota], entered the milling community of Cedar Rapids very quietly. It had opened a grain marketing office in the city in the 1930s. In 1945 its feed division, Nutrena, started manufacturing animal nutrition products. Also during the 1940s it operated the Iowa Milling Company, a soybean processing operation.

"In May 1967 a lease arrangement with Joseph Sinaiko provided Cargill with its first corn-milling operation in the Cedar Rapids area. Cargill acquired the corn-processing facilities of Corn Starch and Syrup Company plus other Sinaiko interests in Cedar Rapids. The corn plant, located at 1710 Sixteenth Street S.E., had the capacity to process 14,000 bushels of corn per day into starch syrup and gluten feed products. This arrangement gave Cargill processing facilities for soybeans and animal feeds" (p. 26).

"In 1936 Honeymead [owned by the Andreas family] transferred its manufacturing base to Cedar Rapids, taking over the facilities of the Mesquakie Mills at 1120 Twelfth Avenue S.W. There it pioneered pellet feeds, an innovation that revolutionized the feed industry. This facility was eventually leased to the Nutrena Division of Cargill." The Honeymead facility became Cargill's west-side soybean plant.

"The Iowa Milling Co. entered the livestock-feed business in Cedar Rapids in 1923. It manufactured a feed known as Vitamo, which included a complete line of poultry feed, plus high protein feed supplements for cattle and hogs. Iowa Milling's soybean processing operation brought it to the attention of Cargill, which eventually purchased the company" (p. 33).

A page titled "Cargill, Inc." notes that Cargill began in 1865 as a small grain warehouse in northeastern Iowa. In 1943 Cargill arrived in Cedar Rapids when it purchased a soybean processing plant. Today in Cedar Rapids, Cargill employs a total of 337 people at two soybean processing plants, a corn wet-milling plant, and an analytical testing laboratory. The three processing plants provide markets for 50 million bushels/year of Iowa corn and soybeans.

Cargill's East Plant, at 411 Sixth Street Northeast, is the larger of the two soybean processing plants. An aerial photo shows this plant. The West Plant, at 1010-10th Avenue Southwest, makes special soy ingredients such as soy flour and textured vegetable protein products such as imitation bacon-, beef-, and chicken-flavored chips. These are used as salad toppings or as ingredients by food manufacturers.

In 1967 Cargill entered the corn wet-milling industry in Cedar Rapids with the purchase of a mill near the Cedar River at 1710-16th Street Southwest. An aerial photo shows this plant. Address: Cedar Rapids, Iowa.

411. Farris, Paul L.; Crowder, R.T.; Dahl, R.P.; Thompson, Sarahelen. 1988. Economics of grain and soybean processing in the United States. In: Chester O. McCorkle, Jr., ed. 1988. Economics of Food Processing in the United States. San Diego, California: Academic Press. xiii + 449 p. See p. 315, 341-48. Chap. 9. Illust. Index. 24 cm. [42 ref]

• ***Summary:*** The contents of Chapter 9 includes: The manufactured feed industry: Feed demand and ingredients, industry structure, industry performance (larger feed manufacturing companies include Ralston-Purina and Cargill-Nutrena), the future of feed manufacturing.

The barley malting industry ("Malt produced from barley is a major ingredient in the production of beer and other alcoholic beverages." The U.S. barley malting industry uses about 40% of U.S. barley production. Barley is allowed to sprout ("malt") slightly before it is processed).

The soybean processing industry: Soybean products (one bushel of soybeans is converted into about 48 pounds of meal and 11 pounds of oil), industry growth and organization, industry operating characteristics and operating environment in the 1980s, future challenges. Address: 1. Dep. of Agricultural Economics, Purdue Univ., West Lafayette, Indiana 47907; 2. Pillsbury Co., Minneapolis, Minnesota 55402.

412. Fulmer, Richard W. 1989. Use of soy proteins in bakery and cereal products. In: A.J. Pascale, ed. 1989. World Soybean Research Conference IV. Buenos Aires: Continuing Committee. xxviii + 2152 p. See p. 1742-49. [9 ref]

• ***Summary:*** "Soy products having unique functional properties have found wide application in bakery foods. These soy products include enzyme-active soy flour, full-fat soy flour, high-fat (refatted) soy flour, lecithinated soy flour, defatted soy flour, soy grits, and soy bran. Products used to a lesser extent, probably due to cost, are soy protein concentrates and isolates.

"Nutrition, cohesion, water/fat emulsification, enzymatic activity, and processability are only a few of the attributes contributed by soy to breads, cakes, rolls, crackers, pancakes and cereal products." Address: Cargill, Inc., P.O. Box 9300, Minneapolis, Minnesota 55440.

413. Continental Grain Company. 1989. U.S. soybean

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processor consolidation: Capacity by major processor. New York, NY. 1 p. Unpublished manuscript. Internal report. April 11.
• ***Summary:*** The table gives figures for 1975, 1983, and 1989. The following April 1989 figures list ranking, percentage of total capacity, number of plants, and capacity in short tons/day (TPD).

1. ADM, 31%, 17 plants, 37,300 TPD.
2. Cargill, 26%, 16 plants, 31,300 TPD.
3. Bunge, 10%, 7 plants, 12,000 TPD.
4. Central Soya, 9%, 7 plants, 11,000 TPD.
5. Ag Processing, 9%, 6 plants, 11,000 TPD.
6. Quincy, 5.8%, 2 plants, 7,000 TPD.
7. Owensboro, 2.5%, 1 plant, 3,000 TPD.
8. Continental, 0.6%, 1 plant, 1,800 TPD.
9. All others, 5%, 6 plants, 6,000 TPD.

Total: 63 plants, 120,400 TPD.

Note that the top 5 companies controlled 85% of capacity in 1989, but only 64% in 1983 and 45% in 1975. The total number of plants in 1989 was 63, compared with 88 in 1983 and 103 in 1975. The total capacity was 120,400 TPD, down from 123,025 in 1983 but up from 92,600 in 1975. Address: Continental Grain Co., World Processing Div., 277 Park Ave., New York, NY 10172.

414. Faga, Betsy. 1989. History and activities of Protein Grain Products International (Interview). *SoyaScan Notes.* April 21. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** This is a trade association representing manufacturers of 7 processed and blended foods, 5 of which are fortified with soy. One other product, Instant Corn Soy Milk, was dropped about 2 years ago when government surpluses of nonfat dry milk ran out. She considers Corn Soy Milk (CSM) and Corn Soy Blend (CSB) to be one and the same, because the government tends to order either one or the other, based on the availability of nonfat dry milk. Likewise with Wheat Soy Blend (WSB) and Wheat Soy Milk (WSM).

Betsy has been with the organization for 16 years. Six companies (all millers) make P.L. 480 products, and 5 of these are members. Only Lincoln Grain Co., recently purchased by ConAgra, is not. Members include the 5 millers plus 15-20 associate members. PGPI publishes a directory (which is available only to members) that lists members and the products they make, plus related non-proprietary statistics. During the period 1984-86 shipments of P.L. 480 foods increased because of the emergency in Ethiopia. After 1986, shipments were returned to normal and it looks like they will remain steady during the next few years. An up-trend looks unlikely. The program now permits monetization, which allows voluntary agencies, in a certain percentage of the program, to order Title II commodities, then sell it within a country (as to a business, such as a bakery), and use the funds to further food aid in that country (such as enhancing a school lunch program). The cereal-soy blends are not widely monetized, so this decreases demand for them. Demand rises for the basics, such as wheat flour and cornmeal.

Food for Peace started in 1954. The forerunner of PGPI, named Bulgur Associates, was founded in 1963. Their main thrust was to do market development work for bulgur wheat overseas. Betsy began in 1969. Soy fortification of cereal commodities began in the late 1960s by the NRRC in Peoria, Illinois, and the milling companies that are now members PGPI. Initially only wheat products were fortified (Soy Fortified Bulgur, Wheat Soy Blend), so in 1970 the name was changed to Protein Cereal Products International (PCPI). Then in 1974 the name was changed to Protein Grain Products International as corn and sorghum products were included and the Corn Millers' Export Institute merged with PCPI. They still do market development and focus on P.L. 480 Title II.

The five members who are millers are ADM, Cargill, Cereal Food Processors (Kansas City; wheat flour), Illinois Cereal Mills (large corn millers), and Lauhoff Grain Co. (now a subsidiary of Bunge). In the title II program, Lauhoff is the largest, closely followed by ADM. Associate members make the bags in which the products are shipped, or make the vitamin-mineral premixes or tricalcium phosphate. Address: President, Protein Grain Products Council, 6707 Old Dominion Dr. #240, McLean, Virginia 22101. Phone: 703-821-3717.

415. Kilman, Scott; Shellenbarger, Sue. 1989. Soybeans sink as CBOT [Chicago Board of Trade] acts to avert squeeze. *Wall Street Journal.* July 13. p. C1, C12. Western ed.
• ***Summary:*** Soybean futures prices plummeted as the CBOT ordered traders to close out their positions. "Soybean supplies are scarce following last summer's drought, and traders acting on behalf of Ferruzzi Co's., affiliate of Ferruzzi Finanziaria S.p.A., Milan, Italy, have accumulated control of a majority of the supplies available for delivery against the Board of Trade's futures contracts, according to individuals familiar with the situation. That big a holding could force other traders to bid prices sharply higher on both cash and futures markets in efforts to satisfy their obligations, a condition known as a squeeze.

"Stockpiling commodities on the cash market isn't illegal, and such commercial merchants as Ferruzzi, one of the biggest U.S. soybean processors, are permitted under exchange rules to accumulate large futures market positions to hedge against price swings on their inventories.

"Nevertheless, the current shortage of soybeans has made prices especially volatile and has caused supply disruptions for processors industrywide. It also has fueled a months-long dispute between Ferruzzi and other big merchants, particularly Cargill Inc., a commodity concern based in Minneapolis, Minnesota, over the magnitude of

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Ferruzzi's positions."

"But in a statement, Ferruzzi attacked the exchange's order. 'We consider this premature action to undermine the integrity of the contract... as a viable hedge vehicle.'"

"Ferruzzi has taken delivery of large quantities of soybeans against the exchange's futures contracts since last fall, helping to reduce available supplies... Many traders feared that Ferruzzi had decided to force delivery of the soybeans that it controlled in the futures market, rather than closing out the contracts as traders usually do."

416. Kilman, Scott; Nomani, Asra Q. 1989. Soybean rebound expected to vanish after court ruling. *Wall Street Journal.* July 14. p. C1, C12. Western ed.
• ***Summary:*** "A federal judge here [Chicago] refused to block the Chicago Board of Trade's 3-day-old emergency order that requires big traders to liquidate positions in soybean contracts for July delivery. The price of the July soybean contract is expected to fall at the opening of trading today."

Ferruzzi's "immense ownership of July contracts fanned a scare that it might attempt to corner the soybean market if unchecked... A Ferruzzi attorney said the merchant probably won't appeal the federal judge's ruling."

"Before the federal judge, a lawyer for Ferruzzi said the liquidation order is costing the Italian merchant millions of dollars... The board's unusual order forces Ferruzzi to unload a large number of contracts for delivery of soybeans this month. Ferruzzi disclosed in its federal court filing that it owns contracts to take delivery of about 23 million bushels of soybeans... It represents about two-thirds of the contracts outstanding for delivery this month."

"The Board's move is highly controversial... One trader admitted yesterday that soybean prices would have jumped as much as $1.50 a bushel if Ferruzzi had actually taken delivery of the soybeans that backed the July contracts it owns."

417. *Time.* 1989. Ferruzzi's big pot of beans. 134(4):41. July 24.
• ***Summary:*** "Clamor is the usual condition in the commodities pits. Last week, however, the soy-bean trading floor of the Chicago Board of Trade erupted in pandemonium as the C.B.O.T. issued an emergency order, its first in a decade, that July futures contracts in excess of 1 million bushels be liquidated. In one day soybean-futures prices plunged 5%, to $6.86 per bushel. Traders speculated that a single buyer was trying to corner the market or drive up prices. The suspected culprit: Ferruzzi Finanziaria, Italy's second largest privately held company and the third largest U.S. soybean processor since it bought Indiana-based Central Soya in 1987.

"Ferruzzi says its purchases–a reported 30 million bushels of soybeans in the past 18 months–were a legal effort to ensure adequate supplies for its customers. Many traders believe Ferruzzi's two largest U.S. rivals, Archer Daniels Midland of Decatur, Illinois, and Cargill of Minneapolis, Minnesota, felt the pinch from rising prices and complained to the C.B.O.T. Said one trader: 'Older, established firms ganged up on the new, foreign kid on the block.' With prices taking a near panic dive, Ferruzzi has already lost an estimated $10 million. Harder hit may be U.S. soybean farmers, who last week saw the value of their total crop fall an estimated $500 million."

418. Fulmer, Richard W. 1989. The preparation and properties of defatted soy flours and their products. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs. Champaign, IL: American Oil Chemists' Society. xii + 575 p. See p. 55-61. Contains 6 figures (graphs and diagrams) and 12 tables. [5 ref]
• ***Summary:*** This review of defatted soy flours discusses the preparation, composition, and uses of the various types. It contains the following tables: 1. Proximate composition of soybeans, soybean meal, and dehulled soybean meal on a dry matter basis. 2. Carbohydrate content of dehulled soybean meal. 3. Typical analysis of soy flour. 4. Processing and nutritional parameters of heat-treated soy flours. 5. Applications of defatted soy flour in foods. 6. Typical analysis of relecithinated soy flour. 7. Functional properties of soy protein products in food. 8. Typical composition of soy flour. 9. Typical analysis of soybean for mineral content. 10. Carbohydrate constituents of dehulled defatted soybean meal. 11. Vitamins of defatted soy flour. 12. Mineral in defatted soy flour. Address: Cargill, Inc., Research Dep., P.O. Box 9300, Minneapolis, Minnesota 55440.

419. Fulmer, Richard W. 1989. Uses of soy proteins in bakery and cereal products. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs. Champaign, IL: American Oil Chemists' Society. xii + 575 p. See p. 424-29. [9 ref]
• ***Summary:*** "Soy products having unique functional [and nutritional] properties have found wide application in bakery foods. These soy products include enzyme-activity soy flour, full-fat soy flour, high-fat (refatted) soy flour, lecithinated soy flour, defatted soy flour, soy grits, and soy bran. Products used to a lesser extent, probably due to cost, are soy protein concentrates and isolates. The characteristics and functionalities of the various soy flours, concentrates and isolates make them desirable components in bakery formulations. Nutrition, cohesion, water/fat emulsification, enzymatic activity, and processability are only a few of the attributes contributed by soy to breads, cakes, rolls, crackers, pancakes and cereal products. The technology for the utilization of soy products in bakery foods is well established

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and reasonably simple."

Tables: (1) Typical analysis of soy flour. (2) Suggested patterns for amino acid requirements and composition of soy protein products. (3) Mg/g total essential amino acids. (4) Processed and nutritional parameters of heat-treated soy flours. (5) Food uses of soybean products. (6) Bakery food applications. (7) Functional and organoleptic contribution of soy proteins to bakery products. (8) Functional properties of soy protein products in foods.

A photo shows Richard Fulmer. Address: Cargill, Inc., Research Dep., P.O. Box 9300, Minneapolis, Minnesota 55440.

420. National Oilseed Processors Association. 1989. Yearbook and trading rules 1989-1990. Washington, DC. [iv] + 123 + 11 p. 23 cm.

• ***Summary:*** On the cover (but not the title page) is written: Effective August 1, 1989. Contents: Constitution and by-laws. Officers and directors. Executive office. Members. Associate members. Standing committees. Trading rules on soybean meal. Appendix to trading rules on soybean meal: Official methods of analysis (moisture, protein, crude fiber, oil {only method numbers listed}), sampling of soybean meal {at origin} (automatic mechanic sampler, pneumatic probe sampler, probe sampler), sampling of soybean meal (at barge loading transfer facilities), official weighmaster application, semi-annual scale report, certification of installation of automatic sampler & mechanical divider (at origin), semi-annual certification of automatic sampler & mechanical divider (at origin), certification of installation of automatic sampler & mechanical divider (at barge loading transfer facility), semi-annual certification of automatic sampler & mechanical divider (at barge loading transfer facility), official referee laboratories (meal), official NSPA soybean meal sample bag. Soybean meal export trading rules: Minimum blending procedures for export meal blended at ports, sampling of soybean meal (at vessel loading facilities), weighing of soybean meal (at vessel loading facilities), certification of installation of automatic sampler & mechanical divider (at vessel loading facility), semi-annual certification of automatic sampler & mechanical divider (at vessel loading facility), semi-annual certification of scales at vessel loading facilities. Trading rules on soybean oil. Sales contract. Definitions of grade and quality of export oils. Soybean lecithin specifications. Appendix to trading rules on soybean oil: Inspection, grading soybean oil for color (NSPA tentative method), methods of analysis (A.O.C.S. official methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses; soap stock, acidulated soap stock and tank bottoms (only method numbers listed), official weighmaster application, semi-annual scale report, official referee chemists (oil). Soybean oil export trading rules. Uniform soybean oil export contract. Foreign trade definitions (for information purposes only) Appendix 1.

The section on officers, executive committee, and board of directors (p. 7-8) gives the name, company affiliation, and phone number of each person. Officers (executive committee)–Chairman: James W. Lindsay, Ag Processing Inc a cooperative [AGP], Vice Chairman: C. Lockwood Marine, Central Soya Co., Inc. Secretary: John March, Cargill, Inc. Treasurer: John Burritt, National Sun Industries, Inc. Immediate past chairman: John G. Reed, Jr., Archer Daniels Midland Co.

Executive staff: President: Sheldon J. Hauck. Executive vice president: Brose A. McVey.

Board of directors (alphabetically by company; each member company may have up to two representatives on the board; only the first of these may vote): James W. Lindsay & William C. Lester, Ag Processing Inc a cooperative. John G. Reed, Jr. & Michael D. Andreas, Archer Daniels Midland Co. John March & Thomas O. Palmby, Cargill, Inc. C. Lockwood Marine & David H. Swanson, Central Soya Co., Inc. David B. Mulhollem & Bernard Steinweg, Continental Grain Co. Ian White & Donald G. Foster, Elders Oilseeds Inc. Merritt E. Petersen & Stan Eichten, Honeymead Products Co. John Burritt & Jeff Berkow, National Sun Industries, Inc. John M. Wright & Henry E. O'Bryan, Owensboro Grain Co., Inc. Sewell L. Spedden & William Bohan, Perdue Incorporated. Paul D. Otto & J. Richard Galloway, Quincy Soybean Co. James K. Smith & Richard E. Bell, Riceland Foods, Inc. Thomas L. Harper, Southern Soya Corp. D. Daryl Houghton & P. Coleman Townsend, Townsends, Inc.

Executive office, Washington, DC: President, Sheldon J. Hauck. Executive vice president: Brose A. McVey. Administrative asst.: Steven C. Kemp. Legislative asst.: Elizabeth A. Loudy. General counsel: Elroy H. Wolff, Sidley & Austin. Special counsel: Richard O. Cunningham, Steptoe & Johnson.

Members (listed alphabetically by company; within each company, first the name of the official Association representative {who is on the Board and votes}, followed by the other personal members listed alphabetically by surname. For example, Archer Daniels Midland Co., the company with the most personal members, has 34. After the name of each personal member is given with his address and phone number. In the listing below, the number of personal members is shown in parentheses after the name of each company, followed by city and state of the various locations): Ag Processing Inc a cooperative (21); Van Buren, Arkansas; Eagle Grove, Iowa; Manning, Iowa; Mason City, Iowa; Sergeant Bluff, Iowa; Sheldon, Iowa; Dawson, Minnesota; St. Joseph, Missouri. Omaha, Nebraska. Archer Daniels Midland Co. (23); Archer Daniels Midland Co. (24); Little Rock, Arkansas; Augusta, Georgia; Valdosta, Georgia; Decatur, Illinois; Galesburg, Illinois; Granite City, Illinois; Taylorville, Illinois; Frankfort, Indiana; Des

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Moines, Iowa; Fredonia, Kansas; Destrehan, Louisiana; Mankato, Minnesota; Red Wing, Minnesota; Kansas City, Missouri; Mexico, Missouri; Clarksdale, Mississippi; Fremont, Nebraska; Lincoln, Nebraska; Fostoria, Ohio; Kershaw, South Carolina; Memphis, Tennessee. Cargill, Inc. (20); Osceola, Arkansas; Gainesville, Georgia; Lafayette, Indiana; Cedar Rapids, Iowa; Des Moines, Iowa; Iowa Falls, Iowa; Sioux City, Iowa; Washington, Iowa; Bloomington, Illinois; Chicago, Illinois; Wichita, Kansas; Burnsville, Minnesota; Minneapolis, Minnesota; South Savage, Minnesota; Wayzata, Minnesota; Kansas City, Missouri; Fayetteville, North Carolina; Raleigh, North Carolina; Sidney, Ohio; Memphis, Tennessee; Chesapeake, Virginia. Central Soya Co., Inc. (13); Gibson City, Illinois; Decatur, Indiana; Fort Wayne, Indiana; Indianapolis, Indiana; Belmond, Iowa; Bellevue, Ohio; Marion, Ohio; Delphos, Ohio; Chattanooga, Tennessee. Continental Grain Co. (8); Guntersville, Alabama; Chicago, Illinois; New York City, New York. Elders Oilseeds Inc. (3); Culbertson, Montana; Blaine, Washington. Honeymead Products Co. (3); Mankato, Minnesota. National Sun Industries, Inc. (3); Minneapolis, Minnesota. Owensboro Grain Co., Inc. (4); Owensboro, Kentucky. Perdue Incorporated (4); Salisbury, Maryland; Cofield, North Carolina. Quincy Soybean Co. (6); Helena, Arkansas, Quincy, Illinois. Riceland Foods, Inc. (7); Stuttgart, Arkansas. Southern Soya Corp. (2); Estill, South Carolina. Townsend's Inc. (2); Millsboro, Delaware.

Associate Members: ADM Agri-Industries Ltd., Windsor, Ontario, Canada. Beatrice / Hunt-Wesson, Fullerton, California. Best Foods, a Unit of CPC International Inc., Englewood Cliffs, New Jersey. Bestel Inc., Minneapolis, Minnesota. C&T Refinery, Inc., Richmond, Virginia. Con Agra Poultry Co., El Dorado, Arkansas. Conti-Quincy Export Co., New York City, New York. Louis Dreyfus, Wilton, Connecticut. Empire Kosher Poultry, Inc., Mifflintown, Pennsylvania. Garnac Grain Co., Overland Park, Kansas. Goldman Sachs–J. Aron Div., New York City, New York. K&L Feeds, Inc., Selinsgrove, Pennsylvania. Kraft Food Ingredients Corp., Glenview, Illinois; Memphis, Tennessee. Krohn Trading Limited Partnership, New Orleans, Louisiana. Lever Bros Company, Inc., New York City, New York. Overseas Commodities Corp., Minneapolis, Minnesota. Pilgrim's Pride Corp., Pittsburg, Texas. Pillsbury Co. (The), Overland, Kansas; Minneapolis, Minnesota. Procter & Gamble Co., Cincinnati, Ohio. Purina Mills, Inc., St. Louis, Missouri. Ralston Purina Co., St. Louis, Missouri. Schouten International, Inc., Minneapolis, Minnesota. A.E. Staley Manufacturing, Decatur, Illinois. Alfred C. Toepfer International, Inc., New York City, New York (Knud Winkelman). Tradecom, Inc., Boca Raton, Florida. Van Den Bergh Foods Co., Chicago, Illinois.

Standing committees: For each committee, the function of the committee, the names of all members (with the chairman designated), with the company and company address of each are given–Crusher committees: Canola, flaxseed, safflower seed, sunflower seed. International trade policy. Soybean meal trading rules. Soybean oil trading rules. Safety, health, and loss prevention. Technical. Address: 1255 Twenty-Third St., N.W., Washington, DC 20037. Phone: 202/452-8040. Telex: 248959. Fax: 202/833-3636.

421. McElfresh, Dinah. 1989. Recent developments at the Soy Protein Council (Interview). *SoyaScan Notes.* Dec. 27. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The Soy Protein Council now has only 3 members: ADM, Cargill, and Central Soya. The last to leave was Grain Processing Corp. in 1987. Ralston Purina left because they wanted to focus on isolates and dues dollars were being spent more on generic promotion. They had previously been very active. SPC is on good terms with Ralston and still works with them occasionally on regulatory issues. Before the recent spate of mergers and acquisitions, the board had directed SPC to do some promotional activities. Now with the limited membership the board has advised that they want to focus on monitoring and tracking regulatory issues, mainly in the USA and mainly on labeling of consumer products. They are working with USDA and FDA on review. The institutional market continues to be strong and acceptability is high.

SPC is now totally independent of NSPA/NOPA and has been for many years. It used to be a committee of NSPA and she thinks it became independent in 1971 at the time the committee became the Food Protein Council. The last news release by SPC was when FNS (USDA's Food & Nutrition Service) opened the School Lunch Program to all vegetable proteins.

There used to be Associate Members like Lipton and Quaker Oats and others that used the products. They were not voting members put they participated in meetings. This was discontinued in the 1970s. Address: 1255 Twenty-Third St., N.W., Washington, DC 20037. Phone: 202-467-6610.

422. *Yearbook and Trading Rules.* 1989-2000. Serial/periodical. National Oilseed Processors Association. Annual.
• ***Summary:*** Preceded by: Year Book and Trading Rules. Issued annually to all members of the association. The 1981-82 Year Book, for example, was spiral bound and 23 cm high. The last published yearbook was 2000-2001. Thereafter, most of the information appeared on the association's website nopa.org.

Letter (e-mail) from Kathy Pennington, office administrator of NOPA. 2005. Aug. 15. NOPA no longer publishes the Yearbook & Trading Rules. In 2003, when she joined NOPA, it was available online only with purchase. Beginning in 2004 NOPA made the trading rules available to all on its website. Names and contact information for the officers and board members, are listed under "About us–Board and staff. The member companies names,

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headquarter addresses, headquarter phone numbers, and weblinks are under Membership." The detailed membership roster (contact information, committee membership, etc.) is available to Members Only. HOPA has no extra printed copies at all; they have only one copy of each Yearbook for their records. Address: 1800 M. St., N.W., Washington, DC 20036.

423. Kreitlow, Bert. 1990. Cargill: C.R. [Cedar Rapids] plants still vital to 125-year-old company. *Cedar Rapids Gazette* (*Iowa*). May 6.
• ***Summary:*** Cargill, the nation's largest privately-held corporation, has a reputation for secrecy. Started 125 years ago in what is today a ghost town in Winneshiek County, Cargill reported 1988 revenues of $43 billion, according to a Forbes magazine survey. In Cedar Rapids, Cargill owns three processing plants and an analytical laboratory; worldwide they own 800 plants or offices in 55 countries. Yet their corn and soybean operations both started in Cedar Rapids, where Cargill claims a total investment of more than $165 million, a work force of 320 people, and a payroll of $9 million/year.

Cargill has two soybean processing plants in Cedar Rapids, one at 411 6th St. NE along I-380 and the other at 1010 10th Ave., S.W. In 1943 Cargill first moved into grain processing when it bought the Iowa Milling Co., a soybean processing plant in Cedar Rapids owned by Joe Sinaiko. In 1944 the plant burned down. So in 1945 Cargill bought a plant owned by Honeymead Products Co. at the present location of its plant on the west side of Cedar Rapids–according to Cargill archives. Since 1965 that plant, crushing a relatively small 7.5 million bushels a year, has been producing mainly soybean flour, meatless bacon bits, and other soy products for the food industry.

In 1967 Cargill again bought plants from Joe Sinaiko–a second soybean plant and its first ever corn mill for a total of $10 million–the largest deal in Cargill's history. This plant on the east side of Cedar Rapids near I-380 crushes 17.7 million bushels/year of soybeans; the meal goes mainly to area manufacturers of livestock feed while the oil is used by processors of vegetable oil. The corn plant has a capacity of 70,000 bushels/day.

Cargill considers Cedar Rapids a good location for these three plants; the Mississippi River is nearby, as is good road transportation, and local farmers supply plenty of corn and soybeans.

Cargill's soybean plants in Cedar Rapids supply mainly the U.S. domestic market, without much export business. The decline in U.S. soybean exports in recent years has idled Cargill plants during the last 20 years, including one in Washington, Iowa.

424. Bailey, Jeff. 1990. Plains giant: What makes ConAgra, once on brink of ruin, a Wall Street favorite? Ten years of profit increases, shrewd food acquisitions led up to Beatrice deal. Tornado spares the directors. *Wall Street Journal*. June 13. p. A1, A4.
• ***Summary:*** ConAgra, a company which is not glamorous or well known, mills flour, corn and oats, sells fertilizer and frozen foods, and raises beef, chicken and catfish. However, last week it agreed to buy Beatrice Inc. for $1.34 billion, making it the 2nd largest U.S. food processor after Philip Morris' Kraft General Foods. Charles M. Harper, ConAgra's aggressive chairman, will soon own the Chun King brand.

The company began in 1919 as Nebraska Consolidated Mills Co., with 4 small mills. In the early 1970s, ConAgra suffered big losses on the futures market when it tried to hedge its soybean meal inventories, used to feed its chickens. In 1974, when Mr. Harper became CEO, many analysts didn't think the company would last long. But since that time he has "built ConAgra into a food industry giant with $15 billion in revenues and 19 straight years of earnings increases. A share of ConAgra bought for $3 in 1974 when Mr. Harper took over would now be worth–following stock splits–$430." ConAgra recently passed Cargill to become America's 2nd largest meat packer.

A portrait illustration shows Charles M. Harper. A pie chart shows ConAgra's business segments. Graphs show: (1) Annual revenue in billions of dollars from 1985 to 1990. (2) Annual return on common stockholders equity, 1985-1989 (avg. 23%). (3) The value of ConAgra's stock compared with the Dow Jones Food Index. Address: Staff reporter.

425. Fisher, Rita C.; Peterson, Julia C.; Beecher, John W.; Johnson, Jane S.; Boast, Carol. 1990. Agricultural information resource centers: A world directory–1990. Urbana, Illinois: IAALD (International Assoc. of Agricultural Librarians and Documentalists) and CTA (Centre Technique de Cooperation Agricole et Rurale = Technical Center for Agriculture and Rural Cooperation; of the European Economic Community). xxviii + 641 p. 29 cm. Supported by Cargill Foundation.
• ***Summary:*** This directory is produced at the University of Illinois using InMagic software. Soyfoods Center is listed as #3209 (p. 385-86).

"For his many contributions to the International Association of Agricultural Libraries and Documentalists this book is dedicated to Dr. Ernest Mann."

"The publication of this directory has been generously supported by the Cargill Foundation." Address: Urbana, Illinois.

426. *SoyaScan Notes.* 1990. What is USAIN–United States Agricultural Information Network (Overview). Nov. 7. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** USAIN was founded in 1990. As of Sept. 1990 the organization has about 40 institutional members and 200 individual members. Julia Peterson, manager of the Cargill Information Center in Minneapolis, Minnesota, is president.

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John Beecher, former head of the agriculture library at the University of Illinois and now at North Dakota State Univ. is director. The purpose of USAIN is to provide a national forum through which agricultural librarians can address critical issues related to the collection, access, and delivery of agricultural information. The inaugural meeting was held on 7-9 Nov. 1990 at the University of Illinois at Urbana-Champaign.

427. Kilman, Scott. 1991. Cargill Inc. chooses Hutter as president, but the heir-apparent mystery remains. *Wall Street Journal.* Feb. 5. p. B4.
• ***Summary:*** Heinz F. Hutter, age 61, an executive vice president and chief administrative officer, was named president and chief operating officer of Cargill Inc., the huge grain and commodity firm headquartered in suburban Minneapolis. Mr. Hutter, a Munich-born grain trader, succeeds James R. Spicola, who died of cancer last week.

The big question is: Who will succeed Whitney MacMillan, age 61, Cargill's chairman and CEO for 14 years, and the great grandson of company founder W.W. MacMillan.

Cargill started as a frontier town grain elevator shortly after the Civil War and grew into one of the world's largest grain traders and processors. It now buys "crops from farmers worldwide and transports them through a network of terminals, rail cars, barges, and ocean vessels to food companies and governments. It is one of the largest exporters of grain to the Soviet Union."

"Mr. MacMillan's strategy has been to expand Cargill into food processing and industrial commodities... Cargill is believed to have a 20% share of the beef-processing industry and a 30% share of the U.S. corn refining and soybean processing industries." It is also the 3rd largest U.S. flour miller. Address: Staff Reporter, Wall Street Journal.

428. CSP Foods Ltd.; Central Soya of Canada Ltd. 1991. CSP Foods Ltd. and Central Soya of Canada Ltd. have signed a letter of intent to purchase the edible oils business of Canada Packers Inc. (News release). Canada. 7 p. March 27.
• ***Summary:*** "The purchase includes edible oil refineries in Montreal, Toronto and Wainwright, Alberta, and an oilseed crushing business at Fort Saskatchewan, Alberta, and a seed gathering station at Humboldt, Saskatchewan. A 50% ownership in Prairie Margarine Inc. of Edmonton is also part of the deal... The edible oil business of Canada Packers employs 400 people and generated consolidated sales of approximately $250-million in the fiscal year ended March 31, 1990.

"CSP Foods Ltd. is jointly owned by Saskatchewan Wheat Pool and Manitoba Pool Elevators and is the major processor of canola and sunflower seed in western Canada. It operates crushing and refining facilities at Altona, Manitoba and Nipawin, Saskatchewan. CSP Foods has a crush plant at Harrowby, Manitoba, a refinery at Dundas, Ontario and a 50% ownership in Prairie Margarine Inc. of Edmonton, Alberta.

"CSP Foods is a leading marketer of canola oil and meal products into the North American marketplace. CSP Foods employs 290 people and generated consolidated sales of approximately $200 million in the fiscal year ended March 31, 1991.

"Central Soya of Canada Limited operates a soya/canola crush plant at Hamilton, Ontario and is a subsidiary of Central Soya Company Inc."

"This acquisition will combine three Canadian companies into one. On a North American basis, the new company is estimated to have three percent of the Edible Oils market. This compares to US market shares for ADM, Cargill and Bunge of 33, 20 and 12 percent, respectively...

"Canola is Canada's major oilseed crop, accounting for 65-70 percent of Canadian oilseed production. It is second only to wheat in terms of gross farm revenue, averaging $850-900 million per year. Japan is the predominant export market for canola seed, taking up to 90 percent of total exports and up to 60 percent of canola production. The balance of the crop is sold to the domestic crushing sector, most of which is located in Western Canada."

"Central Soya of Canada Ltd. operates a soy/canola crush plant at Hamilton, Ontario with a soya crush of 365,000 tonnes a year (1,270 tonnes a day) and a canola crush of 227,000 tonnes a year (700 tonnes a day). The crushing canola and soya can take place simultaneously."

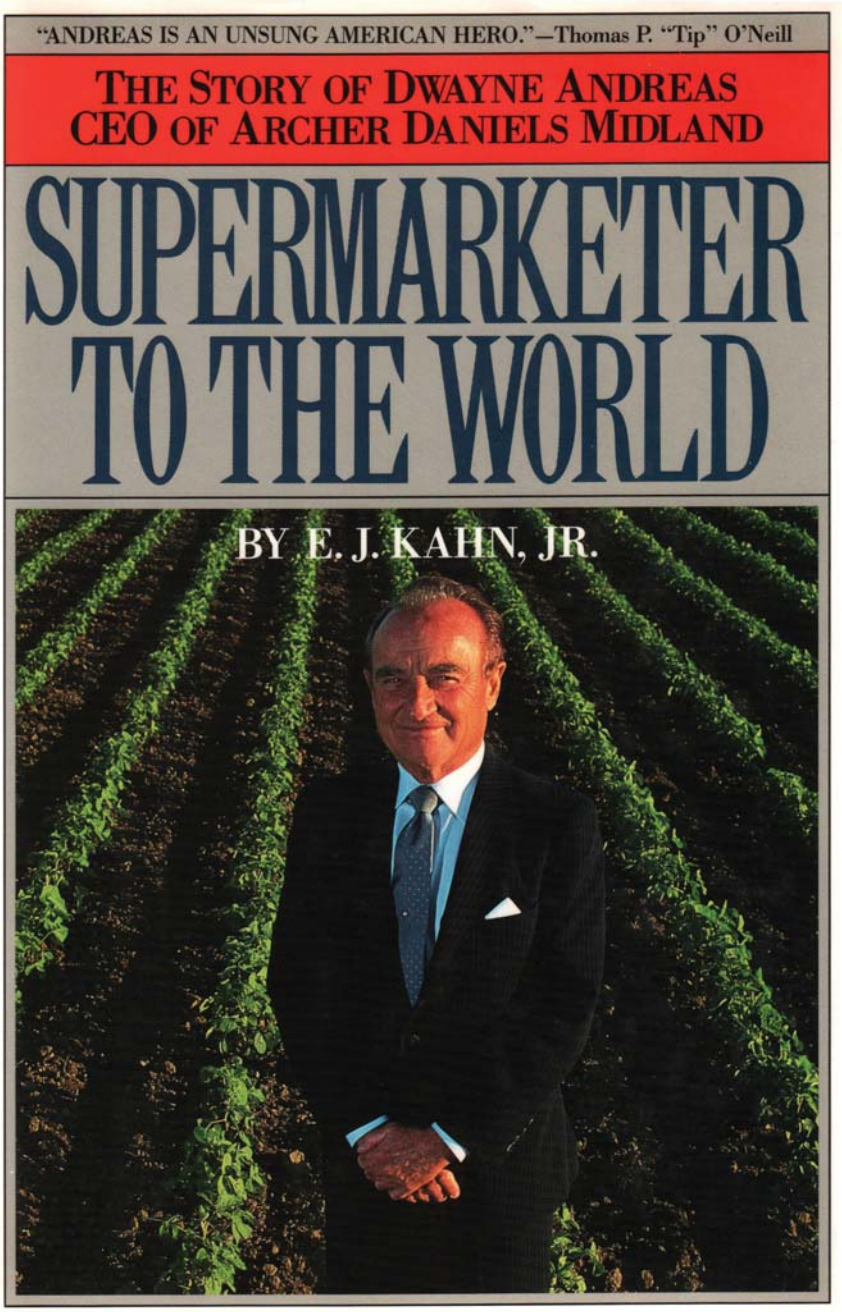
Also gives details on: The agreement in principle. Canada Packers Ltd. Assets. CSP Foods Ltd. current operations. Central Soya of Canada Ltd. current operations. New company structure (CSP Foods and Central Soya will each own 50% of the new company and both will provide three Board members or partners to the new company). Rationale for the purchase and merger. The impact on the market place. The impact on producers. Chart of assets of the 3 companies. One map shows the new company's oilseed refineries in Canada, and another map shows its oilseed crushing plants.

429. Henkoff, Ronald. 1991. Cargill's heir-raising future. *Fortune.* July 1. p. 70. *

430. Meuser, Friedrich; Suckow, Peter. eds. 1991. Soja in Lebensmitteln: Vortraege 2. Hamburger Soja-Tagung [Soya in foods: Proceedings of the Second Hamburg Soy Protein Conference]. Berlin: Technische Universitaet Berlin, Institut fuer Lebensmitteltechnologie und Gaerungstechnologie–Getreidetechnologie. 171 p. Held Oct. 1989 in Hamburg, Germany. No index. 24 cm. Series: Schriftreihe aus dem Fachgebiet Getreidetechnologie No. 9. [Ger]
• ***Summary:*** The first conference was held 4 years earlier.

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Contains a foreword plus 14 papers by various authors, each cited separately. This conference was sponsored by Edelsoja GmbH (Hamburg, Germany), the American Soybean Association (Hamburg), and Cargill B.V. (Netherlands). Address: Berlin.



431. Kahn, E.J., Jr. 1991. Supermarketer to the world: The story of Dwayne Andreas, CEO of Archer Daniels Midland. New York, NY: Warner Books. viii + 320 p. Illust. Index. 24 cm.

• ***Summary:*** The colorful, carefully researched story of Dwayne Andreas, the 73-year old CEO of the largest agricultural processor in the USA. The success he has made of ADM makes "the better-known success stories of Xerox and IBM look like kid's stuff. Andreas has multiplied revenues 25 times over (from $323 million to $7.9 billion) since taking the Archer Daniels Midland helm in 1965–en route converting his own $1,500 investment into $180 million. His sales staff produce at an annual rate of three quarters of a million each. He doubles ADM profits every five years with the regularity of a Swiss clock. And since the Bush election, he's hoisted revenues by about a billion dollars a year. All of this with long-term debt 30 percent less than cash on hand...

"But there's a lot more than numbers to Dwayne Andreas. He's known by insiders as the new Armand Hammer. When Mikhail Gorbachev met Tip O'Neill, the Soviet premier greeted him with, 'I hear you know my friend Dwayne Andreas.' He is an almost mystical guru to the power elite, yet he is little understood by professional analysts."

Page 59: "Dwayne's father and mother, Reuben Peter Andreas and Lydia Barbara Stoltz, were both born in 1882 to strict Mennonite families, a couple of months apart and in Illinois towns–he in Midgeville, she in Sterling–a few miles apart. They were married in Sterling on Nov. 27, 1902, and not long afterward moved to Minnesota. She was... small in stature. The tallest of her five sons stood at five feet eight inches... While raising the boys and a single girl–Dwayne, born on March 4, 1918, was next to the last of the lot..." Lydia Andreas died in 1938 on Mother's Day [the second Sunday in May].

Page 70: In 1935 Dwayne entered Wheaton College in Illinois. But near the end of his sophomore year he dropped out, concluding his formal education. Moreover he got married when he was 18 [ca. 1937] and she 3 years older, to Bertha Benedict, whom he met at Wheaton. "That youthful union was short-lived and ended in divorce, but it did produce daughter Sandra, later McMurtrie and Mother Teresa's faithful acolyte." Note: Sandra first went to India in 1981 with a friend who worked for Catholic Relief Services. In Calcutta they met Mother Teresa–the celebrated Catholic nun.

Note 2. After Bertha and Dwayne Andreas were divorced, Bertha later married B.C. Kruidenier, to whom she remained married until her death–as shown by her obituary

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(cited elsewhere).

Page 71: Another and ultimately more important reason for dropping out of college was to go into business with his father. Since 1927 the firm's name had been "Reuben's & Son" [or "R.P. Andreas & Son" the son being Albert]. In the mid-1930s, Reuben took in 3 more sons, Osborn, Glenn and Dwayne and the company was renamed. Lowell, the youngest of the sons, who was still in high school, came in later. "Dwayne, not yet twenty, was put in charge of sales promotion," and soon annual sales reached $1 million.

In 1936 the Andreases moved their family milling company (named R.P. Andreas & Sons) to Cedar Rapids, Iowa (from Lisbon, Iowa), and renamed it Honeymead Products Co. Dwayne "came under the tutlelary spell of one of his Jewish mentors, Joseph Sinaiko, a leading soybean processor." The two became close personal friends. Joe, whose was 27 years older than Dwayne, owned Iowa Milling Co. in Cedar Rapids. Years later Andreas said of Sinaiko: "A very classy guy, and the best soybean processor of that era."

In 1936, Lowell Andreas was in charge of soybean processing at Honeymead and Dwayne ran sales and transportation. But Dwayne soon became executive officer.

In Aug. 1937 the Iowa Securities Commission authorized Honeymead to do a public stock offering. The company's net worth was appraised at $24,200. The Andreases kept most of the stock for themselves–but the value rose rapidly. Also in 1937 Dwayne got a pilot's license and bought a Ercoupe plane–so he could expand his sales territory and decrease the time it too him to cover it.

Page 78: From 1938 to 1945 Honeymead grew steadily, with Dwayne at the helm. Then in June 1945 Dwayne's draft classification was changed to 1A. In anticipation of being called into the military, he sold 60% of the family's Honeymead holdings to Cargill. Dwayne was now age 27 and his personal sale of the proceeds from the sale was about $1.5 million. Soon the war ended and Dwayne was not drafted, so Cargill invited him to become general manager of the former Honeymead plant at Cedar Rapids, Iowa–with a salary of $25,000 a year. Dwayne accepted the offer and ended up working for Cargill for seven years, eventually rising to vice president in charge of soybean and linseed-oil operations.

Andreas has said that "Except for nuclear war, world hunger is the world's biggest threat to peace."

Page 80: "Cargill was based in Minneapolis and, while there Andreas, by now separated from his [first] wife, became an increasing well known bachelor about town." He met and began to court Inez Snyder, a diminunitive (5'2") blonde from Earlham, Iowa. Her first marriage broke up and she had a five-year-old daughter named Terry. Before the year was out [year not given, around 1947] Dwayne was divorced and Inez and he were married.

Page 129: Michael Andreas is the only child of Dwayne and Inez, who by 1991 had been married for a little more than 40 years. By 1990 Dwayne and Inez had nine grandchildren [p. 123].

On the cover is a nice color photo of Andreas standing in front of a field of soybeans. Andreas was born in 1918. The author, Ely Jacques Kahn, was born in 1916. Portions of this book appeared, in considerably, different form, in *The New Yorker.* Address: Writer for The New Yorker.

432. Dreeszen, Dave. 1991. AGP plant would have big impact. *Sioux City Journal* (*Iowa*). Dec. 12. p. A1, A14.
• ***Summary:*** AGP has proposed building a $300 million corn processing plant in Union County, South Dakota. The company announced Tuesday it has signed a long-term option to buy land just north of North Sioux City.

Note: This proposal was discussed in this newspaper in articles during 1992 dated Jan. 25 (p. A3), Feb. 19 (p. A3), March 12 (p. A14), and March 20 (p. A1, A14), then during 1993 on Feb. 20 (p. A10), and May 1 (p. A3). The plant was apparently never built, in part because of expected competition from Cargill, that announced in 1992 that it would build a plant in Blair, Nebraska, about 30 miles north of Omaha. Address: Journal staff writer.

433. Associated Press (AP). 1992. Proposed Cargill plant with compete with AGP operation. *Sioux City Journal* (*Iowa*). March 12. p. A14.
• ***Summary:*** Cargill's corn-milling division plans to build a corn processing plant (its 5th) in western Iowa or Eastern Nebraska. It would produce high fructose corn syrup and polymers used in biodegradable products. AGP of Omaha, Nebraska, is considering building a $300 million corn wet-milling plant in extreme southeastern South Dakota. Cargill and ADM are the two biggest U.S. corn processors.

434. Johnson, Lawrence A.; Meyers, D.J.; Burden, D.J. 1992. Soy protein's history, prospects in food, feed. *INFORM* (*AOCS*) 3(4):429-30, 432, 434, 437, 438, 440, 442-44. April. [54 ref]
• ***Summary:*** "This is the second part of a review that chronicles the individuals and the historical and economic factors noteworthy in the development of soy protein as food and feed ingredients." Contents: Introduction. Early Western food uses (whole and defatted soy flour, enzyme-modified isolated soy proteins as whipping agents, whipped toppings, cereal-soy blends). Soy flour and grits. Protein concentrates and isolates (Griffith Laboratories, Central Soya Co., Mead Johnson and Co., Central Soya). Dairy analogs (Dr. Harry W. Miller, Loma Linda Foods, Mull-Soy and Borden, Vitasoy, Edensoy, Worthington Foods and Soyamel, Prosobee and Mead Johnson, Rich Products and Chill-Zert, Tofutti). Spun fibers (Robert Boyer and the Ford Motor Co., Temptein, Worthington Foods, Bontrae, Bac*O's, Bac-O-Bits, Miles Laboratories, Morningstar Farms). Textured soy protein and meat analogs (W. Atkinson, ADM and TVP,

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General Mills and frozen Bontrae, the U.S. School Lunch Program). Nutritional advances in soy products. Today's world soybean and soy protein production (consolidation among manufacturers of modern soy protein ingredients: ADM, Cargill, Central Soya Co., Protein Technologies International, A.E. Staley Mfg. Co.). Future of soy protein products.

Tables show: (1) Soy meal consumption in the USA by type of animal: Poultry 41.1% of total 18.9 million metric tons, swine 27.4%, beef cattle 9.0%, dairy cattle 9.0%, other livestock 9.5%, human food 3.2%, industrial 0.5%. Thus, industrial (nonfood, nonfeed) uses for soybeans presently comprise no more than 0.5% of the protein produced from soybeans grown in the United States. (3) U.S. companies supplying protein in 1948-50 versus 1990 (industrial and edible flours, concentrates, and isolates). 23 companies then vs. 5 in 1990.

Note: Talk with Ed Milligan of EMI by phone. 1992. May 5. This article contains some misleading information. It refers to an article by Ken Becker written in 1971. In 1958-59 USDA developed a laboratory prototype of flash desolventizing. In 1959 they contacted EMI corporation in Des Plaines to commercialize the flash desolventizing system for production of light-colored, edible soybean flakes, for soy flour and grits, with a maximum PDI (protein dispersibility index). At that time Ed Milligan was just a newly hired member EMI, which undertook the project. Ed designed and installed the world's first commercial flash desolventizing system for Honeymead Products Corp. in Mankato, Minnesota, in 1960. Note that this system was used to make food, rather than feed. All but 2 systems have been used exclusively to make foods. All such systems produce a flake with a very light color and controlled PDI, whereas a DT (desolventizer-toaster) produces a golden colored flake. He is leaving for India in a few weeks to commission EMI's 22nd such unit. He has designed, installed, and started every one of the 22. Address: Center for Crops Utilization Research, Iowa State Univ., Ames, Iowa 50111.

435. Frost & Sullivan Inc. 1992. The European market for protein ingredients. New York, NY: F&S. 383 p. #E1712/P. 98 tables. 6 figures.
• ***Summary:*** "Sales of protein ingredients to the food industry in Western Europe in 1991 amounted to $1.3 billion. This is expected to increase to $1.5 billion by 1996." Contents: Executive summary. 1. Introduction, scope and methodology. 2. Protein ingredients–Technology, economics and trends: Introduction, vegetable proteins (soy flour and grits, soy protein concentrates, soy protein isolates, textured soy proteins, wheat gluten), animal proteins (milk-based, egg-based, other, single cell proteins incl. yeast and mycoproteins). 3. End-user markets for protein ingredients–Industry requirements, historical and future developments: Introduction, nutrition claims, the food industry (meat and meat products, dairy products and desserts, bakery and cereal products, specialty infant and health food, pet foods, miscellaneous foods). 4. The markets for protein ingredients in Western Europe: Germany (For each country is given: The food industry, protein ingredients off-take by the food industry, sales of protein ingredients to the food industry, volume off-take of protein ingredients by the food industry, sales of protein ingredients by type), United Kingdom, France, Italy, The Benelux countries, Spain and Portugal, other EC countries, other Western European countries. 5. Profiles of major suppliers of protein ingredients in Western Europe: Includes Aarhus Oliefabrik, Archer Daniels Midland Co., British Arkady Co., BSN, Cargill, Central Soya, Dalgety, Danmark Protein, Eridania/Beghin-Sey [sic, Say], Loders Croklaan, Lucas Meyer, Nattermann Phospholipid, Nestle, Protein Technologies, International, RHM Ingredients Ltd., Solnuts BV, Unilever Group. Appendices. A. Names and addresses of suppliers of protein ingredients in Western Europe. B. Company index. Address: 106 Fulton St., New York, NY 10038. Phone: 212-233-1080.

436. *SoyaFoods* (*ASA, Europe*). 1992. Cargill relocates European headquarters. 3(2):2. Spring.
• ***Summary:*** "Cargill plc has moved from Hammersmith, London to Knowle Hill Park, Fairmile Lane, Cobham, Surrey KT11 2PD, UK, tel: 932 861000, fax: 932 861200."

437. Henkoff, Ronald. 1992. Inside America's biggest private company: Cargill, the grain trading dynasty, faces tumultuous change: a nonfamily CEO and a move into higher-value businesses. Should it consider going public? *Fortune.* July 13. p. 83-90.
• ***Summary:*** Revenues last year were $49.1 billion. Address: Reporter Associate.

438. Davis, Susan. 1992. Tank up with SoyDiesel: Clean Air Act pumps interest in alternative fuel. *Soybean Digest.* Aug/Sept. p. 10-11.
• ***Summary:*** Leon Schumacher of the University of Missouri–Columbia, tests and drives a Dodge pickup with "Powered by Soybean Oil" printed on the tailgate. It turns plenty of heads and evokes the "thumbs up" sign. What started as a simple research project has exploded into a national campaign. "SoyDiesel is made by esterifying degummed soybean oil. As requirements of the Clean Air Act of 1990 start to take effect, "everything from boats to buses will be required to reduce emissions." Tests have shown that SoyDiesel can cut pollution by up to 86%.

Bill Ayres, vice president of Interchem Industries, has a pilot plant manufacturing SoyDiesel at Leawood, Kansas. It sells for $2.50/gallon compared to $1 for regular diesel. "Interchem has 15 million gallons of SoyDiesel available and plans to build a new plant for additional production. Cargill, ADM, and Ag Processing [AGP] are exploring building

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esterification plants near soybean processing plants."

One problem with SoyDiesel is that it jells at 28 degrees F, according to Bill Ayres.

Ferruzzi-Montedison is building a plant in Livorno, Italy, to make 18 million gallons a year of Diesel-Bi.

A sidebar, titled "Projects hit the road," discusses: Sunrider: United Soybean Board is "providing 17,500 gallons of 100% SoyDiesel and funding a $60,000 educational program." Ferruzzi-Montedison is testing two buses in Sioux Falls, South Dakota. During the summer Olympics in Barcelona, Spain, vehicles will use Diesel-Bi. Bi-State Industries fuels 60 buses in the greater St. Louis, Missouri, area with a blend of 25% soy and 75% diesel. MSMC is funding a project with five tractors. "More than 100 maintenance vehicles at Lambert International Airport in St. Louis, Missouri, run on a 30% methyl soyate blend. Missouri, Ohio, Michigan, and Nebraska use SoyDiesel in demonstration vehicles."

A photo shows Kenlon Johannes standing by the rear of a Ford pickup truck. The license plate reads "Soy-Oil."

439. Broehl, Wayne G., Jr. 1992. Cargill: Trading the world's grain. Hanover, New Hampshire, and London: University Press of New England (Dartmouth College). xx + 1007 p. Illust. Index. 24 cm. [500+* ref]

• ***Summary:*** Cargill, one of the world's great multinational commodity trading companies, is one of the largest corporations in the USA, with annual sales of over $44 billion. It is the largest privately owned U.S. company, with almost all ownership in the hands of the Cargill and MacMillan families. In descending order of size in this industry are Cargill, Continental Grain, Louis Dreyfus, and Bunge y Born. All are privately owned, each by a dominant family. Only Cargill has been in the USA from its birth. Though it is now 125 years old, Cargill has had only five CEOs (p. xvii).

The soybean arrives: Cargill purchased and stored some soybeans in 1935 and continued the same small transactions in 1936, though none remained in inventory at the year's end. Cargill began to take notice of soybeans in mid-1936 when the Chicago Board of Trade initiated a soybean futures contract as a new source of revenue. Cargill leadership expressed little interest in soybean processing, which was already in the hands of "big fellows" like ADM, Staley, Allied Mills, Glidden, and Spencer Kellogg & Sons (p. 447).

Cargill's work with soybeans is discussed extensively, starting with Chapter 15, "Cargill in World War II" (p. 617+). In 1942 President Roosevelt persuaded Congress to pass price-control legislation, creating the powerful OPA, the Office of Price Administration. It had a dramatic effect on U.S. agriculture. Meat and poultry were increasingly in short supply, so feed grains took priority over food grains. Corn and even surplus wheat was used as feed. Labor shortages in agriculture led to more mechanization and fertilizer use rose dramatically (p. 618). Soybeans became a key ingredient in animal feeds, and Cargill began purchasing in larger quantities. The OPA ceilings on soybean meal were so low that it was much more profitable for crushers to put their meal into their own feeds, rather than sell it. Against this background, in Jan. 1943, Cargill announced the purchase (for $300,000) of a soybean mill and feed plant, the Iowa Milling Co., in Cedar Rapids, Iowa [from Joe Sinaiko]; the initial push came from Julius Hendel.

Then in Oct. 1943 additional soybean crushing capacity was acquired through the purchase of the Plymouth Processing Mills (capacity: 75 tons/day of soybean meal) of Fort Dodge, Iowa.

Later that same month another soybean crushing plant was purchased–the Illinois Soy Products Company (soybean crushing capacity: 3,900 bushels/day) of Springfield, Illinois. These were small facilities and none used solvent extraction, but they represented a beginning; soybean crushing soon became a major part of for Cargill as the company worked to diversify (p. 665-66).

In May 1945, again with Hendel's leadership, Cargill purchased the Honeymead Products Co. in Cedar Rapids, Iowa. It had a feed plant with a capacity of 300 tons/day and a soybean solvent extraction plant (designed by Allis-Chalmers Co.) which initially had a capacity of 50 tons/day, expanded to 130 tons/day. Cargill called Honeymead their "West Side Plant"–but they forgot to buy the Honeymead name. The Andreas family sold the company because Dwayne Andreas had been classified 1-A in the draft (the highest priority for being drafted). The Andreas family owned the property and Dwayne agreed to join Cargill. Cargill asked the draft board for and received a 3-month deferment. At the end of that time the Pacific war was over. Andreas soon became a vice president of Cargill, the youngest in the company's history. "He thought like an owner" (p. 682, 687). Later, other Andreas family members resurrected the Honeymead name for their new oilseed crushing plant at Mankato, Minnesota (p. 683).

Rocky reconversion after World War II. During World War II there was a major increase in scientific livestock feeding, using nutritionally balanced feeds–in response to the shortage of all feeds. Cargill already owned the profitable Blue Square feed operation, but they wanted to expand it. So in Oct. 1945 Cargill purchased (for $1.6 million) the entire capital stock of Nutrena Mills Inc., a leading Midwest feed manufacturer with three mills (Kansas City and Coffeeville [Coffeyville], Kansas; and Sioux City, Iowa) and a combined capacity of 23,000 tons/month. Nutrena, now 25 years old, was one of the industry pioneers in both feeds and feed sacks (p. 688).

During World War II, the all-out agricultural production in the USA led to record output. Total production of soybeans increased from 78 million bushels in 1943 to 193 million bushels in 1945. Yet Cargill and others had great difficulty in

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obtaining the soybeans they needed. Gilbert C. Fite describes the agricultural revolution that took place during the war (p. 695-96). There was great pressure on government price administrators to loosen or remove controls; when they finally started to do, in May 1946, inflation followed. Julius Hendel wisely remarked: "The cure for high prices is high prices." The ceiling price on soybeans was not removed until 17 Oct. 1946 (p. 703).

Dwayne Andreas has a good idea and receives a $10,000 bonus (p. 704). Nutrena and Honeymead cause organizational problems. Centralization vs. decentralization. Tension between the Grain Division and the Oil Division–especially over soybean purchasing. The Alfred P. Sloan model of decentralized management at General Motors is widely imitated. By the early 1950s Cargill was decentralized (p. 707-712).

Chapter 17, "Korean War and Tradax beginnings." After World War II came the cold war, Truman Doctrine, NATO, and the Korean War. In agriculture, the New Deal policies of the 1930s continued essentially unchanged (p. 737-38). In 1950 Cargill purchased a new oilseed / soybean processing plant (capacity: 700 tons/day) in Chicago for more than $2 million. By 1951 the Oil Division was renamed the Vegetable Oil Division (p. 745). The Cargill Oats Case of May 1954. In Oct. 1954 ADM pleads guilty to CCC allegations. Selling oat futures vs. soybean futures (p. 761). 1952–Dwayne Andreas "resignation" after his unauthorized trip to Russia in April. He went on to an outstanding career, first with his family's company, then as an executive with the company that bought it, the Grain Terminal Association (later called Farmers Union Grain Terminal Association), and finally as CEO and a major owner of ADM. He was replaced by M.D. "Pete" McVay as head of the Oil Division (p. 762-64).

1954–Cargill begins international trading with the move to Montreal of Kerrgill, a subsidiary of Cargill Internacional. It was soon renamed Tradax Canada Ltd. Cargill's headquarters on Lake Wayzata, Minnetonka, Minnesota (p. 774-75).

1953 Jan.–Dwight D. Eisenhower is inaugurated as president. In July 1953 he settled the Korean war. Ezra Taft Benson advocates a new farm policy, a return to a free market economy and flexible price supports (p. 776-77). 1955 Sept.–Julius Hendel retires. He was considered the "dean of grain trading." He had pioneered Cargill's grain laboratory in the 1920s, introduced scientific mixed feeds in the 1940s, and designed Cargill's renowned training program. (p. 782-85).

Eisenhower's second term in office (1956-60) is an era of farm surpluses. The P.L. 480 or "Food for Peace" shipments were an "heroic attempt to insulate some of this production from commercial channels." They totaled over $1 billion each year from 1956 into the 1960s. In 1959 Cargill had sales of $1.089 billion, making it the 34th largest company in the USA (p. 786-87). The Chase Manhattan Bank's consulting report and analysis of Cargill is blunt, credible, very positive but with many important suggestions for change; the soybean was the star of the Oil Division (p. 868-71). Summary of Cargill, 1963-1991 (p. 874-75).

Photos show: (1) Dwayne Andreas ca. 1950 (p. 682). Address: Dartmouth College, Hanover, New Hampshire.

440. Finnerty, Margaret. 1992. Soybeans, cooperatives and Ag Processing Inc. Flagstaff, Arizona: Heritage Publishers, Inc. 178 p. Illust. Index. 28 cm.

• ***Summary:*** This book has big strengths and big weaknesses. Strengths: (1) It contains by far the best history to date of AGP and of each of soybean processing companies that comprised AGP in 1992. This was in part because the book was commissioned by AGP and the author interviewed most of the key players. (2) It contains a wealth of excellent photos and facsimile reprints of articles. Weaknesses: (1) Many key dates are missing, including the dates of articles that were reprinted, and key dates in the history individual companies. (2) In several chapters, the author tells the story of a company without adhering to chronological order; this is most confusing in Part III, "Ag Processing Inc." For example the explanation of "tax credits" (p. 157) comes 3 pages after they were used (p. 154), (2) Truth is sometimes sacrificed for cooperative politics or to make individuals look good. For example, we are not told why it was so important to have the AGP deal closed by 31 Aug. 1931 (p. 161). For the real story, see 2005 interview with Bill Lester.

Contents: Acknowledgment. Introduction. Part I: A long history. Soybeans. Cooperatives (brief history of each, incl. origins of Land O'Lakes in Minnesota Cooperative Creameries, established in 1921; John Brandt became its president in 1923). Part II: Soybean processing and vegetable oil refining. The roots of Ag Processing Inc. Sheldon, Iowa (1943, Big 4). Fort Dodge, Iowa (1939-1943?, Plymouth Processing Mills). Dawson, Minnesota. Van Buren, Arkansas. Sergeant Bluff, Iowa. St. Joseph, Missouri. Manning, Iowa. Mason City, Iowa. Denison, Texas. Eagle Grove, Iowa. Part III: Ag Processing Inc. AGP–Continuing to survive, adapting to change.

Sheldon, Iowa: Started in 1943 by Big 4 Cooperative, a regional cooperative with 2 new expellers bought from French Oil Mill Machinery Co. in Piqua, Ohio. Made Felco Feeds under franchise agreement. Slow to get into solvent extracting. Big 4 was a member of a cooperative named Soy-Cot (headquartered in Chicago, Illinois), which handled the sales of soybean oil from each of the cooperative processing plants to the big vegetable oil refiners such as Kraft, Procter & Gamble, Hunt-Wesson, Safeway, Honeymead, etc. In 1965, Ken McQueen was elected general manager at Sheldon. In late 1965 the Farmers Elevator Service Co. (headquartered in Fort Dodge, Iowa, and known as Felco) merged with Statex (a service cooperative headquartered

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in Omaha, Nebraska). The new organization was named Farmers Regional Cooperative Co. On 1 Oct. 1967 Big 4 merged into Farmers Regional Cooperative Co., Ken McQueen moved from Sheldon to Fort Dodge, as vice-president of Felco, with the Sheldon plant now one of his many responsibilities. Bill Lester [who had started work for Big 4 Cooperative at Sheldon on 15 Aug. 1965] then became the manager of the Sheldon soybean crushing plant. In 1970 [on Jan. 1] Farmers Regional Cooperative Co. (Felco) merged with Land O'Lakes, a Minnesota regional cooperative. Big 4 then became a division of Land O'Lakes. In 1979 the Big 4 name was dropped; the Sheldon facility became the Oilseed Crushing and Grain Marketing Division of Land O' Lakes. By 1983 the Sheldon plant was processing 34,000 bushels/day and employing 90 people. Photos show: (1) Towering concrete silos overlooking the original wooden buildings of the Sheldon processing plant; on the side of one is written: "Big 4 Co-op Processing Assn. Soybean processing. (2) The original expellers at work inside the plant. (3) The Big 4 Feed Plant in Sheldon; it made livestock and poultry feed for Felco. (4) The Big 4 fleet of delivery trucks. (5) Close-up of 5 expellers in a row. (6) Aerial view of the Big 4 soybean processing plant and feed mill. (7) Old buildings and new. (8) Diagrams of the expeller and solvent plants. (9) Ground view of the plant with railroad tracks and cars. (10) The four original managers of the Big 4 plant at Sheldon: Kenneth McQueen, Charles Hanson, Morel Stientjes, and Lee Parmentier. (11-12) Aerial views of the facility in 1991.

Fort Dodge, Iowa. Plymouth Processing Mills began processing soybeans in about 1939-1941, starting with a pair of French expellers. "Soybeans were a lifesaver to the town's economy and to the surrounding countryside." They took the place of oats, when had been grown to feed horses; but then horses were replaced by tractors an cars. On 13 Oct. 1943 this plant (75 tons/day of soybean capacity) was sold to Cargill. On 19 May 1944 a huge tornado destroyed Cargill's 3-story brick soybean processing plant. In 1946 Cargill installed solvent extraction equipment (125 tons/day capacity); the new technology worked side by side with the expellers for more than a decade. In the 1950s the solvent plant was expanded to 250 tons/day and the expellers were retired. In about 1960 Cargill discontinued the feed operations. In 1962 a Rotocel extractor (20 feet in diameter, originally belonging to General Mills in Rossford, Ohio) was installed; it added 400 tons/day of soybean processing capacity. By the mid-1960s the plant capacity was 600 tons/day. In Oct. 1967 the Felco cooperative (headquarters in Fort Dodge, Iowa) merged with Big 4 in Sheldon, Iowa. Felco eventually changed its name to Farmers' Regional Company, headquartered in Fort Dodge. On 1 April 1970 FGDA (a huge co-op headquartered in Des Moines, Iowa) and Land O'Lakes Creameries merged to form Land O'Lakes, Inc. In 1971 Land O'Lakes acquired the soybean processing plant in Fort Dodge from Cargill. In June 1982 [or perhaps Sept. 1983] the Fort Dodge was shut down–permanently.

Photos show: (1) The original factory, H.R. Heath & Sons' Yankee Cereal Mills, later acquired by Quaker Oats. (2-3) Two aerial views of the Fort Dodge plant while owned by Land O'Lakes. (4) Ground view of the plant, railroad tracks, and empty rail cars. (5) Aerial view of the facility in 1991, used to store and load out crude soybean oil. Address: Author, Heritage Publishers, Inc., 2700 Woodlands Village Blvd., Suite 300-200, Flagstaff, Arizona 86001. Phone: (602) 526-1129.

441. *SoyaFoods* (*ASA, Europe*). 1993. Exhibition report [SIAL in Paris]. 4(1):7. Winter.

• ***Summary:*** "SIAL in Paris is always one of the biggest and best attended food product exhibitions and 1992 was no exception. Soya foods were well represented and some new products were launched including Celia's new *Biostar Blinis* pancake mix; a new soya and rice dessert from Laiterie Ladhuie, frozen soya based meat analogues from Phytikos, Germasoja from Abbaye de Sept-Fons (see p. 5 for details of these products).

"Other companies presenting soya foods included: Sojinal, France–a range of soya products including soya paste, milks, desserts, meals; Zonnatura, Netherlands–soya milks, desserts and vegetarian meal replacements; Tonputs, Netherlands–frozen Soyaschnitzel, Soyaburger and Soyasausage; Bakker Lekkerkerk, Netherlands–the *Vivera* range of chilled and frozen meat alternatives; l'Abbé Bisson, France–biscuits with soya, raisins or chocolate; Vitagermine, France–Soya bars and biscuits; Yeo Hiap Seng Ltd. Singapore–Soysauce, soya drinks and salted soya beans; Minerve SA, France–*Soja Plaisir* range of soya based sauces, bean sprouts and bean sprout salads; Céréal, Wander, France–Soya based drinks, desserts, pastas, sauces, Pains Grillé, biscuits; FPS, France–vegetable protein ingredients; Distriborg–soya drinks, desserts, sauces, meals, biscuits and pastes; and Tivall Vegetarian Food Products, Israel–vegetarian meat alternatives.

"Dusseldorf, Germany was the venue for FIE 92. Of the 451 international companies present several major soya protein companies exhibited including: Solnuts, Netherlands–showing their new range of custom-made food ingredients; Worlée GmbH, a German company, specialising in dried ingredients and soya products; Edelsoja, Germany–soya protein ingredients; Dutch Proteins and Services, Netherlands–soya protein products; Protein Technologies International, Germany–isolated soya proteins; A.E. Staley Manufacturing Co., US–Gunther range of soya ingredients; Mandarin Soy Sauce, Inc., US–liquid and dried soysauces; ADM Ingredients Ltd., UK–flours, flakes, grits, concentrates, isolates and textured products; Solbar Hatzor, Germany–*Contex* textured soya concentrates; Celia Technologies, France–dehydrated soya milk; GMB Proteins, UK–Bontrae

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textured soya proteins; Central Soya Aarhus, Denmark–soya protein concentrates; Cargill, Netherlands–defatted soya flours, grits and textured soya proteins; Alternative Food Ingredients (AFI), France–soya proteins and fibres; Sogip, France–soya flours, concentrates and textured soya products; Stern, Germany–full fat soya flours, grits, concentrates, isolates, textured proteins, soya bran, full fat soybean snacks (expanded with hulls) and *Sternpur* lecithin."

442. Meyer, Edwin W. 1993. Historical notes on textured soy flour (Interview). *SoyaScan Notes.* May 10. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The Glidden Co. sold a textured soybean meal mainly to John Morrell & Co. for use in pet (especially dog) foods–but also to some other dog food companies. Morrell was a big meat processing firm with headquarters in Chicago and a big plant in Ottumwa, Iowa. At that time all dog food was canned (no dry or semi-moist) and this textured soy flour kept a certain amount of its integrity during retorting–so the dog-food people liked it.

The solvent defatted soybean meal was run through an expeller (also called a screw press) to give it texture, then the resulting cake was broken up into bits or grits. No die was used. Glidden's early texturizing process, dating from the late 1930s, was covered by a 1939 patent issued to Arthur Levinson and James Dickinson. These two inventors never got much credit for their invention (in part because they unfortunately did not use the term "texturize") and it played no role in the subsequent technology based on extrusion. If Levinson and Dickinson had used the key term "texturize," their patent would have been "prior art" making it more difficult for people to subsequently be issued patents on extruded materials or texturizing. An expeller, which was designed to press the oil from oilseeds, is less well suited to texturization than an extruder–which has no openings along the barrel and which gives more sheer working and alignment of the protein to create that meatlike texture.

Many people think (incorrectly) that William Atkinson was the original inventor of textured soy flour, but the Atkinson patent (issued Jan. 1970; No. 3,488,770) does not dominate the industry–even though Atkinson's patent was a very early, creative, and important one, and ADM did a very good job getting TVP on the market early. Ed is quite sure that Atkinson developed his patent independently and with no knowledge of Flier's work. However the dominant U.S. patent now is the one issued to Flier (pronounced FLEER) of Ralston Purina Co. on 24 Feb. 1976 (No. 3,940,495). There was a long time between application date and issuance date for the Flier patent. The Flier patent expires in 1993.

Part of the following is based on Ed's first-hand knowledge and part on second-hand knowledge (hearsay). After the Flier patent was issued, Ralston Purina filed a lawsuit against ADM in a federal court in southern Illinois. Swift (who was also extruding soy flour) may have been included in the suit. Sometime after the filing of the suit, Ralston Purina and ADM settled out of court. Ed thinks that as part of the settlement, they cross-licensed each other (so that each could use the best parts of the other's patent). After the ADM settlement, Ralston Purina went after all others in the industry who were extruding to take licenses. If they didn't take a license, Ralston could charge them with infringement, and the cost of the infringement can be very high. So Cargill and A.E. Staley each took a license. Then Ralston Purina sued Far-Mar-Co. Wenger supported Far-Mar-Co because Wenger felt that patent would curtail the sale of their machinery. Ed was subpoenaed by Far-Mar-Co to give testimony under oath. Far-Mar-Co people learned, via Wenger, that there was a man in Decatur, Indiana, who was using a Sprout-Waldron extruder in the early 1960s to produce mixed, extruded feeds. Ed and his coworkers (Steve Frank and Bud Campbell) examined that extruded material in their lab at Central Soya. After some time that case was decided in court and Far-Mar-Co lost it [in mid-1984].

Then Ralston Purina went after Central Soya–which had its own patent issued to Gabor Pusski in 1976. Ed Armstrong, an internal attorney, suggested that Ed Meyer and Art Konwinski (Central Soya's extrusion man), take a very close look at the process by gathering detailed data. Based on that the attorneys concluded that Central Soya was infringing on Ralston Purina's patent. So Joe Gillespe, a vice president at Central Soya, made a deal with Ralston, that Central would sell Ralston several feed operations they had in Brazil at a very attractive price, plus several patents on industrial proteins. In exchange, Central Soya got a non-exclusive royalty-free license in perpetuity.

Ed has long wondered why the patent examiner didn't cite an "interference," which applies when two inventors make claims that overlap or are on the same subject. Then the patent office must conduct an investigation to see who has priority. This story does not appear in the history books and Ed is not sure that it should be.

"Over the years I have learned to be very skeptical of what I read because so much is said in an advertising mode rather than in a definitive or factual mode." People say that their products are used in various applications when they are not–which is wishful thinking in the hope that new customers will try the product. Address: 1701 N. Sayre Ave., Chicago, Illinois 60635. Phone: 312-637-0936.

443. Wittenburg, Bonnie. 1993. Archer Daniels Midland Company: NYSE–ADM. Minneapolis, Minnesota: Dain Bosworth. 36 p. 28 cm.

• ***Summary:*** Contents: Summary and recommendation: Valuation. Company profile. Operating review. Corn refining: High fructose corn syrup (HFCS), ethanol, bioproducts. Oilseed processing (soybeans, soymeal, soyoil): Edible soy proteins (soy protein concentrates, isolates, soy flour, and textured soy flour). Wheat milling. Other products

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and businesses. International trade: NAFTA and GATT. Financials. Recent results. Outlook and conclusion.

Index of exhibits. ADM sales by segment in 1988 and 1993 (p. 5; In 1993: Oilseed processing 50%, corn refining 28%, wheat milling 13%, other 9%). U.S. oilseed processing capacity (p. 20; ADM 28% of U.S. capacity, Cargill 25%, Bunge 16%, Ag Processors 14%, Central Soya 10%, Other 7%). World oilseed production by crop (p. 20; Soybeans account for 52% of the 227.3 million metric tons [tonnes] total). World soybean production by country (p. 20; Total 116.9 million tonnes, of which the U.S. produces 51%, Brazil 19%, Argentina 10%, China 9%, Other 11%). World vegetable oil consumption 1992 by crop (p. 21; Total 584. million tonnes, of which soybean is 30%, palm 21%, rapeseed 15%, sunseed [sunflowerseed] 14%, peanut 6%, cottonseed 6%, other 3%). Soybean meal use by livestock (p. 20; Poultry 51%, swine 27%, beef 8%, dairy cows 7%, other 7%). Largest exporters of soybean meal: 1990-1994 (tonnes in 1993/94 EC-12 8,830, Brazil 6,550. USA 4,944). Largest importers of soybean meal: 1990-1994 (tonnes in 1993/94 EC-12 13,630, Asia and Oceania 4,936, Middle East and North Africa 2,443).

This "Dain Bosworth Research Report" is "A fundamental appraisal of investment value." "ADM is so big and efficient, and its product lines are so diverse, that it can benefit from almost any positive trend impacting agriculture worldwide. ADM is believed to be the largest corn refiner, oilseed processor and flour miller in the United States... We recommend purchase of ADM shares based on our expectations of improved earnings momentum beginning in the fourth fiscal quarter of fiscal 1994."

Concerning edible soy proteins (p. 23-24): The entire U.S. meat substitute market is estimated at $50-100 million annually today, and growing at 5-8% a year. The Green Giant Division of Pillsbury is marketing ADM's burgers under the name Green Giant Harvest Burger. Worthington Foods of Ohio is the leader in the meat substitute category. Their Morningstar Farms burgers are precooked whereas ADM's burgers require cooking. ADM sold 70 million veggie burgers in fiscal 1993 and is now building capacity to triple production. A company named Aton, said to be one of the largest private enterprises in Ukraine, has an agreement with ADM whereby ADM will be shipping $100 million of soy-based food ingredients to Ukraine by the summer of 1994.

Toepfer, which was started in Germany in 1919, handles approximately 9% of the total world grain trade and about 35% of the world trade in feedstuffs. ADM owns 50% of Toepfer; the other half is owned by 14 cooperatives from 7 countries including Gold Kist, Agway, Harvest States, AGP, etc. in the USA.

"We continue to believe that the long-term story for ADM is among the best of the companies we follow." "In our opinion, ADM is among the best positioned, best managed, and financially sound ag processing companies around" (p. 35). Address: 60 South Sixth St., Minneapolis, Minnesota 55402-4422. Phone: (612) 371-2728.

444. Shurtleff, William; Aoyagi, Akiko. comps. 1994. Ralston Purina Co. and Protein Technologies International's work with soybeans and soybean products–Bibliography and sourcebook, 1934 to 1993: Detailed information on 293 published documents (extensively annotated bibliography), 44 commercial soy products, 42 original interviews (many full text) and overviews, 16 unpublished archival documents. Lafayette, California: Soyfoods Center. 147 p. Subject/geographical index. Author/company index. Language index. Printed 4 Dec. 1993. 28 cm. [381 ref]

• ***Summary:*** The Ralston Purina Co.–originally named the Robinson-Danforth Commission Co.–was incorporated on 8 Jan. 1894 in St. Louis, Missouri. The founders, William H. Danforth (lived 1870-1955), George Robinson, and William Andrews belonged to the same church. The original capitalization was $12,000. The company began by making horse and mule feed; their product was mixed with shovels on the floor of a back room. In March 1896 Danforth became the president of the company and on May 26 of that year he became the majority stockholder. The next day the mill was completely destroyed by the worst tornado in St. Louis' history. Danforth rebuilt the company and made it one of America's largest producers of animal feeds.

Ralston Purina's research on soybeans probably dates from the period before World War I, when the meal had to be imported from Manchuria. In 1926 the company established a 712-acre research farm at Gray Summit, Missouri, for testing all ingredients in laboratory-developed formulas. It is not clear when the company first used soybean meal in its feed products.

The company began processing soybeans in the depths of the Great Depression, probably in about 1930. By Aug. 1935 it had plants for processing soybean meal at Lafayette, Indiana, Circleville, Ohio, and St. Louis, Missouri. The company processed over 2,000,000 bushels of 1935 crop soybeans. By 1936 this soybean meal was being used in 14 products, mostly "Purina Chows," animal feeds made by Purina Mills of St. Louis. It was sold under the famous corporate trademark, the red and white checkerboard.

By the early 1940s was the largest single consumer of soybean meal in America. By 1947 Ralston was operating at least four soybean crushing plants, located in Lafayette, Indiana; Iowa Falls, Iowa; Kansas City, Missouri, and St. Louis, Missouri. The four plants contained 23 expeller presses, had a capacity of 560 tons of soybeans per day, and a storage capacity of 3.91 million bushels of soybeans. The main product of each plant was Purina Chows.

Ralston Purina became involved with isolated soy proteins in 1958 through the acquisition of four soybean processing plants from Procter & Gamble (Buckeye Division). One P&G plant, located in Louisville, Kentucky

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had an industrial soy protein isolate operation built in about 1946-47 to produce industrial isolate for their Spic & Span house cleaner. During the 1950s P&G converted this plant to making industrial soy protein isolates for the paper coating industry. Production was started by Ralston Purina on 13 June 1959.

The roots of Ralston Purina's work with edible soy protein isolates reach back to Henry Ford. In early 1960 Robert Boyer, who had become one of the world's leading authorities on soy protein isolates while working for Henry Ford, began work as a full-time consultant for Ralston Purina. Starting that year, largely because of Boyer's arrival, Ralston Purina began its first research on edible soy protein isolates at a new research and pilot plant at company headquarters in St. Louis. In 1961 a semi-works plant to create these products was erected at Louisville. In about September 1962 Boyer was named technical director of protein product sales in the soybean division of the Ralston Purina Co.; he worked for Ralston until his retirement in 1971. In 1962 Ralston Purina began to sell both spray-dried edible soy protein isolates (named Edi-Pro A and Edi-Pro N) and the world's first commercial spun soy protein fibers (named Textured Edi-Pro or Fibrotein, and manufactured under patents owned by Robert Boyer). By July 1962 these fibers were being used by Worthington Foods to make a new generation of meatless meatlike products. Ralston Purina's food-grade soy protein products were sold only to the food industry, not directly to consumers.

Frank Calvert, Boyer's co-worker from the Ford Motor Co., was hired in November 1962 to head up Ralston Purina's R&D work on edible isolated soy protein in St. Louis. In 1965 Calvert was named director of soybean research, and in 1967 director of research of the protein division. Calvert is considered a visionary in soy protein research and the accomplishments of his career were honored in 1973 when the Ralston plant at Memphis, Tennessee, was dedicated to him.

By 1969 Ralston Purina had become the world's largest producer of formulated livestock and poultry feeds, with plants in over 40 states and 30 foreign countries.

By 1975 Ralston Purina employed more than 50,000 people worldwide and had sales of $3,000 million a year.

In Dec. 1976 Dun's Review proclaimed Ralston Purina to be one of America's best-managed companies. "Besides being the world's largest producer of animal feed and pet food, Ralston Purina is also a leader in protein production and nutrition research, which have vast implications for the company's future."

A survey of U.S. and Canadian soybean processing facilities conducted in Nov. 1977 by Shearson Hayden Stone Inc. found that Ralston Purina was the fourth largest soybean crusher / processor in North America (after ADM, Central Soya, and A.E. Staley), with a capacity of 92 million bushels per year, representing 7.5% of total industry capacity.

During the late 1970s and early 1980s Ralston Purina, under R. Hal Dean (chairman) and William P. Stiritz (president and CEO), was restructured to focus on being a manufacturer of higher-margin consumer packaged goods and to move away from its inherently volatile commodity-based enterprises. During the restructuring, Ralston Purina sold a number of its core divisions that dealt with commodities and used the revenues to purchase many new companies–including Continental Baking Co., Eveready Battery Co., Jack-in-the-Box restaurant chain, Van Camp Seafood Co., Keystone all-seasons resort, etc.

On 2 Jan. 1985 Ralston Purina finalized its sale of six soybean processing facilities to Cargill. Ralston stopped operations at its seventh soybean processing plant in Memphis, Tennessee. The deal left Ralston completely dependent on outside sources for soybean products for its pet foods and other products.

In mid-1986 Ralston Purina sold Purina Mills, its U.S. animal feed business, which represented the origins of the company. The buyer, BP Nutrition, paid $545 million for the prosperous mills. With these two sales, Ralston Purina exited from the bulk animal feed and soybean crushing business. It still sold pet foods to consumers.

The company's 1986 annual report stated that Ralston Purina was the world's largest producer of dry dog and dry and soft moist cat foods, and was the largest wholesale baker of bakery products in the U.S. "Ralston's metamorphosis into a very attractive consumer packaged goods company is now essentially complete." During the past year the company had earned $388 million on $5,500 million sales.

In 1972 Ralston Purina expanded its isolated soy protein operations into Europe by forming Purina Protein Europe (PPE). This started as a marketing organization but soon expanded into a technical service organization with an Application Laboratory in the UK, first at West Haddon and then at St. Albans, Herts., not far from London's Heathrow Airport. By 1976 PPE had an office in Brussels, Belgium, and in late September, 1978, PPE opened Europe's first plant manufacturing isolated soy proteins, at Ieper (Ypres), Belgium.

Also in 1978, in America, Ralston Purina expressed its growing interest in soy protein foods by sponsoring the Keystone Conference on soy protein and human nutrition, a milestone event that brought together top researchers in the two fields and resulted in the publication of the proceedings (Wilcke et al. 1979).

Starting at about this time, Ralston Purina became the world's leading manufacturer of food-grade isolated soy proteins. On 1 July 1987 Ralston Purina Co. established Protein Technologies International (PTI) as a wholly-owned subsidiary, with 92 researchers. Today PTI continues to be the world's foremost maker of isolated soy proteins, with offices worldwide, and manufacturing plants in the USA and Belgium. PTI also makes several industrial isolates and

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Fibrim soy fiber.

Issued in commemoration of Ralston Purina's 100th anniversary, this is the most comprehensive bibliography ever published about Ralston Purina Co. and Protein Technologies International's work with soybeans and soybean products. It has been compiled, one record at a time, over a period of 18 years, in an attempt to document the history of these two pioneering companies. Its scope includes all known information about this subject, worldwide, from 1934 to the present.

This book is also the single most current and useful source of information on this subject, since 85% of all records contain a summary/abstract averaging 170 words in length.

This is one of more than 40 bibliographies on soybeans and soyfoods being compiled by William Shurtleff and Akiko Aoyagi, and published by the Soyfoods Center. It is based on historical principles, listing all known documents and commercial products in chronological order. It features: 30 different document types, both published and unpublished, every known publication on the subject in every language, and 42 original Soyfoods Center interviews and overviews never before published. Thus, it is a powerful tool for understanding the development of these two companies from their earliest beginnings to the present.

The bibliographic records in this book include 293 published documents and 16 unpublished archival documents. Each contains (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English publications together with an English translation of the title, month and issue of publication, and the first author's first name (if given).

The book also includes details on 44 commercial soy products, including the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as references to and summaries of advertisements, articles, patents, etc.) are also given.

Details on how to make best use of this book, a complete subject and geographical index, an author/company index, a language index, and a bibliometric analysis of the composition of the book (by decade, document type, language, leading periodicals or patents, leading countries, states, and related subjects, plus a histogram by year) are also included. The introduction contains a history of both companies. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 510-283-2991.

445. Duggan, David. 1994. Problems with the Flier patent assigned to Ralston Purina (Interview). *SoyaScan Notes.* June 13. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** David is an anti-trust attorney, not a patent attorney. On 5 July 1990 the federal circuit court of appeals, which hears appeals concerning patent cases in the United States, ruled that Ralston Purina Company had procured the famous Flier patent (No. 3,940,495. Feb. 24, 1976. Application filed 17 Jan. 1973) by fraud on the patent office. The case is number 909 F.2D 1494 (Staley vs. Ralston Purina).

Price Heneveld (a law firm of patent lawyers in Grand Rapids, Michigan) apparently represented Ralston Purina on both the original application and in subsequent litigation.

There was apparently earlier litigation involving Far-Mar-Co, Staley, Cargill, etc. The first case was apparently Ralston Purina vs. Far-Mar-Co of Kansas. He believes that Ralston Purina filed the lawsuit in Oct. 1976. The judgment was in or about 1981–showing the slow pace of federal litigation. The case was tried in the 10th federal judicial circuit (district of Kansas), which is statistically the worst, in the sense that more cases are later overturned from that circuit by the U.S. Supreme Court. He finds it interesting that Ralston chose to file its first case in that circuit. There is law to the effect that if you engage in fraud on the patent office and then use that fraud in an attempt to control or monopolize the relevant market, that is illegal, and may be the basis for a anti-trust lawsuit.

In 1976, after Ralston Purina won the case against Far-Mar-Co in Kansas, Ralston started sending demand letters to many other companies that were supposedly infringing this patent–including Staley, Cargill, Central Soya, Griffith Laboratories, Miles Laboratories, Nabisco, Anderson Clayton, General Mills, Nestle, Riceland Foods, Dawson Mills, General Foods, Grain Processing Corp., etc. Ralston was protecting its rights.

In 1985 the Far-Mar-Co case was upheld, saying that Ralston Purina indeed had the rights to the Flier patent (Case no. 772 F.2D 1570). However Far-Mar-Co did not raise the issue of fraud. So it took another 5 years for the court to reach that question–which it decided in 1990.

David's main questions are: (1) Is textured vegetable protein [actually textured soy flour] a distinct segment of some relevant market? (2) Did Ralston Purina try to exclude other competitors from that market. (3) Were there substitutes for the product on which Ralston Purina had a patent? David's firm is in the process of representing a former player in the industry, a major trading company; they may represent a consortium of companies that were effected by the Ralston Purina's "ill gotten gains."

Update: Talk with David Duggan. 1996. April 26. His firm was representing the Lauhoff Residuary Trust in a case against Ralston Purina Co. Lauhoff is a grain company in Danville, Illinois. They were sued by Ralston, which claimed that they had infringed the patent without paying royalties. Lauhoff initially disregard the demand letter threatening a suit. Then they sold the company, but did not

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properly disclose to the buyers that a lawsuit was pending or had been threatened. Lauhoff then lost the case against Ralston in about 1986 or 1987. So the new owners sued the formers owners for failure to disclose. David argued that the amount paid by Lauhoff to settle the lawsuit was fraudulently paid. The case, which was very complex and convoluted, was thrown out of court by the judge because the statute of limitations had expired–they brought the case too late. Moreover, the patent was nearing its expiration date, or had expired. David believes that there was some pretty serious frauds on the courts in litigation to enforce the patent. David tried to present a RICO (Racketeering Influenced and Corrupt Organizations) Act argument. It provides for triple damages. David tried to approach some of the smaller players like Far-Mar-Co but he did not approach ADM. The patent law was recently changed to 20 years from the point of application; formerly it was 17 years from the point of grant. Address: 321 S. Plymouth Court, Suite 800, Chicago, Illinois 60604. Phone: 312-663-0670.

446. *Biodiesel Alert* (*Arlington, Virginia*). 1994. World class biodiesel plant to be built in U.K. 2(10):4. Aug.
• ***Summary:*** "Cargill is joining with the United Oilseeds Marketing cooperative to build a 100,000 ton (30 million gallon) per year biodiesel plant in Great Britain. The plant will be in place by the 1995 rapeseed harvest,..."

447. Limpert, Bill. 1994. The Soy Protein Council and Cargill, Inc. (Interview). *SoyaScan Notes*. Dec. 29. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** For the last 8-10 years the Soy Protein Council (which was founded in 1971) has had only 3 full members: ADM, Cargill, and Central Soya. As the number of members has decreased, the dues that each member company pays has increased. Protein Technologies International does not belong and pays no dues. He does not know why PTI does not belong, yet they participate in some meetings when there is specific legislation that affects them, and they also participate in lobbying on behalf of soy proteins.

The only soy protein products that Cargill makes are defatted soy flour, textured soy flour, and flavored textured soy flour (as for Schilling or McCormack). These products, which are all produced at one plant in Cedar Rapids, Iowa, often end up as ingredients in consumer food products, but Cargill (like ADM) does not sell any consumer products. Very little Cargill products end up in pet foods any more.

A company that makes full-fat soy flour is HiPro Food Products, Inc., 775 Colorado Ave. South, Minneapolis, Minnesota 55416 (Phone: 612-545-0151; Bob Cross, president). They have a plant in New Germany, Minnesota.

Update: 1997 Oct. 16. The Soy Protein Council still only has the same three full members. PTI still has not joined. Address: Research Chemist, Technical Services Manager, Cargill, Inc., Research Dep., P.O. Box 5699, Minneapolis, Minnesota 55440.

448. *Wall Street Journal.* 1995. Cargill Inc. names Ernest Micek to post of chief executive. March 29.
• ***Summary:*** Ernest S. Micek, age 59, was named chief executive officer of Cargill Inc. effective Aug. 8 [1994], and will succeed Whitney MacMillan, age 65, who is retiring from management but will continue as chairman. Mr. MacMillan has been Cargill's chief executive for almost 18 years. The great-grandson of the founder, W.W. MacMillan, his retirement will end that family's direct management of the company.

The largest closely held firm, Cargill had sales / revenues of $47.1 billion during the fiscal year ended 31 May 1994.

Micek, already a director, was elevated last year to the president's office from his position as the executive vice president of Cargill's vast food sector. Since Mr. Micek has a degree in chemical engineering, the move is widely seen as a sign that Cargill might increasingly emphasize refining new products and "so-called biochemicals from grain: a booming business that arch-rival Archer-Daniels-Midland largely pioneered." Mr. Micek has directed Cargill's moves into refining sweetener (high fructose corn syrup) from corn, and (more recently) ethanol fuel and plastics from corn. Address: Staff Reporter, Wall Street Journal.

449. *Ontario Soybean Growers' Marketing Board Newsletter.* 1995. Producing soybeans for the soyfood market. April. p. 3.
• ***Summary:*** In early March, 1995, Iowa State University conducted a seminar titled "Producing Soybeans for the Soyfoods Market." Topics covered included an introduction to soyfoods (complete with tasting at Iowa State's Center for Crops Utilization Research facility), a review of Japan's soyfoods market, trade policy changes and challenges, quality assessment, and the effects of varietal characteristics on soyfood quality.

Speaking on Japan's soyfoods market, Hideki Furuhata of Mitsui & Co. reported that consumption of tofu and natto is increasing slowly in Japan, while miso and soy sauce are decreasing. China has been supplying Japan with 250,000 to 300,000 tonnes/year of soybeans, mainly for making miso and natto. Japan imports between 120,000 and 130,000 tonnes/year of identity preserved soybeans, up from 100,000 tonnes 5 years ago. For example, 50,000 tonnes of Vintons were imported in 1994.

Bradley Hildebrand of Cargill in Minneapolis, Minnesota, reported that the U.S. exports about 130 million bushels/year of soybeans to Japan. About 30 million bushels (23% of the total) are used to make soyfoods. Most of the soybeans used for soyfoods in Japan are known as "IOM" beans because they are grown in Indiana, Ohio, and Michigan. IOM soybeans are not any specific variety

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or hilum color, but they are generally higher in protein and better in quality than other U.S. soybeans. They trade at a premium of 10-20 cents per bushel over other U.S. soybeans in Japan. IOM soybeans are traded on the Japanese grain exchange. For shipment to Japan, IOM soybeans are railed to Baltimore (Maryland) or Norfolk (Virginia) for shipment via panamax size vessels. They may also be railed to Mobile (Alabama) or New Orleans (Louisiana) for vessel shipment.

Hildebrand reported that IOM soybeans will keep the largest market share due to their low price, however there is a market for variety soybeans. He said that Vinton is the most popular variety for making tofu in Japan, but it does not yield high enough in the field to make it price competitive. "He suggested that breeders need to develop a high-yielding soybean with Vinton's tofu-making characteristics. However he said the market for variety soybeans is not huge and is easily flooded." Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

450. Edwards, Cliff. 1995. Grain, soybean giant may be investigated. *Albuquerque Journal.* July 11. p. D8. [1 ref]
• ***Summary:*** This Associated Press report relies heavily on a story published in *The Wall Street Journal* on July 10. ADM processes about one-third of America's grain and soybeans. In 1992 Mark E. Whitacre, a high-ranking official at ADM, went to the FBI to report irregularities. Working for the FBI he went undercover and, using a briefcase rigged with a recorder, he secretly taped meetings between ADM and other agribusiness companies. ADM stock lost about $2 billion in one week, falling to $15.87½ on the NYSE. The BioProducts Division of ADM is said to have lost money in the last 3-4 years as the company launches new products. ADM and competitors Cargill Inc., A.E. Staley Manufacturing Co., and CPC International Inc. have said a federal grand jury in Chicago has either subpoenaed their records or executives or was expected to. Address: Associated Press.

451. Kilman, Scott; Ingersoll, B.; Abramson, J. 1995. Risk averse. How Dwayne Andreas rules Archer-Daniels by hedging his bets: CEO works with rivals, gives to both parties and invests in the media. Soy meatballs on the menu. *Wall Street Journal.* Oct. 27. p. 1, A8.
• ***Summary:*** A very well researched and written profile of Dwayne Andreas and how he applies the concept of hedging to every aspect of ADM's business life. Andreas was born on 4 March 1918 in Worthington, Minnesota, the son of a Mennonite farmer. From 1936 to 1938 he attended Wheaton College in Illinois. From 1938 to 1945 he was executive officer of Honeymead Products, a family-owned company. From 1945 to 1952 he was vice president of Cargill.

In 1947, when ADM Chairman Shreve Archer died after choking on a chicken bone, Dwayne Andreas was age 29 and vice president of a rival firm. For the next 18 years, Mr. Andreas built a name for himself in the grain industry and became a millionaire in the process. He left Cargill and returned to Honeymead, where from 1953 to 1960 he was an executive and the chief shareholder. From 1960 to 1966 he was executive vice president of Farmers Union Grain Terminal Association, a cooperative. By 1965 ADM was foundering (it had never quite recovered from the loss of its leader) and the founding families were ready to sell a sizeable share to Mr. Andreas, to make him a director, and to groom him for the top job. So in 1966 Andreas accepted the offer, joining ADM as a director and member of the executive committee. He spent the rest of his career leaving as little as possible to chance. Now age 77 and a diminutive 5 feet four inches tall, he "runs the giant publicly-trade grain-processing company like a private family concern. Secrecy is so tight that ADM doesn't even release quarterly revenues. Mr. Andreas once proudly told analysts, "Getting information from me is like frisking a seal." In 1970 Andreas was named ADM chief executive officer, and in 1972 he was elected chairman of the board.

ADM is now America's largest commodity processor, with annual revenues of $12.7 billion. Including stock dividends, ADM's stock value has climbed at an average annual rate of 17% over the past decade–outpacing the stock market's annual return of roughly 15%, as measured by the Wilshire 5000 Equity Index. ADM earnings soared 64% during the last fiscal year to a record $795.9 million.

Notwithstanding criticism that ADM's board is dominated by Mr. Andreas plus his family and friends, Wall Street sees no possibility of a serious battle for corporate control, and little chance that any other company could pay at least $8.7 billion (ADM's market capitalization) to buy the company.

ADM is a major beneficiary of federal price supports for sugar (they make ADM's high-fructose corn sugar an economical product) and of the 54-cent-a-gallon excise tax break on ethanol (since ADM is the dominant producer of the corn-based fuel additive). Mr. Andreas helps preserve these twin towers of legislative largesse by hedging. ADM leads corporate America in contributing to both political parties. "Since 1981, the company has given more than $800,000 to the Democratic Party and more than 1.5 million to the GOP" (Republican Party).

ADM dominates four major U.S. markets, controlling an estimated 35% of all corn refining (followed by Staley, Cargill, and CPC International), 31% of high-fructose corn syrup (again followed by Staley, Cargill, and CPC), 28% of oilseed processing (followed by Cargill 25%, Bunge 16%, Ag Processors 14%, Central Soya 10%, and others 7%), and wheat milling (followed by ConAgra 25%, Cargill 12%, Cereal Processors 6%, and others 31%).

Doing business with competitors has long been one of Mr. Andreas's hallmarks. As he likes to say, "Keep your friends close and your enemies closer." In 1992 ADM built a 3.5-mile pipeline to neighboring A.E. Staley Mfg. Co., one

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of its biggest rivals in the high-fructose corn syrup business. (Together the two companies control half of the $3 billion market.) The pipeline allows either company to call on its neighbor in an emergency for raw material, thus reducing risk.

Four ADM board members are Andreases, and an additional six of the 17 directors are ADM executives, retired executives, or relatives of senior managers. At ADM major decisions are made at the very top, mainly by three men: Dwayne Andreas, his son Michael Andreas (who is in charge of many day-to-day operations), and James R. Randall, who has been president of ADM for 20 years. Top managers operate without budgets or much paperwork. "Decisions are often made in the executive dining room over a lunch of Archer-Daniels soybean cuisine."

"Once Mr. Whitacre helped arrange a luncheon between Mr. Andreas and visiting executives of a company participating in the lysine meetings in hopes of taping them discussing price fixing. But Mr. Andreas spent the entire lunch talking to his bewildered guests about his favorite product, soy-based meat substitute, then sent them off with a big bag of the stuff.

In August 1994 he told this story concerning his views on competition: "The gazelle must run faster than the fastest lion or be eaten. And the lion must outrun the slowest gazelle or starve. It doesn't matter whether you are a lion or a gazelle; when the sun comes up, you'd better be running."

"He delights in being the most powerful man in American agriculture, regaling his guests over soy meatballs and catfish with stories of his back-channel diplomacy for American presidents... But Mr. Andreas's enjoyment of *Realpolitik* shouldn't be confused with a lack of conviction friends and associates say. He is passionate about the virtue of spreading soy-based food around the world.–albeit generally at a tidy profit–and about the perils of soil erosion. His uncle was an evangelist and young Dwayne spent hours in revivalist tents listening to the preachers. Mr. Andreas preserves some of that fervor in his own speeches about government and business policy."

In recent years ADM has been sued by Ralston Purina Co. for alleged technology theft. Ralston claimed patent infringement and misappropriation of trade secrets involving a soy protein product. This case is now entering the pretrial discovery phase.

Mr. Whitacre has alleged that ADM pays some top executives through illegal channels. ADM in turn has accused Mr. Whitacre of stealing more than $9 million from the company.

Meanwhile ADM has continued its upbeat institutional ads that have blanketed the television networks and many publications for years. In a sort of ratings hedge, the company also spent millions advertising on ABC's "This Week with David Brinkley," NBC's "Meet the Press," and CBS's "Face the Nation." From Jan. 1994 to April 1995 ADM spent $4.7 million advertising on "Meet the Press" and $4.3 million on "Face the Nation." ADM is also the leading corporate underwriter for the PBS MacNeil/ Lehrer Newshour, providing $6.8 million or 27% of the program's annual budget. Address: 1. Decatur, Illinois; 2-3. Washington, DC.

452. Rocher, Joseph. 1995. A chronicle of the USA-Europe conflict. What place for African producers? Paper presented at the Third Bi-Annual SoyAfrica Conference. 5 p. Held 3-5 Oct. 1995 at Johannesburg, South Africa. Organized by Aproma.

• ***Summary:*** Contents: Background. Europe vs. USA: the "Compromise." The conflict within GATT. The world price for soya and indirect dumping. Developing soya production in Africa: actions at the macro level (1. Redefinition of Article IV of the GATT/WTO dealing with "dumping." 2. Reform of the Common Agricultural Policy in the year 2004. 3. Right policies and agricultural protection in Africa).

This is a fascinating article expressing a viewpoint rarely heard in the USA by an expert on GATT; he has written in book titled *GATT in Practice* (1994).

"During the 1950's European countries were rebuilding their few processing plants; they were also looking for alternatives to American soya. The Europeans continued to allow US imports, but only as a compromise, a trade-off which would allow the EEC to give better protection to Europe's cereal production. In 1962, the six European member countries accepted a zero tariff on all US soya imports. as a direct result, the American pattern of protein consumption was allowed to penetrate European agriculture."

"It was not until July 1973 that the US embargo on soya exports was announced with the Gatt permission: the Article XI of the agreement defines conditions under which quantitative restrictions on imports or exports are allowed. Under this article, a country facing a drastic reduction in agriculture production (due to a drought, for example) is permitted to forbid exports (impose an embargo), in order to maintain national market prices at a level acceptable to the consumer."

"Towards the end of the 1970's the European Community felt that it had made a mistake. In 1979, Brussels put a mechanism in place–a major new support programme for oilseed production within the Community which was designed to reverse the trend of growing dependency on American and, by now, Brazilian soya. The mechanism, rather than erecting import barriers, gave incentives to the processing industry to use European-grown raw materials. At the same time, the US dollar rose on the international currency markets. Cargill and other US-based traders (ADM, Central Soya, ConAgra, Anderson Clayton) tried to maintain downward pressure on the price paid to North American farmers. This resulted in tension within the producers

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lobbying organisation, the American Soybean Association (Southern US farmers, whose costs are higher, sought a 'marketing loan' which would cover the difference between the market price and a higher, subsidised price).

"In 1987, the American Soybean Association with government backing lodged a complaint in GATT (a second dispute panel on soya) in an attempt to condemn the EC practice of giving subsidies for oilseed crushing; the US considered this a violation of the GATT Article III (National Treatment) which states that national and imported products must be treated on an equal basis."

The EC responded again by making adjustments acceptable to the USA.

"In 1991, the EC proposed a new oilseed's regime, based on direct compensatory payments to farmers, a subsidy mechanism inspired by US 'deficiency payments.' But Washington [DC] attacked the proposal on two counts: it was deemed to be a support to production, rather than an income support; and it was considered contrary to the concession granted to the US back in 1962 by the EC during the Kennedy Round of GATT... of zero tariffs for soya sold into Europe."

"Finally, the 'Washington Compromise' (or 'Blair House agreement') of 20 November 1992, limiting the amount of European land for oilseeds to 5,128,000 hectares, seemed a solution to the soya dispute. The 'Compromise' also included a ceiling of 1 million tonnes of EC oilseeds for industrial use."

"A major issue not properly treated during the Uruguay Round is the question of 'indirect' dumping. Soya is produced in the USA without subsidies. However, it is part of a crop rotation with two products (wheat and corn) which receive subsidies (deficiency payments). This situation creates an indirect subsidy system which puts soya on the world market at a price lower than the real cost of production. So we can consider that acceptance by the GATT/WTO of the deficiency payment has two major effects on African countries for their agriculture in general, for soya production in particular: deficiency system means that a major part of the agriculture policy is paid by the taxpayer (i.e., state budget) rather them by the consumer."

However the article contains a number of errors concerning the history of soybean production in the USA. Address: Director of Rongead, 14 rue Antoine Dumont, Lyon Cedex 08, France. Phone: (33) 72 71 66 70.

453. Lang, Paul. 1995. Natural Products, Inc. in Grinnell, Iowa: History, products, and competition (Interview). *SoyaScan Notes.* Nov. 27 and 28. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Paul started making soy products in Grinnell, Iowa, in August 1995. His family, which owns a 3,000 acre farm there, also now owns this business. They hope to use it as a way of adding value to the soybeans they grow. They do not presently make the roasted soy fiber or the enzyme active soy fiber shown in their ad in *Soya Bluebook Plus*. These two products were basically unground soy hulls, and some bagel companies used them. Some American bakers buy soy hulls to add dietary fiber to their baked goods. He cannot begin to compete with Fibrim made by Ralston Purina. The oil crushers is his area are dumping semi loads of soy fiber on the market for about $0.05 to $0.08 per pound. Paul's family bought a Cargill animal feed mill in Grinnell; it was worth $700,000 (for just the buildings) but Cargill had abandoned it, so they were able to buy it for $52,000. Paul is very interested in identity-preserved soybeans and he has 34 different bins to keep each variety separate. He thinks the future of soyfoods lies in identity preservation. For example, he now uses a low-flatulence soybean to make his soy flour–and his is the only company doing this.

Clofine, located just outside of New York City, buys Paul's products (both enzyme active and inactive roasted whole soy flours) and re-sells them. They are almost like a broker. Using a patented process, Clofine slurries the enzyme active (raw) flour with water (probably hot water) then spray dries it, under high pressure through a small orifice. Ed Pedrick helped to develop this method. After that, Paul does not know how the product is processed, and how they get from soy flour to "spray-dried tofu." He does not know if any coagulant is added, and what is the justification for calling it tofu. He views it as simply a water-soluble soybean flour, with a low PDI. It will hold up in suspension when mixed with water to make soymilk. Paul also sells to Devansoy, where Mr. Pedrick now works full time and makes the same spray-dried product. Devansoy sells the product both under their own trademark and as a raw material for use by other food processors. Both Clofine and Devansoy sell these spray-dried products for about $1.35 per pound; they buy the flour from Paul for about $0.35/pound. If Paul developed a very finely ground soy flour, he could probably take away that market. They sell the roasted flour to bakers in New York City.

In terms of particle size, the smallest is flour, then meal, then grits, then granulers [he coined this phrase], then splits. The big crushers such as ADM and Cargill sell fairly coarse "grits." Generically, the grits go to bagel companies–and he does not know why. The granulers and splits are not presently being sold. His main products are the enzyme active full fat flour, and the lightly roasted inactivated full-fat flour. Paul is working closely with the American Institute of Baking (AIB). Paul also sees a huge potential export market. Address: Natural Products, Inc., 798 Hwy 6, Grinnell, Iowa 50112. Phone: 515-236-0852.

454. Nguyenle, T.; Wang, W.; Cheung, A.P. 1995. An investigation on the extraction and concentration of isoflavones in soy-based products. *J. of Pharmaceutical and Biomedical Analysis* (*Oxford*) 14:221-32. *

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• ***Summary:*** Gives levels of daidzein and genistein in Infant formulas: Isomil (ready to feed), Nursoy (liquid concentrate), Prosobee (liquid concentrate). Soy flours (Central Soya–Soyafluffy), Centex, Promax, Promax plus, ADM–Nutrisoy, TVP, Acron-F, Acron-S, Cargill Protein Products -200/20, 200/70, Arrowhead, Molly Farm, Sun Ridge Farm, Soy drink, Tempeh, Soy protein concentrates (Procon, Promine), TVP (Response).

455. Doidge, Brian. 1996. Canadian soybean export prospects for 1996. *Canadian Export Soybeans* (*OSGMB, Chatham, Ontario, Canada*) 9(1):3-4. Jan.
• ***Summary:*** "The recent formation of the Canadian Soybean Export Association (CSEA), serves to focus attention on this rapidly growing sector of the Canadian soybean industry." The 1994/95 crop set a new record with soybean exports of 524,254 tonnes (19.26 million bushels). Another strong year is projected for 1995/06.

Note: The CSEA is an association of major Canadian soybean exporters; the association does not itself export. One of its major objectives is to lobby the Canadian government for funding and promotional support.

Talk with Michael Loh of Canada. 1996. Jan. 24. Members of CSEA include W.G. Thompson, Maple Leaf Foods, Cargill, etc. Nutrisoya, Inc. will also be a member.

A half-page table (p. 3) shows Ontario soybean supply and demand for 4 years from 1992/93 to 1995/96. Under soybean supply, statistics show: Acres harvested, beginning stocks, production, imports, and total supply. Under soybean supply are: Crush, export, seed, other domestic use, and total use. Plus ending stocks and average price per bushel.

A full-page table (p. 4) lists Ontario soybean exports for 4 years from 1991/92 to 1994/95. Ontario's top four export customers in Asia in 1994/95 were: Japan (25,988 tonnes), Hong Kong (23,311), Singapore (22,502), and Malaysia (16,231). Others are Indonesia, North Korea, Philippines, and Taiwan. The top 4 customers in Western Europe in 1994/95 were: Netherlands 73,654 tonnes, Spain 61,134, France 51,119, Belgium 15,428. In Eastern Europe, Poland bough 10,000+ tonnes in 1993/94 and 1994/95 and Uzbekistan bought 7,117 tonnes in 1993/94. Total exports have grown steadily from 238,809 tonnes in 1991/92 to 495,772 tonnes in 1994/95. Address: Education and Business Manager, Ridgetown College of Agricultural Technology.

456. Wright, Patrick E. "Glen." 1996. Brief history of Owensboro Grain Co. (Interview). *SoyaScan Notes.* April 3. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** This company was founded in 1906 by Henry O'Bryan as a grain trader, mostly supplying corn to local distilleries. The company name has not changed over the years. Allied Mills owned a feed mill in Owensboro as early as 1928, but that company had no connection with Allied Mills and they did not crush soybeans. That feed mill was later sold to Cargill, and they eventually shut it down. "It's been gone for years."

Owensboro Grain Co. first began crushing soybeans in 1940 because they were a new crop which looked promising. Note: The company's name appears in a USDA publication "Soybean processing mills in the United States," published in Nov. 1943. For most of their history they have belonged to the National Oilseed Processors Association–as they still do. Today they still crush soybeans–and soybeans are the only crop they process. They refine soybean oil, and also extract and sell soy lecithin. They export most of their soybean meal; that which they do not export is sold to feed manufacturers.

In recent years they have steadily upgraded or added new facilities. An upgraded solvent extraction plant began operation in 1987, a lecithin refining facility opened in 1991, and a new soy oil refinery started in April 1995. Address: President, Owensboro Grain Co., P.O. Box 1787, Owensboro, Kentucky 42301. Phone: 502-926-2032.

457. *Soybean Quarterly* (*Nebraska Soybean Board, Lincoln, Nebraska*). 1996. Baking with soy: Variety reference guide. 2(2):6. Insert.
• ***Summary:*** A full-page table shows products used in baking that are now on the market from the following companies: ADM (6 products), AGP (4 types of Agsoy flour and grits), Cargill (5), Central Soya (4), and Protein Technologies International (5).

458. National Biodiesel Board. 1996. Board of directors and related documents. Jefferson City, Missouri. 15 p. Unpublished typescript. July 3.
• ***Summary:*** (1) The states represented are: Indiana, Iowa checkoff, Iowa association, Illinois checkoff, Missouri, Nebraska, Ohio, South Dakota, Michigan, Minnesota, SC/TN [South Carolina and Tennessee, combined as one], Wisconsin. For each state is given: One farmer representative and one staff rep. Staff (incl. Kenlon Johannes, executive director, and Jeffrey Horvath, Program director) and the executive committee are listed at the end.

(2) NSDB associate members: Cargill, TRT (Twin Rivers Technology), OSGMB (Ontario Soybean Growers' Marketing Board [Canada]), FPRF (Fats & Proteins Research Foundation, Inc.), NOPA / AGP (John Campbell), AEP (Ag Environmental Products, Doug Pickering), NOPEC.

(3) United Soybean Board and the American Soybean Association staff. (4) Cooperators. (5) Potential members and other QSSBs.

(6) Consultants (7) Sub-contractors. (8) Agricultural and related organizations.

(9) Observers and advisors (government). (10) Observers and advisors (industry). (11) Observers and advisors (information & research services). Address:

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Jefferson City, Missouri.

459. Hasse, Geraldo; Bueno, Fernando. 1996. Chronology of the soybean in Brazil (Document part). In: G. Hasse and F. Bueno. 1996. O Brasil da Soja: Abrindo Fronteiras, Semeando Cidades [The Brazil of Soy: Opening Frontiers, Sowing Cities]. Porto Alegre, Brazil: L&PM Editores S.A. 256 p. See p. 198-99, 255-56. Illust. 32 x 28 cm. [Por; Eng]
• ***Summary:*** An excellent chronology: 1882–The earliest known planting of soybeans in Brazil, at Bahia. 1889–The first technical article on soybeans is published in *Instituto Agronômico* (Campinas, Sao Paulo). 1900–Experimental soybean plantations in Rio Grande do Sul. 1908–Japanese immigrants cultivate soybeans at home in the interior of Sao Paulo. 1914–In Porto Alegre, E.C. Craig teaches about soy. 1921–Seed is distributed to settlers of Santa Rosa, Rio Grande do Sul, by priest Albert Lehnbauer. 1923–Henrique Lobbe begins the testing of American varieties in Sao Simao, Sao Paulo.

1930–Planting and cooking in northeastern Rio Grande do Sul is taught by Czeslaw Biezanko. 1934–Seeds are brought from China to Minister Fernando Costa by actress Patrícia Galvao. 1935–Neme Abdo Neme begins his experiments in *Agronômico* from Campinas. 1938–The first shipment from Rio Grande do Sul to Germany is exported by Frederico Ortmann.

1941–Soy first enters agricultural statistical data of Rio Grande do Sul. 1945–Soy first enters agricultural statistical data of Sao Paulo. 1948–In order to add soy to *Patroa* cotton oil, Swift encourages planting in the interior of Sao Paulo.

1950–José Gomes da Silva begins the Soy Campaign in Sao Paulo, introducing new American varieties. 1951–Francisco de Jesus Vernetti begins to research soy at *Iapas*, Pelotas, Rio Grande do Sul; *Incobrasa* inaugurates its factory in Gravataí, Rio Grande do Sul, and launches the *Santa Rosa* oil, with technology brought by the Chinese who fled Mao Zhe Dong's revolution. 1952–*Sorol* produces soybean oil in Pelotas. 1955–Chinese entrepreneurs establish *Igol* in Santa Rosa and soy is planted to recover frosted coffee plantations in Paraná. 1957–In Porto Alegre, *Merlin* launches canned oil. 1958–*Samrig* inaugurates a factory in Esteio, Rio Grande do Sul, and launches the *Primor* oil and margarine; Shiro Miyasaka discovers a soybean variety that is less sensitive to the photoperiod in the Paraíba river valley; foundations of the *Federaçao das Cooperativas Tritícolas do Sul* (Southern Wheat Cooperatives Federation) (Fecotrigo).

1962–In Giruá, Rio Grande do Sul, Sadi Pilau establishes a factory. 1963–The Federal University of Viçosa, Minas Gerais, begins to study varieties adapted to the *cerrados.*

1966–Santa Rosa, the first great Brazilian variety, resulting from crosses of American strains, is launched at the First National Soy Festival. 1967–Operation Armadillo, in the interior of Rio Grande do Sul, a milestone of the couple wheat-soy, is financed by *Banco da Brasil*; first Soy Festival in Sao Joaquim da Barra, Sao Paulo. 1968–Romeu Kiihl returns from the U.S. after studying soy's ability to adapt to different latitudes. 1969–*Mineira* and *Viçoja* varieties launched by UFV.

1970–Soy begins to be planted in Mato Grosso (do Sul) and penetrates the *cerrados* of Goiás. 1971–*Olvebra* begins operation after the fusion of four factories from Rio Grande do Sul; the National Commission on Soy Research is established in the Ministry of Agriculture, which is responsible for launching BR seed varieties. 1972 April 4–*Ceval* is founded by the Hering company. Oct.–Begins regular operations in Gaspar, Santa Catarina. 1973–*Anderson Clayton*, *Cargill* and *Irmaos Pereira* factories are inaugurated in Ponta Grossa, Paraná. 1973–Soy prices boom in the international market. 1974–Settlers from Rio Grande do Sul visit the Chicago Stock Market.

1976–The National Center for Soy Research, of Embrapa, begins operation in Londrina, Paraná. The *Sadai* group, the biggest consumer of soybean meal, begins processing soy in a factory in Toledo, Paraná; *Perdigao* establishes a factory in Videira, Santa Catarina.

1980–Soy broadens the agricultural frontier to the *cerrados* in Bahia. 1981–*FT-Cristalina* variety is launched, suitable for the *cerrados.* 1982–The "Centralsul Scandal" exposes the crisis of the southern agriculture cooperatives; international credit to Brazil is cut by the International Monetary Fund. 1985–Beginning of the transference process of the soybean crushing industries to the Central-West.

1990–Soybean penetrates Maranhao and Piauí. 1994–National production record, consisting of more than 25 million tons.

1995–The established capacity of the soybean processing industry reaches 116,000 tons per day; soy businesses represent U.S. $7.5 billion–more than 1% of GNP. 1996–The federal government invests in waterways and railways to consolidate the agricultural frontiers of the Central-West. Address: 1. Journalist; 2. Photographer. Both: Brazil.

460. Kilman, Scott. 1997. Bountiful harvest: Giant Cargill resists pressure to go public as it pursues growth. Largest private firm in U.S. has quietly succeeded as a global presence: Some heirs want to cash in. *Wall Street Journal.* Jan. 9. p. A1, A4.
• ***Summary:*** Cargill executives have learned that it takes patience and long-term thinking and planning to succeed in commodities trading and processing. They don't want to "worry about some analysts' expectations for the next quarter." Cargill is an excellent example of the benefits of being private. It is often difficult to explain long-term plans to investors, especially after years of losses. Yet in the end many pay off in a big way–such as developing demand for fertilizer overseas. Cargill can take risks a publicly

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held company dare not take. The largest U.S. closely held company, and the 9th largest U.S. company overall, Cargill has annual revenue approaching $60 billion. Cargill is active worldwide; it has assets of $8 billion in 65 foreign nations and it trades with nearly 100 more. About 40% of the firm's assets are overseas–compared to only about 18% for arch-rival ADM, which nevertheless calls itself "Supermarket to the World." Today Cargill is riding a boom in global demand for food, and is the only U.S. company that can rival the huge old trading houses of Japan and Europe. It controls 25% of U.S. grain exports.

Most of Cargill's stock is owned by about 80 members of the MacMillan and Cargill families, which were united by marriage a century ago. But now a contingent led in part by heir Austen S. Cargill is forcefully advocating taking the company public so they can sell their shares; the market value is estimated at $12 billion. They have little interest in the family tradition of toiling in obscurity. In 1865 William Wallace Cargill, son of a Scottish sea captain, founded Cargill as a frontier grain elevator. His descendants have generally devoted their lives to the company, often starting at the bottom in obscure places.

Micek wants to keep Cargill private. He gives many good reasons. An illustration (dot-style) shows Ernest S. Micek. Three graphs show figures from 1986 to 1996: (1) Cargill sales have grown from $32 billion to $57 billion. (2) Net income has increased from $230 million to $870 million. (3) Employees have risen from 45,000 to 79,000. Address: Staff Reporter, Wall Street Journal.

461. *Ontario Soybean Growers' Marketing Board Newsletter.* 1997. Roundup Ready soys for '97. Feb. p. 2.
• ***Summary:*** One variety of Roundup-Ready soybeans is being offered in Canada by each of the following four companies: First Line, Pioneer Hi-Bred, and Cargill, and Novartis. A table shows the company name, variety name, CHU zone (2800-3400) and relative yield. "All these four transgenics are dark-hilum varieties. The first varieties of their type in Ontario, they yield slightly lower (3.1% to 5,8% lower) than their non-Roundup Ready competitors." Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

462. Golbitz, Peter. 1997. Agricultural biotechnology still a hot topic. *Bluebook Update* (*Bar Harbor, Maine*) 4(2):1-2. April/June.
• ***Summary:*** "It's been five months now since the first crops of genetically engineered soybeans, corn and cotton were harvested from U.S. fields. Although the dust has certainly settled by now, the debate over this technology's effectiveness and safety has yet to be resolved.

"The Crop Is In: 1996 was a pivotal year in the evolution of agricultural biotechnology. After years of research and development, government approval was finally received and genetically engineered seeds for three of the world's most important crops were planted in the United States.

"Perhaps the most highly publicized of these has been Monsanto Company's Roundup Ready (RR) soybeans. These seeds are genetically altered to be resistant to the company's popular glyphosate-based herbicide Roundup. According to Monsanto, roughly one million acres were planted in the U.S. last year. Now that the harvest is completed, Monsanto has been able to evaluate the performance of RR soybeans.

"First Year's Report Card: Numerous factors will affect soybean yield including variety, location and environmental factors. According to preliminary data collected from more than 75 locations in the Midwest, soybeans growers who planted RR soybean varieties and used Roundup as a weed control agent, experienced a yield advantage of approximately 5 percent, or nearly two bushels per acre.

"In addition to the crop yield data, Monsanto surveyed more than 1,000 farmers in November who used RR soybeans. These soybeans met or exceeded the expectations of 90 percent of the growers. More good news for the company was the finding that 79 percent said Roundup Ready soybeans represented a 'good' or 'very good' value and that 88 percent will either 'probably' or 'definitely' replant them next year.

"Monsanto expects 8 to 10 million acres of RR soybeans to be planted in the U.S. in 1997. That figure represents 13 to 16 percent of the estimated 64 million acre crop. In addition, 300,000 acres of RR soybeans have been planted in Argentina and field trials are scheduled to begin in Brazil later this year.

"Monsanto had also predicted that planting RR beans would significantly reduce the total amount of herbicide needed per acre to resist weeds. This result was confirmed in a report prepared for Monsanto by the independent agricultural market research firm, Sparks Companies, Inc. Records of RR soybean fields when compared to records of soybean fields with other herbicide programs, testified to reductions in herbicide usage which 'ranged from a high of 39 percent in the Southeast to a low of 9 percent in the East Central region of the United States. In the West Central region, herbicide usage was reduced by 16 percent, and in the Mid-South by 31 percent.'

"Opposition Still Strong: This environmentally positive result will likely do little to reduce the opposition for this technology by groups such as Greenpeace and The Pure Food Campaign, which are calling for a complete ban of all genetically engineered crops and food products. The 'Genetic Engineering Briefing Pack' published by Greenpeace in January 1997, contains a detailed list of their reasons for opposition to genetically engineered seeds. This report, based on their perceptions of the environmental costs of this technology, states a fear that 'the world as we know it' will end.

"Many of Greenpeace's reasons are based on valid

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concerns for the environment, however, in the view of some onlookers, the credibility of their message has been diminished by their radical demonstrations. Last November, Greenpeace launched a series of protests in the U.S. against grain giants Cargill and Archer Daniels Midland which included actions such as blocking cargo ships and chaining themselves to barges at an unloading facility.

"An editorial entitled, 'Unpalatable' in the *Wall Street Journal* of November 21, 1996 described these and other 'lobby' methods as a basis for labeling the group as 'crazies.' In direct reference to the same type of 'emotional' Greenpeace activities *Soybean Digest* editor, Syl Marking asked, 'Will Science Win Over Crackpots?' in his editorial of January 1997.

"In Europe, there have been widely publicized actions by Greenpeace, as well as by certain European country governments. Responding to consumer concerns and pressure, Austria and Luxembourg have currently placed a ban on the importation of Bt corn from Novartis (formerly Ciba-Geigy). France has lifted its restriction on the importation of the corn, but prohibited the planting of gene modified seed in France.

"There is widespread debate in Europe regarding the labeling of foods which contain genetically modified material. This discussion washed back on U.S. shores when a major natural food retail chain asked its suppliers to specify which of their products were made from genetically modified ingredients.

"All of the issues surrounding biotechnology will take time to sort out and resolve but one point seems to be clear–genetically engineered crops will play an ever increasing role in U.S. and world agriculture and food production.

"There are many references on the Internet for information on biotechnology–here are a few."

Dictionary of Science and Biotechnology http: //biotech.chem.indiana.edu/pages/dictionary.html

The Biotechnology Information Center http://www.nal.usda.gov/bic/

Biotechnology Information Institute http://www.bioinfo.com/biotech/

Global Agricultural Biotechnology Association http://www.lights.com/gaba/

Greenpeace International Home Page http://www.greenpeace.org/

Monsanto Company http://www.monsanto.com/cropprotection/

A photo shows Greenpeace activists, outside the Brussels headquarters of Unilever, standing below a large sign that states: "No Genetic Experiments with our Food."

463. Haumann, Barbara Fitch. 1997. Soy protein foods gain store space. *INFORM* (*AOCS*) 8(6):588-596. June.
• ***Summary:*** Contents: Introduction. Nutritional drive. Meat alternatives. Soymilk and tofu markets. Soybeans as vegetables. Emerging products. Products consumers want. Hurdles. Possible health claim? ("there have been discussions by soy interests of pursuing a health claim [from the FDA] on food labels"). School lunch opportunities (federal school lunch program). Product promotion. Nutraceuticals.

Soy protein foods sold in supermarkets are no longer targeted at only vegetarians; they're becoming mainstream products. Many U.S. consumers are decreasing their consumption of meat. USDA food intake surveys show that from 1977 to 1994 per capita beef consumption decreased 54% and pork consumption dropped 45%.

The leader in meat alternatives is Worthington Foods, which has seen sales rise approximately 20% in each of the past 3 years. Its Morningstar Farms brand, sold in frozen food sections in supermarkets and geared for mainstream consumers, represents 75% of the company's offerings.

PMS Foods, Inc. in Hutchinson, Kansas, is among the companies that make meat alternatives, including soy-based beef, chicken, ham, pepperoni, bacon, sausage-flavored crumble, sloppy joe mix, soy-based taco mix, and soy-based chili mix–which it sells wholesale, primarily to foodservice operations. Some of its products are used as ingredients in supermarket products–such as bacon bits and salad dressing mixes.

Steve Demos, founder and president of White Wave, jokes: "We're primarily a dairy without a cow. We 'milk' soybeans. Founded in 1977, the company now sells 54 retail products and produces about 125 tons a week of soy proteins via aqueous extraction. White Wave has up to 30 linear feet in the refrigerated sections in some natural food stores. White Wave has experienced 25-30% sales increases per year over the past decade.

The Soy Protein Council in Washington, DC, now has 3 members: ADM, Cargill Inc., and Central Soya; all produce soy protein concentrates, isolates, and soy flours. The council promotes the growth of the soy protein industry and works to broaden the acceptance of soy products in foods. The council's Web site is http://www.spcouncil.org.

Fourteen state soybean boards, the United Soybean Board, and the Soy Protein Council gave joined together to form the "Soy Protein Partnership," whose goal is to promote domestic soy protein use in human foods. Seven members of the partnership–the state soybean boards from Indiana, Iowa, Kansas, Michigan, Nebraska, Ohio, and South Dakota–are providing $270,000 to fund the partnership's first project, a "Food Manufacturer's Initiative." The group in using the slogan "New Food, New Uses: How soy protein can expand your business, to reach food marketing executives and food technologists and to increase their awareness of the demand for soy products and their use in food products.

Surveys by Wiese Research Associates have shown that consumer awareness concerning soy protein increased from 55% of consumers polled in 1991 to 79% in 1996. Likewise,

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those saying they wee likely to purchase a product if they knew it contained soy protein increased from 20% in 1988 to 32% in 1996.

In addition, a national Gallup survey conducted in 1996 for the Nebraska Soybean Board showed that 56% of the 600 school foodservice directors polled currently use soy products. And studies by the National Restaurant Association indicate that 97% if colleges and universities and 80% of restaurants have incorporated meatless entrees into their daily menus.

Schouten USA Inc. of Minnesota, whose parent company is the Schouten Group in the Netherlands, manufactures SoyLife, a soybean [sprout] extract containing 25-30 mg of isoflavones per gram. According to Laurent Leduc, Schouten USA's international marketing manager, it is presently used as an ingredient by more than 40 different vitamin and supplement companies as a source of isoflavones in their products, and is being incorporated into "functional foods" around the world. Leduc notes that research has indicated that consuming 60-80 mg of isoflavones a day may provide health benefits. He adds: "The only other way to get that much is by eating 8-9 ounces of tofu or drinking two-thirds of a liter of soymilk a day. The average American is not going to do that."

William Shurtleff of Soyfoods Center "said it currently is no longer usual to field questions from consumers in Midwestern states who would like to know how to incorporate soy as part of their diets to lower cholesterol.

"'I credit much of this to the state soybean checkoff boards that are promoting interest in soyfoods, particularly in the heartland. This is changing the demographics for the market throughout the United States. Within the past two years, these boards have collectively become the single biggest force promoting soyfoods in America.'" Address: Senior editor/writer for INFORM.

464. National Oilseed Processors Association. 1997. Yearbook and trading rules 1997-1998. Washington, DC. [iv] + 127 + 11 p. No index. 23 cm.

• ***Summary:*** On the cover (but not the title page) is written: Effective August 1, 1997. Contents: Constitution and by-laws. Officers and directors. Executive office. Members. Standing committees. Trading rules on soybean meal. Appendix to trading rules on soybean meal: Official methods of analysis (moisture, protein, crude fiber, oil {only method numbers listed}), sampling of soybean meal {at origin} (automatic mechanic sampler, pneumatic probe sampler, probe sampler), sampling of soybean meal (at barge loading transfer facilities), official weighmaster application, semi-annual scale report, certification of installation of automatic sampler & mechanical divider (at origin), semi-annual certification of automatic sampler & mechanical divider (at origin), voluntary checklist for semi-annual certification of sampler & divider (at origin), certification of installation of automatic sampler & mechanical divider (at barge loading transfer facility), semi-annual certification of automatic sampler & mechanical divider (at barge loading transfer facility), voluntary checklist for semi-annual certification of sampler & divider (at barge loading transfer facility), official referee laboratories (meal), official NOPA soybean meal sample bag. Soybean meal export trading rules: Minimum blending procedures for export meal blended at ports, sampling of soybean meal (at vessel loading facilities), weighing of soybean meal (at vessel loading facilities), certification of installation of automatic sampler & mechanical divider (at vessel loading facility), semi-annual certification of automatic sampler & mechanical divider (at vessel loading facility), semi-annual certification of scales at vessel loading facilities. Trading rules on soybean oil. Sales contract. Definitions of grade and quality of export oils. Soybean lecithin specifications. Appendix to trading rules on soybean oil: Inspection, grading soybean oil for color (NOPA tentative method), methods of analysis (A.O.C.S. official methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses (iodine value, unsaponifiable, break test); refining byproduct lipid, acidulated (refining byproduct lipid and tank bottoms), official weighmaster application, semi-annual scale report, official referee chemists (oil). Soybean oil export trading rules. Uniform soybean oil export contract. Foreign trade definitions (for information purposes only) Appendix 1.

The section on officers, executive committee, and board of directors (p. 7-8) gives the name, company affiliation, and phone number of each person. Officers (executive committee)–Chairman: William B. Campbell, Central Soya Company, Inc. Chairman-elect: Richard Galloway, Quincy Soybean Company. Secretary / Treasurer: Albert J. Ambrose, Harvest States / Honeymead Processing and Refining. Immediate past chairman: John A. Burritt, Ag Processing Inc a cooperative.

Executive staff: President: Sheldon J. Hauck. Executive vice president: Alen F. Johnson.

Board of directors (alphabetically by company; each member company may have up to two representatives on the board; only the first of these may vote): James W. Lindsay & John A. Burritt, Ag Processing Inc a cooperative. John G. Reed, Jr. & John D. McNamara, Archer Daniels Midland Co. Archie Gwathmey & Charles Bussey, Bunge Corporation. Wayne Teddy & John March, Cargill, Inc. William B. Campbell & Carl Hausmann, Central Soya Co., Inc. James D. Tibbets & Al Ambrose, Harvest States / Honeymead Processing and Refining. Patrick E. Wright & Henry E. O'Bryan Owensboro Grain Co., Inc. Richard L. Wiley & L. Weldon Sander, Perdue Farms, Inc. Richard Galloway & Larry Horn, Quincy Soybean Co. Gerard A. Delatte & Richard E. Bell, Riceland Foods, Inc. Thomas L. Harper, Southern Soya Corp. Rodney Christianson & David Thompson, South Dakota Soybean Processors, D.

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Daryl Houghton & George C. White, Townsends, Inc. Cliff Meeuwsen & Arlen Meeuwsen, Zealand Farm Soya.

Executive office, Washington, DC: President, Sheldon J. Hauck (Email: shauck@nopa.org). Executive vice president: Allen F. Johnson. Director of regulatory affairs: David C. Allor. Executive asst.: Hady J. Nash. General counsel: Elroy H. Wolff, Sidley & Austin. Special consultant: C. Lockwood Marine, Ft. Wayne, Indiana.

Members (listed alphabetically by company; within each company, first the name of the official Association representative {who is on the Board and votes}, followed by the other personal members listed alphabetically by surname. For example, Archer Daniels Midland Co., the company with the most personal members, has 34. After the name of each personal member is given with his address and phone number. In the listing below, the number of personal members is shown in parentheses after the name of each company, followed by city and state of the various locations): Ag Processing Inc a cooperative (25); Eagle Grove, Iowa; Manning, Iowa; Mason City, Iowa; Sergeant Bluff, Iowa; Sheldon, Iowa; Dawson, Minnesota; St. Joseph, Missouri. Omaha, Nebraska. Archer Daniels Midland Co. (23); Archer Daniels Midland Co. (34); Little Rock, Arkansas; Augusta, Georgia; Valdosta, Georgia; Decatur, Illinois; Galesburg, Illinois; Granite City, Illinois; Taylorville, Illinois; Frankfort, Indiana; Des Moines, Iowa; Fredonia, Kansas; Destrehan, Louisiana; Mankato, Minnesota; Red Wing, Minnesota; Kansas City, Missouri; Mexico, Missouri; Clarksdale, Mississippi; Fremont, Nebraska; Lincoln, Nebraska; Fostoria, Ohio; Kershaw, South Carolina; Memphis, Tennessee. Bunge Corp. (16); Decatur, Alabama; Cairo, Illinois; Danville, Illinois; Emporia, Kansas; Destrehan, Louisiana; St. Marks, Mississippi; Vicksburg, Mississippi; St. Louis, Missouri. Cargill, Inc. (19); Guntersville, Alabama Osceola, Arkansas; Gainesville, Georgia; Lafayette, Indiana; Cedar Rapids, Iowa; Des Moines, Iowa; Iowa Falls, Iowa; Sioux City, Iowa; Washington, Iowa; Bloomington, Illinois; Chicago, Illinois; Wichita, Kansas; Burnsville, Minnesota; Minneapolis, Minnesota; South Savage, Minnesota; Wayzata, Minnesota; Kansas City, Missouri; Fayetteville, North Carolina; Raleigh, North Carolina; Sidney, Ohio; Memphis, Tennessee; Chesapeake, Virginia. Central Soya Co., Inc. (11); Gibson City, Illinois; Decatur, Indiana; Fort Wayne, Indiana; Indianapolis, Indiana; Belmond, Iowa; Bellevue, Ohio; Marion, Ohio; Delphos, Ohio; Chattanooga, Tennessee. Harvest States / Honeymead Processing and Refining. (5); Mankato, Minnesota. Owensboro Grain Co., Inc. (4); Owensboro, Kentucky. Perdue Farms, Inc. (4); Salisbury, Maryland; Cofield, North Carolina. Quincy Soybean Co. (4); Helena, Arkansas, Quincy, Illinois. Riceland Foods, Inc. (5); Stuttgart, Arkansas. South Dakota Soybean Processors (3); Volga, South Dakota. Southern Soya Corp. (2); Estill, South Carolina. Townsend's Inc. (2); Millsboro, Delaware. Zealand Farm Soya (3); Zealand, Michigan.

Associate Members: AC Humco, Memphis, Tennessee. ADM Agri-Industries Ltd., Windsor, Ontario, Canada. Alfred C. Toepfer International, Inc., Minneapolis, Minnesota. Amber, Inc., Tarrytown, New York. C&T Quincy, Richmond, Virginia. CanAmera Foods, Oakville, Ontario, Canada. Columbia Grain & Ingredients, Inc., Wellborn, Florida. Commodity Specialists Company, Minneapolis, Minnesota. Con Agra Poultry Co., El Dorado, Arkansas. Continental Grain Co., Chicago, Illinois. ContiQuincyBunge, New York City, New York. Garnac Grain Co., Overland Park, Kansas. Hunt-Wesson, Inc., Fullerton, California. Iowa Select Farms, Iowa Falls, Iowa. Lipton, Englewood Cliffs, New Jersey. Louis Dreyfus, Wilton, Connecticut. Noga Commodities (Overseas), Inc., New York City. Oleostates, Inc., Tucson, Arizona. Pilgrim's Pride Corp., Pittsburg, Texas. Procter & Gamble Co., Cincinnati, Ohio. Schouten USA Inc., Minneapolis, Minnesota.

Standing committees: For each committee, the function of the committee, the names of all members (with the chairman designated), with the company and company address of each are given–Crusher committees: Canola, flaxseed, safflower seed, sunflower seed. International trade committee. Government and public relations committee. Industry and grower relations committee. Soybean meal trading rules committee. Soybean oil trading rules committee. Technical, research, environmental, and safety, health, and loss prevention (TESH) committee. Technical. Address: 1255 Twenty-Third St., N.W., Washington, DC 20037. Phone: 202/452-8040. Fax: 202/835-0400.

465. Upbin, Bruce. 1997. Vindication: A year ago the news was filled with scandal stories about Archer-Daniels-Midland. A classic case of media overreaction. *Forbes.* Nov. 17. p. 52-53, 56.

• ***Summary:*** A pie chart (p. 56) shows the market shares of major U.S. soybean crushers: ADM 31%, Cargill 24%, Bunge 13%, AGP 10%, Central Soya 7%, Others 15%. Other pie charts show that ADM is also the single largest cocoa processor, grain miller, and high fructose corn syrup maker in the U.S.

A graph, titled "ADM's spending spree," shows gross additions to plant from 1988-1997. Spending hit $1 billion in 1997.

ADM is spending its money in the areas where its growth is greatest–in emerging markets–such as China, which will become the world's 4th largest soybean importer by the end of next year, projected to import about 2.7 million tons of soybeans and 3.4 million tons of soybean meal. The more meat and poultry the Chinese consume, the more soybeans they will need. A color photo shows Allen Andreas, who notes that China has no chance of being self sufficient in soybeans.

In Sept. 1997, ADM swapped $300 million of its stock

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for Moorman Manufacturing Co., a soybean processor in Quincy, Illinois, with $1.2 billion in annual sales. This is ADM's first soybean crushing plant on the Mississippi River. It costs only $2 per ton to ship soybean meal by barge from Quincy to St. Louis (Missouri) versus $6 per ton from ADM's big plant in Decatur, Illinois, to St. Louis.

ADM stock has rebounded from a low of $13 in mid-1995 to $24 at present.

466. Limpert, Bill. 1997. Functional and nonfunctional soy protein concentrates. Isoflavones in soy protein products (Interview). *SoyaScan Notes.* Nov. 18. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Cargill does not presently make soy protein concentrates; the two big manufacturers worldwide are ADM and Central Soya. Bill would guess that Central Soya may have a slightly larger market share–it is their flagship soy protein product. They each use two different methods to make these concentrates: the aqueous alcohol wash (for non-functional concentrates, which have high levels of denatured proteins) and the isoelectric wash (for functional concentrates, which have water absorption, higher solubility, etc.). Of the three major soy protein products (flour, concentrates, and isolates), soy flour has the highest level of all the different isoflavones. Since isoflavones are soluble in alcohol, they are absent in concentrates made using the aqueous alcohol wash. The normal way to get a *functional* soy protein concentrate is to use the an isoelectric wash–where only water (no alcohol) is used, at a pH of 4.2 to 4.5. A concentrate made in this way will have a fairly low level of isoflavones, but not as low as the level in soy protein isolates–even though not made using an alcohol wash. Bill is sure that PTI has far more people working on isolates than ADM.

One important, basic question is: Can you produce a functional soy protein concentrate using the aqueous alcohol wash system? The resulting product would not contain isoflavones.

ADM now pulls off one of their extraction streams to get concentrated isoflavones–which they plan to market as a separate product. They have all the pieces in place to make commercial isoflavones. At the IFT show they even had isoflavones on the front page of their catalog, even though they didn't offer the product inside! ADM's strength is that they offer all the soy protein products–and now they are offering "nutraceuticals" as well! Address: Research Chemist, Technical Services Manager, Cargill, Inc., Research Dep., P.O. Box 5699, Minneapolis, Minnesota 55440. Phone: 612-742-5365.

467. *Soybean Digest.* 1997. 1998 New variety preview: Sponsored by Monsanto. Nov. p. 17-32.

• ***Summary:*** Page 18 begins like an article: "Roundup Ready is hot trend in new varieties: But yield is still top profit key, so consider all traits for 1998 selections," by Syl Marking. The text begins with a half-page introduction, in which he repeats, "Final yield, with or without the Roundup Ready gene, is still the bottom line."

Yet nowhere are we given the yield of any soybean varieties. Nowhere are we told that this insert is an advertisement. Nowhere are varieties created by public / university breeders represented. Nowhere are we told that all or most of these varieties contain the Roundup Ready gene, licensed from Monsanto, and those varieties must be sprayed with Roundup herbicide made only by Monsanto.

Given all these major omissions, the varieties that follow are organized by maturity group. Soybean Digest has limited each seed company to four entries. To give you an idea of what information is given, we will quote the first four entries in Group I (p. 19-20):

"Gold Country Seed: GCS Raydor is a very early Group I featuring high yield potential, the Rps6 gene for PRR resistance and excellent lodging resistance. It has dominated its maturity class in company replicated tests since 1993. White mold and iron deficiency chlorosis tolerance are both rated above average. Protein, 34.7%; oil, 17.9%.

"University of Minnesota: MN 1301, an early Group I about three days later than Lambert, has outyielded Lambert by about 5% in Minnesota and regional tests. It carries the Rps1 gene for PRR resistance and has good iron deficiency chlorosis resistance. Of average height and normal plant canopy, it performs well in narrow rows. Protein, 37.2%; oil, 17.3%.

"Pioneer Hi-Bred International: 91B01, an early Group I, features the Rps1k gene for multirace PRR resistance and average tolerance to BSR and iron deficiency chlorosis. In company tests it outyielded 9091 by 3.8 bu/acre. Standability is rated very good; emergence, above average. It is adapted to a wide range of environments, but particularly where PRR is a problem. Protein, 35%; oil, 19%.

"Latham Seed Co.: 150 is an early Group I that offers excellent stress tolerance, excellent emergence capability and high yield potential for its maturity class. It has very good tolerance to PRR and good standability. It is a medium-short and bushy plant type. No protein or oil data were available."

Other seed companies not mentioned above include: Cenex/Land O'Lakes, Novartis Seeds (formed from Northrup King and Ciba Seeds), Iowa State University, Garst Seed Co., Growmark, Golden Harvest, Dekalb Genetics, Cargill Hybrid Seeds, Stine Seed Co., Asgrow Seed Co., Terra Industries, etc.

468. Kantz, Brian. 1997. Seed money: America's top ten seed companies. *Farm Chemicals* (*Willoughby, Ohio*) 160(13):48, 50, 52, 53. Dec.

• ***Summary:*** America's ten largest seed companies, based on 1996 sales of all crops, are: (1) Pioneer Hi-Bred International $1,721 million. (2) Novartis Seeds $959 million. (3)

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Limagrain $552 million. (4) ELM / Seminis $525 million. (5) DeKalb Genetics $388 million. (6) Asgrow Seed Co. $175 million* (* = estimate). (7) Garst Seed Co. $165 million*. (8) Mycogen Seeds $156 million. (9) Cargill Hybrid Seeds $155 million*. (10) Delta & Pine Land $153 million.

Nearly all of America's traditional ag chem ("agricultural chemical") dealerships sell seed, and the percentage of their overall sales attributed to seed sales is generally growing each year. Thus, seed–especially "transgenic seed"–has become a big opportunity in the past few years for these dealerships.

Many of the big seed companies are also involved in crop protection–one more bit of evidence that the line is blurring between crop protection and seed. Examples: DuPont, a major maker of ag chemicals that protect crops, has a 20% stake in #1 ranked Pioneer. Novartis owns Novartis Seeds. Monsanto has interests in Seminis, DeKalb, Asgrow, and Delta & Pine Land. DowElanco has a stake in Mycogen. Zeneca owns part of Garst.

No. 1, Pioneer, America's pre-eminent seed company with a long history and strong germplasm base, invested a massive $130 million in R&D during 1997, and is positioning itself at the forefront of seed innovation. "Pioneer now touts performance–yield plus value-added characteristics–as the true measure of seed quality." Pioneer has long been identified as the leader in hybrid corn; the company owns 44% of the U.S. seedcorn market, and corn generates more than 85% of Pioneer's revenues. Less well known is Pioneer's strength in soybeans–18% of the U.S. market. In the fall of 1996 Pioneer (whose president and CEO is Charles S. Johnson) and DuPont created an equally owned joint venture research company named Optimum Quality Grains.

No. 2, Novartis Seeds (of Golden Valley, Minnesota) was formed on 1 Jan. 1997 through the blockbuster merger of Ciba Seeds and Northrup King Co. That merger was possible because of the mid-1996 merger of pharmaceutical giants Sandoz and Ciba-Geigy. Novartis is also the home of some of the seed industry's other familiar names: Rogers, S&G, Hilleshog, Pride, Stauffer, and Funks G. Novartis Seeds is the industry leader in *Bacillus thuringiensis* (Bt) corn, and is expected to spend more than $100 million on R&D in 1997, guided by president & CEO Edward T. Shonsey.

No. 3, Limagrain, based in Chappes, France, is the top seed producer in the European Union (EU), as well as a premier producer of wheat and other field crop seeds in the USA. Limagrain owns historic Vilmorin in France. In the U.S., the Limagrain Group owns (among others) Callahan-Westfield (of Westfield, Indiana), a marketer of corn and soybean seeds, and Vilmorin (of Empire, California) a marketer of vegetable seeds. In addition, the Limagrain Genetics Research division in Lebanon, Indiana, studies uses and advancements for corn, soybeans, and canola in North America.

No. 4, ELM / Seminis. ELM stands for Empresas La Moderna of Mexico. They formed Seminis in the mid-1990s by combining two long-time vegetable industry leaders: The vegetable division of Asgrow and Petoseed. "What Pioneer is to corn, Seminis Vegetable Seeds (Saticoy, California) is to vegetables. And even that may be an understatement." The company has the largest vegetable seed germplasm collection in the world. This year ELM agreed to a technical alliance with Monsanto.

No. 5, DeKalb Genetics Corp. (DeKalb, Illinois), is best known for its corn seeds; it owns 11% of the North American corn market, second only to Pioneer. It is also a major seller of Roundup Ready soybeans–a product which helped increase company soybean sales by 21% this year. Monsanto owns 40% of DeKalb and the companies have a long-term research collaboration effort. The CEO is Bruce P. Bickner.

No. 6, Asgrow Seed Co. (Des Moines, Iowa) has a private breeding that has produced some notable "soybean" firsts in the past 20 years: the first variety with iron-chlorosis tolerance, the first with resistance to races of soybean cyst nematode, the first with Phytophthora root rot protection, the first with imidazolinone (IMI) herbicide resistance, and one of the first with tolerance to Roundup herbicide. Asgrow remains a market leader in Roundup Ready soybeans. Co-presidents of Asgrow Seed Co. / Hartz Seed Co. are John Schillinger and Danny Kennedy.

No. 7, Garst Seed Co. (Slater, Iowa) changed its name to ICI Seeds, then to ICI Garst, then back to Garst. Operating under the corporate umbrella of Zeneca, it has emerged as one of the leaders in the science of gene-stacking, which involves taking multiple traits such as resistance to herbicides, insects, diseases, and poor soil, and combining them in a single hybrid. Developments in this multiple-resistance area full under the G-STAC program, which stands for "Garst State of the Art Crops." Coming in 1998 are corn hybrids stacked with IMI, Bt, and Liberty protection. Despite biotech advances, Garst adamantly stands by its philosophy that yield comes first–whether in corn, soybeans, alfalfa, sorghum, or canola. "Still, the company projects that trait-driven technologies will account for 83% of its sales by 2001." President: Col Seccombe.

No. 8, Mycogen Seeds (San Diego, California) is the leading U.S. seller of sunflower seeds, but also sells corn and soybeans. DowElanco owns a majority of the company.

No. 9, Cargill Hybrid Seeds. Privately owned Cargill, Inc. (Minneapolis, Minnesota), owner of this seed company, had sales of $56 billion in fiscal year 1997–making it one of the largest food- and agriculture-related companies in the world. Cargill's focus is now on food-corn hybrids. Seed company head is Brian Hill.

No. 10, Delta & Pine Land Co. (Scott, Mississippi) has long been the U.S. leader in cotton seeds, controlling more than 70% of the U.S. cotton seed market in 1996. D&PL's

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flagship brand is Deltapine, which alone owns 42% of the market. The company is working with Monsanto to develop the Bt cotton technology and Roundup Ready cotton. Overall, USDA estimates show that almost 25% of U.S. cotton acreage in 1997 was devoted to transgenic varieties from D&PL. Chairman and CEO is Roger D. Malkin. The company breeds and markets soybean seed as well. Small portrait photos show most of the company heads mentioned.

469. Fischer, Bruno. 1998. Update on soymilk in Europe: Sojinal, Alpro and Nutrition et Soja (Interview). *SoyaScan Notes.* March 3. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** In mid-1993 Sojinal (of Issenheim, France) was purchased by a Swiss group named B&K Industry Holdings. The heirs got much of their money from disinvesting in weapons and ammunitions. Then in December 1996 Alpro (in Belgium) bought Sojinal from B&K. They now make mostly sterilized pre-pack tofu patties and other related meat alternatives. In Bruno's opinion these products are not very good–they don't fit anywhere.

Alpro dominates the European market for soymilk and soymilk products. They do a lot of private label packaging in their factory, and they now make a little pudding in a cup with a peel-off lid. Bruno heard that in 1995 they had sales of 50 million German marks. Note: In March 1998 one German mark was worth about $0.55. So, very roughly, 50 million would be worth about $27 million.

Alpro now also makes rice drink, and in 1995 launched a rice beverage made by Alpro and packaged in glass bottles.

In about Feb. 1998 Vandemoortele, Alpro's parent company, sold all of its margarine manufacturing operations to Cargill. Now Vandemoortele has only Alpro and its oilseed crushing operations.

Nutrition et Soja (in Revel, near Toulouse, France) no longer sells their soymilk in Tetra Pak cartons–so they must be using it as an ingredient in their own products.

DE-VAU-GE (which made the Grano Vita line) no longer makes soymilk. Address: Im Auel 88, 53783 Aetorf, Germany. Phone: 49-2243-4021.

470. *New York Times.* 1998. Monsanto-Cargill genetic venture. May 15. p. D3.

• ***Summary:*** In a joint venture to develop "genetically enhanced food and feed products," Cargill will process and deliver crops produced by Monsanto.

"On Monday, Monsanto agreed to buy two seed companies, the DeKalb Genetics Corporation, and the Delta and Pine Land Company, for a combined $4.1 billion in cash and stock."

471. Kilman, Scott; Warren, Susan. 1998. Old rivals fight for new turf–Biotech crops. *Wall Street Journal.* May 27. p. B1, B7.

• ***Summary:*** "Monsanto Co. and DuPont Co. are betting the farm in bids to transform themselves into the Coke and Pepsi of genetically engineered crops." Although the first transgenic seeds were introduced only 3 years ago, today about 50% of U.S. cotton fields, 40% of soybean fields, and 20% of corn fields grow genetically altered crops.

Monsanto (of St. Louis, Missouri) and DuPont (of Wilmington, Delaware) have long competed as major chemical companies. But now both have started to compete in the new field of biotechnology by paying big money for major acquisitions. DuPont has paid $1.7 billion for a 20% stake in Pioneer Hi-Bred International Inc., the No. 1 U.S. seed producer, and $1.5 billion for Protein Technologies International, the nation's leader in making soy protein products.

Monsanto has paid $2.3 billion for the rest of DeKalb Genetics Corp, the No. 2 U.S. seed producer, and more than a $1 billion for Delta & Pine Land Co., the giant cotton seed producer.

Monsanto is forming a joint venture with Cargill, which will use Cargill's vast system of "rural grain elevators to contract with farmers to grow genetically engineered crops." Note: This could eventually lead to a restructuring of the farm industry, to resemble that of the poultry industry.

The decreasing number of independent seed companies is making both U.S. farm organizations and consumer groups nervous. Address: Staff reporters.

472. Smith, Rod. 1998. Bunge International to accelerate soybean strategy. *Feedstuffs.* June 1. p. 5, 8.

• ***Summary:*** Bunge International (BI) Ltd., founded in 1818 and headquartered in Sao Paulo, Brazil, is the third largest soybean processor in the world and the largest exporter of soybean meal and oil. Bunge Corp. based in St. Louis, Missouri, is the third largest soybean processor in the USA. The International company is the controlling holder of Ceval Alimentos, based in Gaspar, Brazil, the largest soybean processor in Latin America, and a subsidiary of Guipeba. Bunge is also a major processor in Argentina, and a partner in Moyresa, based in Barcelona, Spain, the largest oilseed processor in Spain.

The three largest soybean processors worldwide are Archer Daniels Midland (24%), Cargill, Inc. (21%), and Bunge International (15%).

In 1994 BI began a restructuring strategy to sell non-agriculture and non-food businesses in order to concentrate on its core segment in grain marketing, oilseed processing, and fertilizer production–according to Oscar Bernardes, the CEO of Bunge International. In 1997 the company had total sales of $13 billion, of which $9 billion (about two-thirds) came from agriculture businesses. Over the next 5 years, BI plans to invest more than $1 billion in agribusinesses, mainly in Argentina and Brazil, two countries with acreage available for soybean planting. It will also invest in fertilizer

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production. Address: Staff Editor.

473. Kilman, Scott. 1998. Monsanto to buy Cargill foreign seed business. *Wall Street Journal.* June 30. p. A-4. Western ed.
• ***Summary:*** In a move that expands the crop biotechnology race to overseas, Monsanto Company has agreed to pay $1.4 billion for Cargill's international seed operations. The deal continues Monsanto's shopping spree for seed businesses. Since early 1996 Monsanto's Chief Executive Robert B. Shapiro has spent $8.1 billion acquiring seed companies and biotechnology capability. On May 14 of this year Monsanto and Cargill tied their biotech fortunes together when they formed a joint venture in which it is planned that Cargill will eventually contract with farmers to grow millions of acres of crops containing Monsanto's genes. About 40% of U.S. soybean acreage and half the cotton acreage grows crops that have been engineered to tolerate exposure to powerful weed killers.

This deal especially strengthens Monsanto's position in Latin American countries such as Brazil and Argentina against archrival Pioneer Hi-Bred International, which has a biotech joint venture with DuPont Co. The Pioneer-DuPont venture is bigger than Monsanto's in Europe, and the Swiss pharmaceutical giant Novartis is another major international seed company.

In fiscal 1997 Cargill rang up $56 billion in sales. It rarely sells its businesses, but Monsanto made an offer it couldn't refuse; moreover Cargill does not have the biotech know-how to remain competitive on its own–according to Fritz Corrigan, president of Cargill's agricultural group. As part of the deal, Cargill's farm supply business abroad, which supplies farmers with everything from fertilizer to fuel, would be able to sell Monsanto seeds. Mr. Corrigan said that Cargill is also considering selling its U.S. seed business, which controls about 4% of the market for seed corn. Address: Staff Reporter.

474. Kilman, Scott. 1998. Cargill searches for a corporate identity: Advertising. *Wall Street Journal.* July 23. p. B-11.
• ***Summary:*** "Cargill Inc., the biggest American company without an image, wants one."

Cargill is the largest privately owned company in America, with fiscal 1997 revenues of more than $56 billion. Cargill operates 25% of America's oilseed crushing plants. But most Americans have never heard of Cargill and don't know what the company does. Its name doesn't even show up in supermarkets. The commodity processing giant, based in Minneapolis, has hired hometown ad agency Martin/Williams Advertising to create an image for the company. With the number of farmers in America steadily decreasing, and farm size swelling, Cargill is competing with other grain and oilseed processors for the loyalty of increasingly sophisticated farm operators. Cargill's rival, ADM, is well recognized because of its ongoing "Supermarket to the World" campaign. But Cargill must be careful not to confuse itself with ADM, which has been embroiled in a price-fixing scandal for the past three years.

Cargill is probably the largest U.S. company that Americans know the least about–"even though its businesses handle much of what ends up on their dining plates each day."

"Cargill executives and family have preferred to stay out of the spotlight"–in part "because the commodity business is cyclical, and profits often swing wildly from year to year." And in part to avoid the impatience of Wall Street analysts and of shareholders who may expect regular dividends. Address: Staff reporters.

475. Scott, Mary. 1998. Monsanto to buy Cargill's European division. *Natural Foods Merchandiser.* Aug. p. 23.
• ***Summary:*** Monsanto Co. announced it will buy Cargill Inc.'s international seed operations for $1.4 billion. The deal gives Monsanto further access to overseas markets where it can sell corn that creates its own insecticide and soybeans that can tolerate spraying with the powerful Roundup herbicide.

Earlier this spring the two giant companies established a joint venture to merge Monsanto's expertise in biotechnology with Cargill's experience in grain processing and feed production. Cargill, based in Minneapolis, Minnesota, has been slow to jump on the genetic engineering bandwagon.

476. Horvath, Jeffrey M. 1998. Re: Biodiesel progress during FY 1998. Letter to Mike Youngerberg, Minnesota Soybean Research & Promotion Council, North Mankato, MN 56003, Oct. 23. 1 + 7 p. Typed, with signature on letterhead.
• ***Summary:*** "Fiscal Year 1998 has been the most significant and eventful year yet for the farmer's biodiesel commercialization effort... Five products (SoyShield, SoyGuard, Soy Power, Agri-Guard and Soy Gold) are now being marketed to and by the petroleum industry. Congress has passed legislation designed to *sell* biodiesel fuel. President Clinton included biodiesel in his National Alternative Fuels Week proclamation and Missouri's Governor Carnahan declared the third week in May as National Biodiesel Week." Both ADM and Cargill "are in the pre-planning stages of biodiesel production."

Attached are the following reports: (1) National Biodiesel Board FY98 Final Report (3 p.). (2) Petroleum Alliance Program final report (3 p.). (3) Final report for Petroleum Partnership and Alliance Project (6 p.). Address: Chief Executive Officer, National Biodiesel Board [Jefferson City, Missouri].

477. Kilman, Scott.; Lipin, Steven. 1998. Cargill in talks to buy rival's grain assets: Continental Grain Co. deal could raise concerns of antitrust regulators. *Wall Street Journal.*

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Nov. 10.
• ***Summary:*** Cargill is in discussions to take over the grain assets of its longtime rival, Continental Grain Co. Since Cargill is the largest U.S. grain exporter, and Continental is No. 2, the deal could raise antitrust concerns. Many farm groups are worried about the shrinking number of companies that buy their products–and the reduced competition.

Cargill is the nation's largest private company and Continental is about No. 3.

If the deal goes through, it could close a chapter in the secretive grain-trading business of the famous Fribourg family, which has owned Continental Grain for 185 years. In 1940, as World War II was escalating, the Fribourgs moved their headquarters to New York from Paris. Address: Staff Reporter, Wall Street Journal.

478. Cargill, Inc. 1998. Cargill to purchase Continental's worldwide grain assets (News release). Minneapolis, Minnesota. 2 p.
• ***Summary:*** "Minneapolis / New York–Cargill, Inc. and Continental Grain Co. announced today that they have signed a definitive agreement for Cargill to acquire Continental's worldwide commodity marketing business. The transaction includes Continental's grain storage, transportation, export and trading operations in North America, Europe, Latin America, and Asia. Not included are Continental's domestic and international poultry, pork, cattle, aquaculture, flour milling, animal feed and nutrition business... The transaction is expected to be completed in the first quarter of 1999. Terms were not disclosed." Paul Fribourg is Chairman and CEO of Continental. Ernest S. Micek is CEO and Chairman of Cargill.

Talk with Bill Limpert, Research Chemist at Cargill in Minneapolis. 1999. May 12. This agreement, which was announced about 6 months ago, is subject to regulatory approval. Some people are opposed to this deal because they think it will give Cargill too big a piece of the pie. There is a lot of speculation in the industry as to whether the deal will work out or not. Continental has about 10% of the U.S. business they are selling; they are much more than just an international grain trader. Address: Minneapolis, Minnesota. Phone: 612-742-6218.

479. Golbitz, Peter. 1998. New business opportunities emerge as biotech creates ripples across the market. *Bluebook Update* (*Bar Harbor, Maine*) 5(4):4-5. Oct/Dec.
• ***Summary:*** "It would be an understatement to say that the past few years have been an interesting time in the field of agricultural products. The rapid introduction of biotechnology into farming practices and food products was like a stone being thrown into a still pond, with ripples emanating slowly outward until the whole body of water has in some way become stirred and affected.

"One immediate result has been a virtual wave of acquisitions, joint ventures and business mergers in the seed and processing industry. Another has been the formation of new smaller businesses, designed to fill fresh niches created in the marketplace.

"What both large and small companies have in common is a realization that we are at the threshold of a new age in agricultural and food production, and that there are new market and business opportunities to develop in this time of change.

"'The introduction of GMO soybeans has created an opening in the niche market for non-GMO and organic soybeans, and has brought to light the whole area of identity preservation,' says Marlyn Jorgensen, Vice President of Iowa Soy Specialties in Vinton, Iowa.

"The Influence of Biotechnology: When one looks at the widespread use of biotechnology in agriculture today, its hard to believe that commercially, agricultural products produced using biotechnology have only been in the market for five years. In fact, it's been only two years since we saw the first planting and harvesting of genetically modified soybeans in the U.S. designed to be resistant to Monsanto Company's Roundup Ready herbicide. In that short time, the planting of Roundup Ready soybeans has increased 25 fold in the U.S. alone and varieties with this trait are being tested or planted in Canada, Argentina and Brazil. Monsanto estimates that 40% of the U.S. crop and 20% of the world crop in 1998 was planted with Roundup Ready soybeans.

"Roundup Ready soybeans are part of the 'first generation' of biotech seeds–those which offer benefits to the farmer, such as lower chemical input and reduced farming costs. Other seeds which are part of this first generation include those with specific pest, disease or virus resistance.

"The 'second generation' of seeds now being introduced offer processor, end-user and consumer specific benefits such as increased levels of protein, modified and healthier fats, modified carbohydrates, changes in flavor characteristics and increased levels of desired phytochemicals. Many of these processor beneficial varieties have been derived using traditional, non-transgenic breeding practices, while others have been born in the biotech lab.

"Now that we have this new technology stirring up the once relatively placid waters of the market, what new business opportunities will eventually become clear?

"Non-GMO Commodity Soybeans: Since there are no apparent differences or distinct features in the first generation of farmer-beneficial GMO-soybeans in regards to basic composition, U.S. government regulations do not require that GMO soybeans be separated from non-GMO soybeans on the commodity level. Accordingly, both types are freely mixed at county elevators and grain terminals.

"As a result, opportunities exist for those businesses which can procure and process large quantities of segregated non-GMO commodity soybeans at near commodity price.

"'We initially approached our business from more of an

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IP perspective than non-GMO, but now that we have looked into it, the non-GMO potential has become more significant,' says Jim Skiff, President of U.S. Soy LLC, a new Mattoon, Illinois-based specialty soybean dealer. 'I have just returned from a trip to Europe and was surprised to see just how big the GMO issue there still is. I didn't meet with one company who can use GMO soybeans due to consumer backlash. I feel that we [United States] have definitely lost markets in Europe due to the GMO issue and that Brazil has picked up the business. The market for non-GMO soybeans is huge.'

"GMO Soybeans with Processor Benefits: New business opportunities exist as well based on using new GMO or IP varieties of soybeans to create new food or pharmaceutical products. 'We expect that much of our future growth will come from selling processed products made from identity preserved soybeans, such as those which can produce specialty soy oils and textured soy products,' reports Mr. Jorgensen, whose company processes IP soy- beans into food ingredients. "Eighty-five to ninety percent of the demand for new products is coming from the concern for specific traits and healthful attributes of the soybean." The seed breeders themselves also realize the need to clear a path directly to the processors and beyond. For example, last year, DuPont not only formed a joint venture with seed producer Pioneer Hi-Bred, but also acquired Protein Technologies International, the world's largest processor of isolated soy proteins. And Monsanto, in addition to the acquisition of a number of seed companies during the past year, announced a joint venture with the grain processor Cargill.

"With value-added soybeans, opportunities exist not only for seed companies and processors, but also for farmers willing to grow particular varieties and harvest them as IP soybeans.

"'Because there will be good premiums available to the grower, a large number of farmers are interested in growing IP varieties,' reports Mr. Skiff.

"Identity Preserved Soybeans: The introduction of the processor-beneficial second generation of seeds will help to shine light on an already existing, but small segment of the soybean market–specialty soybeans sold as identity preserved or IP soybeans. IP soybeans are already segregated from commodity soybeans and are sold on the basis of specific processor benefits. This could mean higher protein levels, lower flavor, or even that they are grown organically. It is difficult to get accurate figures on the size of the market for IP soybeans, although it would be safe to assume that they make up no more than a few percentage points of total soybean trade. Currently, IP soybean marketers cater primarily to soyfoods processors in the U.S., as well as those in Japan, Taiwan, Korea, China and Europe.

"GMO soybeans are not excluded from being IP soybeans as long as they are grown, harvested and sold as a particular variety with specific characteristics.

"Based on the reasoning that new improved varieties of soybeans may eventually become a very large part of the market, we may soon see a restructuring of the commodity market as we know it today, or, at the very least, a much larger market for specialized soybeans and a need for new businesses and facilities to process and handle them.

"'By next year, Roundup Ready soybeans will be near 65% of the U.S. market and non-GMO soybeans will become the niche market, with good premiums available and a number of farmers interested in growing non-GMO soybeans," reports Mr. Skiff.

"Organic Soybeans: The ripple effect of GMO soybeans in the marketplace has also inadvertently helped to further develop another small, but specialized niche of the market–organic soybeans.

"Although this is a relatively minuscule segment of the world soybean market, in 1996 and 1997 one of the only ways to acquire non-GMO soybeans was to buy certified organic soybeans. This put a tremendous strain on the supply of organic soybeans in the U.S., and prices jumped dramatically. In fact, for the past two years, the U.S. found itself becoming an importer of organic soybeans from both China and Brazil to fill domestic demand.

"'The introduction of GMO has heightened awareness of organic soybeans due to their certification and their being GMO-free,' says Mr. Jorgensen. 'Buyers are now drawn more positively to organics.'

"Simply put, organic farming requires that no synthetic farm chemicals are used on the plant or in the soil for at least three years. New regulations forthcoming from USDA will also not allow the use of biotechnology in organic food production. According to Agriculture Secretary Dan Glickman, 'food produced with these products and practices will not be allowed to bear the organic label.'

"Things May Never be the Same: Like the after effect of the stone thrown into the pond, the ripple in the market should eventually smooth out and the waters will once again become clear. But the market may never be the same again."

480. *Soyafoods* (*ASA, Europe*). 1998. Cargill and Vandemoortele. 9(3):3. Autumn.
• ***Summary:*** "The European Commission has approved Cargill's acquisition of Vandemoortele's oilseed crushing and oil refining activities in Belgium and Germany. Both companies will set up a joint venture company to operate their oil packing activities in the EU."

481. *Soybean Digest.* 1998. AgrEvo acquires Cargill seed. Nov. p. 18.
• ***Summary:*** "AgrEvo will acquire all of Cargill's North American seed assets for $650 million, the companies announced recently.

"'With this highly strategic acquisition we continue to implement our crop protection strategy and have underlined our commitment to building further our business in North

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America, the world's largest corn seed market,' says Gerhard Prante, chairman and CEO of AgrEvo.

"'Secured access to elite germ-plasm means we can fuel the market expansion of our Liberty-Link, StarLink, SeedLink and other technologies,' he adds.

"Under agreement terms, Cargill farm service centers in North America will continue to market Cargill brand seed to farmers."

482. Broehl, Wayne G., Jr. 1998. Cargill: Going global. Hanover, New Hampshire, and London: University Press of New England (Dartmouth College). xvi + 419 p. Illust. Index. 24 cm. [500+* ref]
• ***Summary:*** This widely-praised book continues Cargill's history, starting in 1961. This is about the era of Erwin Kelm, and his 17 years as Cargill's CEO. Cargill is America's largest privately held company.

Much of the book is about soybeans: Soybean crushing, p. 232, 245, 247-50, 292-93. Soybean embargo–on exports from the USA, p. xiv, 227, 241-50, 252, 271, 308, 324, 348. Export of soybeans, p. 15, 189. Federal Trade Commission (FTC) investigation of export of soybeans, p. 296. Soybeans, growth, p. 182. Soybean plants, p. 24-25, 76, 132, 138, 305. Soybean prices 226-27, 242-43, 251, Soybean profits, p. 81, 226-27, 252. Soybean sales to Russia, p. 198, 200, 225, 242. Storage of soybeans, p. 174, 177. Tariffs on soybeans, p. 131. Address: Prof. of the Science of Administration Emeritus, Amos Tuck School of Business Administration, Dartmouth College, New Hampshire.

483. Falloon, William D. 1998. Market maker: A sesquicentennial look at the Chicago Board of Trade. Chicago, Illinois: Chicago Board of Trade. ix + 341 p. Illust. Index. 28 x 28 cm. [236 endnotes]
• ***Summary:*** The text of this coffee-table book is extremely hard to read; it is too small, printed in a hard-to-read typeface, and sometimes with white letters on a black background, or with italic captions. The book would be much more useful if it contained a chronology and a glossary. Much of the material is based on the research of Owen Gregory, whose contribution is not adequately acknowledged. The author used too many secondary sources when primary sources were available (up to the 1940s) at the CBOT Archives. Contains many interesting photographs and quotations.

Contents: Acknowledgments. Preface, by Patrick H. Arbor, Chairman, Chicago Board of Trade. 1. Founding fathers: The birth of the CBOT. 2. The Board of Trade's "Magna Carta." 3. Emancipation Proclamation: Civil War as market catalyst. 4. "The elevator interest": Munn's the word. 5. Front-page titans: "Cornered" in the press. 6. The bucketshop wars. 7. The birth of the Board of Trade Clearing Corporation: Ag secretary Jardin's ultimatum. 8. The Cargill corn case: No more corners. 9. Securities options: Chicago style. 10. From tangible to intangible commodities: The birth of interest rate futures and options. 11. Market makers: New floor, new products, new century. 12. Generations, 1848-1998: On 'change. Exchange leaders: 1848-1998. Endnotes. Photo credits.

Concerning the chapter on Cargill, the CBOT Archives has the only full transcript of the key Cargill Trial. Address: Journalist for *Risk* magazine.

484. Holin, Fae. 1999. The deal's off: Cargill-AgrEvo seed buy is off, Pioneer lawsuit is on. *Soybean Digest.* March. p. 62.
• ***Summary:*** Hoechst Schering Agr-Evo GmbH was planning to buy Cargill's North American seed business. Though the deal was called off in early February, AgrEvo is still looking for a biotech partner. Pioneer has a lawsuit against Monsanto; it alleges that a former Pioneer employee took proprietary material and information, and after being hired by Cargill used it to develop hybrids.

485. Kilman, Scott. 1999. Cargill's Staley to succeed CEO Micek, who is stepping down early from post. *Wall Street Journal.* April 15. p. B15.
• ***Summary:*** Cargill Inc. named its president Warren R. Staley to the additional post of CEO, to succeed "Ernest S. Micek, who is stepping down earlier than expected after a string of mishaps on his watch."

Mr. Staley says he wants to move Cargill out of the "commodity mind-set" which focuses on high volume, low margin businesses. An example of the new direction is a "joint venture with crop-biotechnology juggernaut Monsanto Co. The venture is set up to design crops to make novel ingredients for food companies." An illustration (dot-style) shows Ernest Micek. Address: Staff Reporter, Wall Street Journal.

486. Traynor, Marty. 1999. Consider source of organics detractor. *Natural Foods Merchandiser.* April. p. 7.
• ***Summary:*** Newspapers and magazines in the USA have recently been running articles that question the benefits of organically grown produce, saying that it is dangerous and potentially lethal.

Marian Burros, in a recent column in *The New York Times,* noted that the source of this bad publicity is Dennis Avery of the Hudson Institute in Indianapolis, Indiana. Avery is the author of *Saving the Planet with Pesticides and Plastic* (Hudson Institute, 1995). In a recent issue of *American Outlook* magazine (fall 1998) he states that people who eat organic produce are eight times as likely to get *E. coli* (O157:H7), and that organic produce is a leading source of salmonella, campylobacter, and listeria.

Why is Avery so critical of organically grown food? It may have something to do with the Hudson Institute, a think tank which is funded by such corporations as Cargill,

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ConAgra, DuPont, Monsanto, and the National Agricultural Chemical Association.

Another group critical of organics is the American Council on Science and Health, also funded by Monsanto and others.

487. Beyers, Jim. 1999. Work with ADM and Westward Industries, Inc. making textured soy protein (Interview). *SoyaScan Notes.* May 3. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** In 1969, when Jim graduated from Southern Illinois University, he was hired by ADM to work on extruding soy protein. He worked with Bill Atkinson, who was using an old vintage extruder to make TVP, which was used primarily for pet food. Jim was hired to do research on adding value to the pet food by making it fit for human consumption, and to diversify the product catalog to include meat analogs. They soon were testing beef, ham, and chicken flavors in different sizes, shapes, and colors. Before long they were experimenting with some "wild and crazy things" such as fruit replacements, vegetable replacement, and nut replacements–all with TVP. At the beginning, only Beyers and Atkinson were working on this project. This was before the settlement of the big patent dispute between ADM and Ralston Purina in 1970. That dispute grew out of the fact that Atkinson and Robert Boyer (both of whom once worked together for Henry Ford) both came up with the idea of extrusion at about the same time. Bill Atkinson was extruding 50% protein soy flour and Ralston apparently said they were extruding soy flour. Atkinson fortunately kept the little desktop extruder that he used to make his first trials; it made a little rope of TVP about the size of an ink pen refill [about one-eighth inch in diameter]. "We reenacted those early experiments of his time and time again for the courts–to the point where we had miles of this little bitty TVP rope piled up." Each company thought that it had invented the extrusion process first. "So they went to war with each other. They spent at least several hundred thousand dollars on attorney's fees, until they finally resolved it out of court. Swift and Staley were just standing on the side lines in the last half of the battle waiting for the judge to tell them who to pay the royalty checks to. Finally, the process patent was awarded to Ralston Purina and the product patent to ADM–which is kind of ludicrous. How can you have a process without a product, or a product without a process." Ralston Purina went out to everyone they could find who was extruding a 50% soy protein product (for pet food or human food) and asked them to buy a license on the process; the license fees were quite high, because the life of the patent was half gone, so they decided to charge twice what they would have ordinarily charged. Ralston Purina made a great deal of money from PMS Foods in Hutchinson, Kansas. Swift paid the fees for a while, then stopped making the product. Cargill was a big manufacturer of a TVP-type product; they have a plant in Cedar Rapids, Iowa. Jim does not know anything about the fees they paid. Ralston Purina itself never made much extruded soy using its patented process. Ralston had two extrusion lines in Memphis, Tennessee, for several years, making mostly human foods–but they were never price competitive and the quality was not very good. ADM could have done the same thing, but they didn't. Jim does not know why ADM didn't pursue this.

Today ADM is by far the world's biggest manufacturer of extruded, textured soy flour. "ADM has an extrusion capacity to generate the entire world's supply of TVP. I know that for a fact because I put those extruders in place myself." ADM runs on high volume and low margins. They won't enter a field unless they can generate enough capacity to dominate. They streamline and automate the process until they are the low-cost producer. This has long been the philosophy of Jim Randall, the retired president. He was the engineer for ADM for many, many years. "The commodity mind-set has always been trainloads, truckloads, and shiploads. When I was at ADM we made one type of bacon bit, packed it in 50-pound boxes with ADM's labels on it, sold it at 20,000 pounds minimum order. That was it." Jim's present company works on smaller volumes and higher margins. "We don't want to compete with the commodity processors. We have a nice little specialty niche that ADM and Cargill can't mess with. Generic bacon bits are becoming a commodity, but it is private labeling that keeps some of them in the specialty field. The big processors won't put in a label room for 70 different private labels."

Jim worked for ADM in R&D for about ten years. He worked very closely with Bill Atkinson, a very bright man and an excellent inventor, but he also came on like a raging bull–a cantankerous man. "But he and I got along great! I never knew for sure why. I used to enjoy listening to him talking about Henry Ford and his years of work there with soy. At one time Ford thought people were being gouged [paying too much] for eye glasses. So he set up a bank of grinding machines, to crank out glasses for a nickel each." Ford and ADM both liked to operate on the principle of high volume, low margin. In his Later years, Atkinson began to suffer from Alzheimer's disease. But until just before he retired, his memory was crystal clear, with 100% total recall. In Jan. 1979 he left ADM and went to work for Westward Industries, where for the next 18 years he made bacon bits. Ken Towers was the original owner of Westward Industries; he and his researchers developed a lot of new technology for flavoring systems in-house. When he went to and helped to start Westward Industries, it would take any order from 50 cases on up, and put the but the customer's label on it if so desired. Initially Westward bought its TVP from ADM, then added its own flavoring system. Later, they bought a license to produce the TVP-type base then added their own unique flavors by their own system.

In Jan. 1979 Westward Industries started making

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standard textured soy protein products in Kansas at 1819 S. Meridian, Wichita. Westward didn't sell any products under its own brand; it was either sold in bulk to foodservice or private labeled for all the glass-packers in the country like John R. Sexton, Durkee Foods, R.T. French, McCormick, Safeway, CFS-Continental, Ponderosa Steak Houses, Pizza Hut–any company that sold bacon-bits in jars. "We were the largest processor of imitation bacon bits in North America, probably for about ten years." The company still makes and sells these products. At one point, they got rid of the extruders and made rice crispies for 15 years.

In about 1984 or 1985 Westward introduced the Soft and Chewy concept, with many of the old flavors, but a few new ones–such as Bacums. In late 1997 he bought Westward from its founder, Ken Towers, renamed it to Westwind Industries, and started his own production. He did not buy the corporate charter from Ken; rather he filed his own corporate charter, which required a new name. Westward Industries still exists, and Jim's manufacturing plant is at a new location. The company makes two types of textured soy flour (crisp texture, and Soft and Chewy) and a line of nut replacements (Terra Nuts, which are pressure cooked, then dry roasted, and used to replace pecans and walnuts).

Greg Caton is an interesting guy. He's exuberant, energetic, and very innovative. He needs to stop, settle down for about ten minutes, and think things through just a little bit. Jim thinks Greg will take his business worldwide "when he finally gets his focus on what he's doing. This non-GMO is really a big thing in Europe these days; it'll never make a splash here in the States. Greg believes that's where his new-found wealth will be." Jim believes that GMO foods will not become widely accepted in the USA during our lifetime. "World-wide it's really catching on, and I think later on it may be somewhat important. What's more important now with soy is if you can process it hexane-free. Even though the residual hexane is in the parts per billion, there are enough folks around here that say 'A little bit's too much.' I think that'll get more mileage than whether it's Roundup Ready or not. Anyway, those are foreign markets that Greg is looking at." Address: Owner, Westwind Industries, Inc., 3930 W. 29th St. South, Suite 55, Wichita, Kansas 67217. Phone: 316-943-3212.

488. Frahm, Gail. 1999. What is the Soy Protein Partners Group? (Interview). *SoyaScan Notes.* June 11. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** This group was formed about 5 years ago to fund 1-800-Talksoy, the toll free number. It consists of about ten of the state soybean boards, members of the Soy Protein Council (ADM, Cargill, etc.), and the Soyfoods Association of North America.

Note: Soy Protein Partners also paid most of the costs of publishing the Soyfoods Guide in 1999, 2000, and 2001, and in keeping the Soyfoods Directory (at Soyfoods.com on the Web) up to date. 117,000 copies of the Guide were printed in April 2001. The Guide and Directory are both under the direction of Stevens & Associates (Roger & Jane Ade Stevens) in Indianapolis, Indiana. Address: Michigan Soybean Board.

489. Warshall, Peter. 1999. Commerce: Soy in the Mississippi River basin. *Whole Earth* (*San Rafael, California*) No. 97. Summer. p. 91-92.
• ***Summary:*** "I like to think of the US Heartland as a bad personal relationship between the Mississippi Delta and the Chicago Board of Trade. They need to talk. There's no feedback between economic productivity and ecological regeneration. The upstream guys love money from soy/corn futures; the downstream fishermen go broke because farm pollution has deadened 7,500 square miles (40 percent of the US fishery harvest). The upstream guys set the world price for soybeans; the down-streamers lose their shirts.

"Futurists must ask: Is it trade itself that causes the river's demise, or is it the style of transport (trucks, barges, rail), or the design of the overall food-delivery system? Can we imagine an eco-friendly and equitable trade route? *Whole Earth* looked for and never found a design for such a trade route. The compassionate traders seem to spend their time fighting the free traders. Anybody got any ideas?

"A soy farmer in western Minnesota, for instance, might ship his crop 200 miles by truck to Port Cargill at the confluence of the Mississippi and Minnesota rivers; 1,200 miles by barge to New Orleans; 3,000 miles to Rotterdam, and then 200 miles to Paris. (Or the soy could travel by truck to a local grain elevator, then by rail to Seattle, and then on to China. Or it could go from the farmer's grain elevator to a local processor by truck or rail.)

"One idea–developing gene-spliced local crops to substitute for trade–typifies how small changes will cause global turmoil. Genes for caffeine have been successfully transferred to soybeans to create a soy-based instant 'coffee.' Midwesterners will soon grow soy 'faux coffee' beans. You may start hearing: 'Please pass the soy-based creamer for my Iowa City Instant Soy Coffee.' Central and South American and African growers and exporters should expect to lose market share. The acreage that went to coffee beans for instant coffee will be lost; laborers will be jobless. In short, traders, bean crushers, barge and train shippers, Congress, taxpayers, State Department food-aid administrators, gene splicers, grain-elevator operators, and a small heroic group of citizens in the Mississippi River Basin Alliance join farmers enmeshed in a global food system that is definitely short on empathy, if not organizational sympathies.

Sidebar 1: The Mississippi-Missouri is the fourth longest river on the planet (3,870 miles), with the fourth largest river basin (1.3 million square miles) and the sixth largest discharge at its mouth (18,000 cubic feet per second). Among the top rivers in the world (including the Nile, Amazon,

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Yangtze, Congo, and Parana), the Mississippi is by far the most polluted with fertilizers and toxic petrochemicals.

Sidebar 2: "Habitat loss on a stretch of the Mississippi modified for navigation (right) contrasts with the diverse complex of habitats on a less developed stretch of the upper Mississippi. Wing dams trap silt, destroy wetlands, and deepen channel for barge and boat traffic."

Sidebar 3: The Mississippi River Basin Alliance, 2105 First Avenue South, Suite 301, Minneapolis, MN 55404. 612/870-3441, mrbooffice@mrba.org, www.mrba.org/mrba. The largest-scale coalition uniting environmental justice and conservation for the whole river basin. Dedicated to protecting and restoring the basin's ecological, economic, cultural, historic, and recreational resources, and to eliminating barriers of race and economic status.

Sidebar 4: The Upper Mississippi and Rios Parana/Paraguay Basins are the world's two heartlands of soy. Both compete for market share of exports. Both ship by rail and barge. The transformation of the South American rivers and prairies is duplicating (with a vengeance) what occurred in the Mississippi Basin and the American Midwest. Lowering soy production or prices in the Midwest encourages Brazilian farmers to plow more cerrados (savannas) and grab more market share.

"Perverse feedback occurs between the two gigantic, soy-competitive river basins. Barge-traffic subsidies and intercontinental competition destroy the river basins with no corrective feedbacks for biodiversity or other economic sectors (e.g., fishing).

"Upper map shows the Rios Parana/Paraguay Basin with new railroad line and river channels, and landlocked parts of Argentina, Paraguay, Bolivia, and Brazil.

"Lower map shows dams on the upper Mississippi that alter flow regime, water quality, wetlands, fisheries, and flyways. In 1994, agro-exports from the US accounted for 40 percent of the worldwide trade in soybeans. About 70 percent of all US grain moves by barge.

Sidebar 5: "A feedback mechanism is part of a loop. It returns information back to the sender, typically in a new message like speed up, slow down, or hold steady.

"Ambiguous Feedbacks: The US government buys soybeans; especially when the market price is low. By buying high, the government assures farmers that their crop will not experience a price crash. Its purchases are a corrective feedback to stabilize incomes to farmers. The government then gives or cheaply sells the soy to nations in need of assistance. Free or cheap food can set up a perverse feedback loop that discourages poor farmers in those nations from planting similar grains. One feedback props up American farmers' prices and fuels another feedback that hurts the long-term self-sufficiency of others.

"No Informational Feedbacks exist on a global level to ensure soyfood safety for consumers. Consumers get no info about the difference, for instance, between gene-spliced and 'regular' soybeans. The US refused to sign the Convention on Biodiversity (Rio de Janeiro, 1992) because it required labeling of gene-spliced foods. Angered European consumers sent a message back through the cashflow feedback circuit; they refused to buy any US soybean products.

"Rules: Chicago Board of Trade's grades and standards for soybeans do not distinguish 'regular' varieties from gene-spliced or eco-friendly beans. Grain elevators mix all farmers' soybeans together, creating barriers to separate, parallel markets for 'regular,' gene-spliced, and eco-friendly beans.

"Both rules freeze market patterns. In order to change the market's organization, buyers must demand parallel-purchasing agreements with segregated transport.

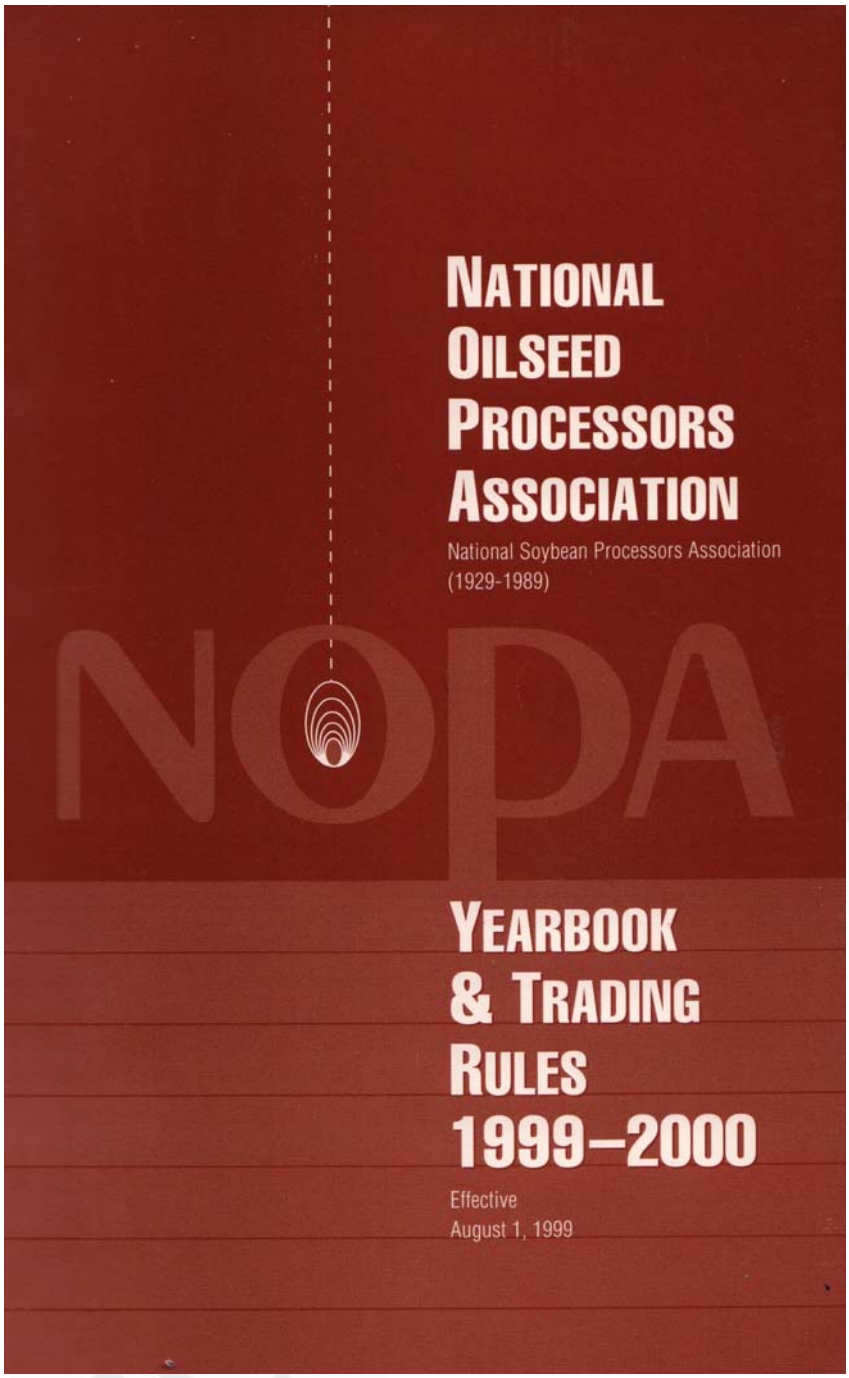
Sidebar 6: "Barges and Railcars: Each barge on the Mississippi-Missouri moves 50,000 bushels of corn (1,500 tons): as much as fifteen railcars. A typical barge convoy has fifteen barges (750,000 bushels): more grain than two 100-car trains can transport. At St. Louis, where the river widens and the last lock is passed, the tow can be doubled (to thirty or more barges, or 1.5 million bushels). And barges can back-haul (fertilizer, coal, salt); railroad cars are too specialized, and return empty. Railroad deregulation set up competitive prices; although barges can haul more, they are more expensive and wouldn't exist without subsidies. Barge subsidies will shape the future prices of transport."

490. National Oilseed Processors Association. 1999. Yearbook and trading rules 1999-2000. Washington, DC. ii + 126 + 11 p. 22 cm.

• ***Summary:*** See next page. On the cover (but not the title page) is written: Effective August 1, 1999. Contents: Constitution and by-laws. Officers and directors. Executive office. Members. Standing committees. Trading rules on soybean meal. Appendix to trading rules on soybean meal: Official methods of analysis (moisture, protein, crude fiber, oil {only method numbers listed}), sampling of soybean meal {at origin} (automatic mechanical sampler, pneumatic probe sampler, probe sampler), sampling of soybean meal (at barge loading transfer facilities), official weighmaster application, semi-annual scale report, certification of installation of automatic sampler & mechanical divider (at origin), semi-annual certification of automatic sampler & mechanical divider (at origin), voluntary checklist for semi-annual certification of sampler & divider (at origin), certification of installation of automatic sampler & mechanical divider (at barge loading transfer facility), semi-annual certification of automatic sampler & mechanical divider (at barge loading transfer facility), voluntary checklist for semi-annual certification of sampler & divider (at barge loading transfer facility), official referee laboratories (meal), official NOPA soybean meal sample bag.

Soybean meal export trading rules: Minimum blending procedures for export meal blended at ports, sampling of

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soybean meal (at vessel loading facilities), weighing of soybean meal (at vessel loading facilities), certification of installation of automatic sampler & mechanical divider (at vessel loading facility), semi-annual certification of automatic sampler & mechanical divider (at vessel loading facility), voluntary checklist for semi-annual certification of sampler & divider (at vessel loading facility), semi-annual certification of scales at vessel loading facilities. Trading rules on soybean oil. Sales contract. Definitions of grade and quality of export oils. Soybean lecithin specifications. Appendix to trading rules on soybean oil: Inspection, methods of analysis: (AOCS official methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses (iodine value, unsaponifiable, break test), refining byproduct lipid, acidulated refining byproduct lipid and tank bottoms. Official weighmaster application, semi-annual scale and flowmeter report, official referee chemists (oil). Soybean oil export trading rules. Uniform soybean oil export contract. Foreign trade definitions (for information purposes only) Appendix 1.

The section on officers, executive staff, board of directors, and executive office (Washington, DC), (p. 8-9) gives the name, company affiliation, and phone number of each person. Members (p. 10-19) (listed alphabetically by company; within each company, first the name of the official Association representative {who is on the Board and votes}, followed by the other personal members listed alphabetically by surname). Standing committees: For each committee, the function of the committee, the names of all members (with the chairman designated), with the company and company address of each are given. Address: 1255 Twenty-Third St., N.W., Washington, DC 20037. Phone: (202) 452-8040. Fax (202) 835-04000. E-mail nopa@nopa.org. Website: www.nopa.org.

491. Soyatech, Inc. 1999. Advertiser index. *Soya Bluebook Plus* 2000. p. 431.
• ***Summary:*** Ag Processing Inc. Allocco S.A. American Health & Nutrition Inc. AMG Inc. Anderson International Corp. ADM Lecithin. Archer Daniels Midland Co. B.N.W. Industries. Baker Process. BAR N.A., Inc. Bean Machines, Inc. Behlen Mfg. Co., Biostar. Borton, Inc. Breitenbach GmbH, Leonhard. Brown Company, Charles. Buhler Inc. Campro International Inc. Cargill, Inc. Center for Crops Utilization Research. Ceval Alimentos S.A. Clarkson Grain Co., Inc. Cleary Products, Inc., W.A. Clofine Dairy & Food Products, Inc. Codema, Incorporated. Core Team, The. Damman-Croes N.V. De Smet SA/NV, Extraction. Divine Engineering, Inc. Edelsoja GmbH. Elementar Americas Inc. Europa Crown Ltd./ Crown Iron Works Company. First Line Seeds. Frank, Fa. L.I. French Oil Mill Machinery Company, The. Fundiciones Balaguer, S.A. Genetic ID. Grain Systems. GTS Energy Inc. Guelph Food Technology Centre. H&H Company, Inc. HI Roller Enclosed Belt Conveyors. Identity Seed &

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Grain Company. Indiana Crop Improvement Association. INHSA. Innomach Inc. Insta-Pro International. International Soybean Program (INTSOY). InterSystems, Inc. Iowa Soy Specialties, LLC. Jeneil Biotech, Inc. Kice Industries, Inc. Klein Commodities. Krupp Extraktionstechnik GmbH. Laidig Industrial Systems. Louisville Drying Machinery. Lucas Meyer GmbH & Co. Mason Manufacturing. Metal Products International, Inc. Midwestern Soybeans International, Inc. Midwestern Soybeans International, Inc. Millbank Technology (N.Z.) Ltd. Miracle Exclusives, Inc. Monsanto Company. Montola Growers Inc. Moore & Associates, Inc., N. Hunt. Natural Products Inc. Norseman Inc. Northland Seed Corp./Northland Organic Foods. Nosawa & Company, Ltd. Oil Mill Gazetteer. Oil-Dri Corporation of America. OntarBio Organic Farmers' Co-operative Inc. Ontario Soybean Growers. Pacific International Distributors (PID). Prater Industries, Inc. ProSoya, Inc. R&D Equipment Sales Company. Riceland Foods, Inc. Riley Equipment, Inc. Roskamp Champion. S. Howes Company, Inc. Sato & Company, Ltd. Schouten USA Inc. Separators, Inc. SK Food International. Soyatech, Inc. Specialty Proteins. Strayer & Associates, Dennis. SunRich Inc. Sweet Manufacturing Company. Tecno Moageira Ltda. Tetra Pak Inc. Texas A&M University. Thompson & Sons Ltd., W.G. Tobe Products. Tradin Organic Agriculture B.V. Tramco Inc. Turner Chilled Rolls Ltd. U.S. Soy. United Soybean Board. VIGAN Engineering S.A. Walzen Irle GmbH. Westfalia Separator, Inc. Westway Terminal Co., Inc. Woodson-Tenent Laboratories, Inc. Younglove Construction Company. Address: 7 Pleasant St., P.O. Box 84, Bar Harbor, Maine 04609. Web: www.soyatech.com. Phone: 207-288-4969.

492. Fitzgerald, Anne. 1999. Grinnell brothers find niche: Their non-GMO soybeans are easily identified. *Des Moines Register* (*Iowa*). Oct. 10. Des Moines Met Area.
• ***Summary:*** In 1995 Paul Lang, a farmer, began to study ways that he and his two brothers, Ray and Jerry, could make more money. He looked at what Cargill, ADM, and the other big ag processors don't do. He found that they don't segregate or process "specialty, food-grade soybeans." So he and his brothers began to grow clear hilum soybeans that were not genetically engineered. They started small, growing 400 acres of their own soybeans and contracting with neighbors for 600 more acres. They bought an abandoned Cargill feed mill east of Grinnell for pennies on the dollar. In 1997 they bought another Cargill facility–a seed conditioning plant–located right across the highway from the family's farmstead. They named their business Natural Products Inc. and today they contract with 60 local farmers in three counties to grow food-grade soybeans. Each week they ship trucks full of 50-lb bags of soy flour and full-fat soymeal to places such as South Korea, Taiwan, and Hong Kong. The Langs also have 110 U.S. customers. On each bag is the stamp non-GMO. Address: Register agribusiness writer.

493. Kilman, Scott. 1999. Cargill agrees to return to Monsanto portion of seed-unit acquisition price. *Wall Street Journal.* Oct. 21.
• ***Summary:*** Cargill "agreed to give back to Monsanto at least $200 million of the $1.4 billion purchase price Monsanto paid in [October] 1998 for an overseas seed business."

"Pioneer Hi-Bred, recently acquired by DuPont Co., filed lawsuits against Cargill and Monsanto for seed theft." Address: Staff Reporter, Wall Street Journal.

494. Kingsbaker, C. Louis. 1999. Extractor failure: Safety procedures. *INFORM* (*AOCS*) 10(12):1142-47. Dec. [40 ref]
• ***Summary:*** Discusses four cases where solvent extractors experience mechanical breakdowns under load and there was a subsequent fire and/or explosion. The latest edition of NFPA 36 (by the National Fire Protection Association) does not describe what to do in such situations.

Case 1 took place in Sept. 1966 at Quincy, Illinois. The Blaw-Knox extractor was completely destroyed by the explosion.

Case 2 took place in March 1982 in Jackson, Mississippi. The extractor failed under load, i.e., when it was filled with a mixture of soybean flakes saturated with hexane solvent. Two men were killed. It was later shown that live steam can be used to safely desolventize the material left in an extractor.

Case 3 occurred in July 1983 in Hamburg, Germany, when a fire and an explosion that totally destroyed two extraction systems and the auxiliary equipment used to process the extracted material and the miscella. The huge extractor, probably the largest in the world at that time, "was full of hexane-laden soybean flakes but there was no way to desolventize or dispose of them." The plant was next to the River Elbe, in Hamburg. The extractor was emptied, cell by cell, into the discharge hopper. Then live steam was pumped into that hopper to desolventize the flakes. Although the process took about four days to complete, there were no safety problems.

Case 4 took place on 23 Dec. 1991 in Japan; it was one of the worst disasters the industry had ever suffered. The extractor was made by Yoshino. Eight men died in the incident. The extractor did not have a purge blower, not did it have live steam pumped to it from a safe location. Kingsbaker showed the authorities that an extractor full of solvent-laden flakes can be desolventized by blowing in live steam without first opening the reactor. Cargill was the first to install a purge fan in the mid-1950s. The fan was sized to change the empty air volume of the extractor once every three minutes, so that the solvent-air mixture inside the reactor will be below its LFL (lower flammable limit) of 1.2% by volume.

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Finally he gives 10 steps to follow if a reactor fails under load. Every plant must have a plan in case of failure and it must also have installed a purge fan and live steam available from a safe place.

Five photos and 1 diagram (from Japan) show damaged reactors. A small portrait photo shows Kingsbaker. Address: 7245 Northgreen Dr. NE, Atlanta, Georgia 30328.

495. Warnken, Philip F. 1999. The development and growth of the soybean industry in Brazil. Ames, Iowa: Iowa State University Press. xxiv + 168 p. Index. 24 cm. [161 ref]
• ***Summary:*** Contents: List of illustrations and tables. Preface. Acknowledgments. Acronyms and abbreviations. Weights and measures equivalents. 1. Introduction: Background and setting. Soybeans in Brazil's agriculture and economy. 2. Brazil's soybean boom: A political economy perspective: Soybeans and Brazilian political economy goals (Saving foreign exchange, increasing foreign exchange earnings, improving the national diet, stimulating industrial development, holding down food price increases, territorial occupation, other factors: wheat and coffee policies, wheat policy, coffee eradication policy). Brazilian soybeans and the international political economy.

3. Soybean production in Brazil: Aggregate production trends. Regional production trends. Characteristics of producing regions (Traditional region, frontier *Cerrado* region {Area and location, terrain and vegetation, climate, soils}, *Cerrado* soybean production and modern technology). Production systems and technologies of the *Cerrados.* Future considerations. 4. Soybean agronomic and production management research: Public research system, early soybean research and the role of technology transfer. Major research lines and accomplishments (Genetic improvement: Development of the tropical soybean, other genetic advancements {poor soil tolerance, disease resistance, insect resistance, nutritional quality, seed quality}, soils management, pest control, *Rhizobium* research, other technological advances). Conclusions.

5. Soybean production programs and policies: An overview of Brazil's development policies. Guaranteed minimum prices program (Soybeans and the rice minimum price support program, soybean minimum price support program), national rural credit system: An overview (Marketing loan program (EGF) {Soybean marketing loans}, production credit {Soybean production credit}, investment credit {Soybeans and investment credit}, conclusions: soybeans in the national rural credit system). Credit, macroeconomic policy, and inflation. Soybeans and the wheat subsidy program. Soybeans and the coffee policy. Input subsidies. Public infrastructure programs (Polocentro program, Prodecer programs). Energy pricing policies. Taxation policies (Income taxes, land taxes, social security taxes, sales and value-added taxes). Conclusions. 6. Trade, marketing, and commercial policies: Marketing channels. International trade (Trade, the Uruguay Round, and MERCOSUL). Domestic marketing system (Market structure and competition, infrastructure: Transport, storage, and handling, infrastructure: Progress and plans). Commercial policies. Conclusions: Commercial policies. 7. Soybean processing and industrial policy: Trends in the soybean processing industry (Industry development). Processing capacity trends (Industry location shifts, industry structure). Industrial policies and the soybean processing industry (Taxation policies, industrial credit programs). Conclusions. 8. Consumption and utilization of soybean products: Trends in use of soybean oil and soybean meal. Animal protein consumption. Growth of the broiler industry (Poultry exports). Factors influencing soybean product use. 9. Future directions of Brazil's soybean industry: Past projections. Future domestic demand (Soybean oil demand, soybean meal demand). Policies influencing soybean industry growth (Technology, infrastructure, food and social policies, macroeconomic, market, and trade policies). 10. Summary and conclusions: Brazilian soybean boom: A political economy perspective. Production trends. Trade. Domestic marketing. Processing. Soybean product use. Policies (Research and technology policies, agricultural and industrial policies, commercial and trade policies, industrial processing policies). Future directions. Selected Bibliography. Address: Prof. of Agricultural Economics, Univ. of Missouri, Columbia, MO.

496. Warren, Susan. 2000. Cargill, Dow Chemical to make 'natural plastic.' *Wall Street Journal.* Jan. 11. p. A3, A16.
• ***Summary:*** The two companies are ready for full-scale production of "natural plastic" made from plants (such as corn or wheat) instead of petroleum. Cargill (based in Minnetonka, Minnesota) and Dow (based in Midland, Michigan) have committed to spend $300 million over the next 2 years on the business, brand-named NatureWorks. This includes construction of a manufacturing plant in Blair, Nebraska, that will make 300 million lb/year of the new plastic named polyactide, or PLA. It has similar characteristics to polyester plastic, or polyethylene terephthalate (PET), used in making soda bottles, carpeting, and clothing. Cargill Dow will market PLA as the first plastic made entirely from renewable resources and biodegradable. As a fiber used in clothing, PLA "has the wrinkle-resistance and versatility typical of synthetics but a softer feel than most polyesters."

Cargill has been considering the idea of making plastic from plants since the 1980s. In 1997, a turning point, Cargill joined its "laboratory know-how with the plastics expertise and market clout of Dow Chemical." The process involves a fermentation of grain sugars. Eventually the firms hope to be able to use plant wastes such as corn husks, rice hulls, or wood pulp as a feedstock. Address: Staff Reporter, Wall Street Journal.

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497. *Food Product Design.* 2000. Soy flours enable health claim labeling. Jan.
• ***Summary:*** "The FDA's recent approval of a health claim linking the consumption of soy protein with a reduced risk of heart disease encourages the development of foods rich in soy. To meet claim requirements, Cargill Foods recommends the incorporation of various soy flours into both new and existing formulations.

"Claim requirements specify the inclusion of 6.25 grams of soy protein per reference amount customarily consumed in order to state that the food may reduce the risk of heart disease. 'Products that currently meet the claim include tofu, soy milk and some vegetable burgers,' says Mary Thompson, general manager. 'There is a vast opportunity to formulate more mainstream products with high soy-protein levels.'"

For more information contact: Cargill Foods, Soy Protein Products, P.O. Box 2817, Cedar Rapids, Iowa 52406. Phone: 800/Cargill. Fax: 319/399-4046 Website: www.cargillfoods.com.

498. Messina, Mark. eds. 2000. Third International Symposium on the Role of Soy in Preventing and Treating Chronic Disease [Proceedings of a symposium held in Washington, DC, on Oct. 31 to Nov. 3, 1999]. *J. of Nutrition* 130(3S):653S-711S. March. Supplement.
• ***Summary:*** These proceedings are divided into three parts: Introduction and six papers. Oral presentation abstracts. Poster presentation abstracts.

Nearly 600 delegates attended this symposium–more than twice as many people as attended the first symposium in 1994.

The symposium was sponsored by Archer Daniels Midland Co., Cargill Inc.-Protein Products, Central Soya, Co., Dr. Chung's Food Company, Monsanto, Personal Care Products Company, Protein Technologies International, SoGood Int., Solbar Plant Extracts, SoyLife/Schouten, Whitehall-Robins Healthcare, the United Soybean Board and the following State Soybean Associations: Illinois Soybean Board, Indiana Soybean Board, Kentucky Soybean Promotion Board, Michigan Soybean Promotion Committee, Minnesota Soybean Research and Promotion Council, Nebraska Soybean Board, Ohio Soybean Council, South Dakota Soybean Research and Promotion Council. Publication of symposium proceedings was supported by educational grants from the United Soybean Board and the Soyfoods Association of North America. Address: 1543 Lincoln St., Port Townsend, Washington 98368.

499. Wolf, Walter. 2000. Soy-related documents–Business records (Archival collection). Peoria, Illinois.
• ***Summary:*** In July 2000 Dr. Walter Wolf, as he was preparing to retire from the Northern Center for Agricultural Utilization Research in Peoria, Illinois, sent to Soyfoods Center many file folders of soy-related documents that he had collected between about 1968 and the present. Most are in the field of soy protein, and none are confidential / proprietary. Each one is neatly dated, and the documents are in reverse chronological order in each manila file folder.

Dr. Wolf earned his PhD degree at the University of Minnesota, where he studied soy proteins. He began work at NCAUR in 1956; at that time it was named the Northern Regional Research Center. He worked as a chemist in the Meal Products Research Group. He did mostly pure research, rather than applied. At the time there was little interest in food uses of soy protein. One of his main contributions was collecting and publishing statistics on the annual production and price of soy flour, soy protein isolates, soy protein concentrates, and textured soy protein products.

The following files (listed alphabetically) were received by Soyfoods Center. Unless otherwise stated, only one file on each company or subject was received. A thin file contains less than about 20 sheets of paper; a thick one contains more than 20 sheets: ADM (Archer Daniels Midland Co.; 2 thick files 1970-2000). Anderson Clayton (thin, 1971-81). Cargill (thin, 1970-2000). Central Soya (4 thick files, 1959-1999). Dawson Mills (thick, 1974-1983). Edible Soy Products, Inc. (Hudson, Iowa; Maker of Pronuts; thin, 1971-78). EMI Corp. (Des Plaines, Illinois, thin, 1971-74). Erie Casein Co. (thin, 1966-73). Fuji Oil Co. Ltd. and Fuji Purina Protein Ltd. (of Japan, thick, 1972-1993). Farmland Industries and Far-Mar-Co (thin, 1970-1993). Food Ingredients–Dale Johnson (thick, 1964-1998). Garrison Products (extrusion, thin, 1977-78). General Foods (thin, 1974-1981). General Mills (thick, 1965-1976). Gerber Products (thin, 1969). Grain Processing Corp. (1968-1976). Griffith Laboratories (thick, 1968-1986). Gunther Products (purchased by A.E. Staley, thick, 1963-1975). Honeymead Products (Mankato, Minnesota, thin, 1978-1986). Industrial Grain Products (Montreal, Canada, thin, 1973-1975). Kikkoman (thick, 1972-1997). Kraft, Inc. (1965-1984). Lauhoff Grain (1 thin, 1973-86). Loma Linda Foods (thin, 1969-1986). Miles Laboratories (thick, 1970-83). Nabisco (1974-81). Meals for Millions Foundation (1 thin file, 1976). Protein Advisory Group of the United Nations, PAG Guidelines (thin, 1969-1978). Quaker Oats (thin, 1970-97). Joe Rakosky, consultant (1979-83). Ralston Purina Co. (4 files, very thick, 1962-1999). Soy protein products (2 files, thick, 1970-1986). Soy protein production statistics and estimates (two thick files, 1970-1996). Staley (A.E., 1 thick, 1969-1986). Swift & Co. (thin, 1961-1971). Takeda Chemical Industries (thin, 1970-1984). Textured soy proteins (1 thin, 1969-71). Tofu equipment (thin, 1970s). Tokuji Watanabe tofu studies at Peoria, Illinois (thick, 1960-61). United Nations Industrial Development Organization (UNIDO, thick, proceedings of Nov. 1969 meeting at Peoria, Illinois), Unilever (thin, 1974-79). Wenger Manufacturing Co. (thin, 1975-76). Worthington Foods (thick, 1965-1998). Address: NCAUR, Peoria, Illinois.

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500. *Bluebook Update* (*Bar Harbor, Maine*). 2000. Cargill set to enter soy protein isolate market. 7(3):1. July/Sept.
• ***Summary:*** Cargill announced their intention to enter this market in June, but they will not begin full-scale production for about 2 years. Construction of a pilot plant is currently underway, according to Mary Thompson, Business Unit Leader for Cargill's soy protein business. They will make the isolates using a proprietary process that reduces the beany flavor, and improves solubility and texture.

501. Dogon, Sally Sinaiko; Sinaiko, Wally. 2000. Genealogy and memories of Joe Sinaiko, soybean pioneer in Cedar Rapids, Iowa. Part I (Interview). *SoyaScan Notes.* Nov. 16. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Sally's father was born Joseph Morris Sinaiko on 4 March 1891 in Kopyl (Yiddish: Kapulya; near Slutsk, south of Minsk), Minsk province, in western Russia. Today Kopyl and Slutsk are in Belarus (Byelarus, which was part of Russia since the late 1700s). Joe was the eldest of 8 children of Elia "Alex" and Rachel (Danzig) Sinaiko. Elia was born in 1864 in Mel'niki, Minsk Province, Russia. He and Rachel (born in 1860 in Minsk) were married on 12 Sept. 1887 in Russia. Alex and Rachel's eight children, born from 1891 to 1905, were Joseph, Anna, Sohnia "Sunny," Isaac "Ike," Herman, Lilly "Leila", Abraham "Arlie," and Marcella.

Alex's five younger brothers (Sam, Albert, Isaac, Saul, and William–born in that order) and his younger sister (Yenta) had immigrated to the United States from Russia, and settled in Madison, Dane County, Wisconsin. Note: Wally has a large unpublished genealogy of the Sinaiko family that is currently being compiled by a distant cousin [Richard Sinykin].

In 1904 Alexander and his wife Rachel decided to leave Russia for the United States. They left in search of greater economic opportunities and because, being Jewish, they were persecuted in Russia and saw no future for themselves there. Alex was probably the last to leave Russia because he was an entrepreneur doing very well economically. He owned a water-driven mill in a small village, and he was also licensed by the Tsarist government to engage in logging. He even traveled into western Europe, which was very unusual for a Jew in those times. Fearing they might not be allowed to leave together, they decided that the father would leave alone and the mother would leave separately with her 8 children. They were successful, met in Bremen, Germany, and came to the New World together on a ship, arriving in 1904 at Baltimore, Maryland. They went immediately to Madison, Wisconsin, where they settled near Alex's brothers and sisters. Another attraction of Madison was the University of Wisconsin. Five of Alex's eight children (three of his sons, including Joe, and two of his daughters) graduated from the University of Wisconsin. Leila was a field hockey star.

Alexander had been a grain miller in Russia, and he soon started A. Sinaiko Hay, Flour & Feed, a retail feed and grain store in Madison. Sally has a 1933 photograph of the front of this store. His children helped around the family business. Four of Alex's five sons ended up in the milling industry; the fifth, Arlie, became a physician. A Certificate of Citizenship shows that Joe became a citizen of the United States on 25 Sept. 1911

On 28 Nov. 1917, during World War I Joe (age 26½, 5 feet 5½ inches tall) and his brother, Ike, enlisted in the U.S. Army (Quartermaster Corps) at Chicago, Illinois. They were sent to Auxiliary Remount Depot #329 at Fort Sam Houston in San Antonio, Texas. There horses were trained and wild horses broken. Joe and Ike applied their skills from the feed business to purchasing feed for horses. A photo shows Ike standing in uniform in about 1918. In 1918 there was a world-wide influenza epidemic that killed 548,000 people in the USA and an estimated 20 million worldwide. Joe came down with the flu while in Texas. His father, Alex, selflessly and fearlessly rushed to his bedside, and helped to nurse him back to health; he did not leave until Joe had recovered. An official army document shows that on 13 Nov. 1918 (two days after the Armistice of Nov. 11) Joe–now a sergeant first class–received an honorable discharge.

After being discharged from the army in 1918, Joe returned to Madison, where he became a partner in his father's feed business. Joseph and his father decided that Cedar Rapids would be a good place to start a mill–perhaps because of the railroad lines there. Sally thinks they both traveled to Cedar Rapids, talked with farmers about buying grain from them, and examined the situation there. In 1921 Joe moved to Cedar Rapids, Iowa, to open a new branch of the business, which he named Iowa Milling Co. Alexander helped Joe start his first business. Max Albert (born 1 Sept. 1893 in New York City; died 25 Aug. 1966 in Trenton, New Jersey), the husband of Joe's younger sister, Anna, may have been Joe's partner in establishing Iowa Milling Co. He was a very good chemist and was definitely living in Cedar Rapids and part of the company by the fall of 1927.

After the Iowa Milling Company started, one of their local competitors was Penick & Ford. They cut their prices to try to drive out Joe, but Joe ran his business more efficiently than they did, so they ended up buying their meal from Joe and selling it in their own bags.

Joseph married Freda Fine on 8 Feb. 1922 in Cedar Rapids, Iowa. Freda, born on 13 Sept. 1901 in Chicago, Illinois, was ten years younger than he.

Joe and Freda had four children, all born in Cedar Rapids. In order of birth, they were: (1) William Richard Sinaiko, born 4 April 1924. He married Riva and they were later divorced. (2-3) Arlene Joy Sinaiko and Nadine Love Sinaiko (twins), both born 19 Aug. 1925. Arlene married Rupert Tumin (divorced) and Nadine married Leon Cole. (4) Sally Helene Sinaiko, born 1 July 1932–the youngest by 7 years. She married Dr. Israel Leon Dogon, DMD, who is an

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academic teaching dentist.

Note: Joe and Max installed two expellers in the fall of 1927 and the Iowa Milling Company began processing soybeans in 1928.

In the 1930s, after Joseph's business was up and running, he helped one of his brothers (Ike) and two brothers-in-law (Max Albert and Irving Rosen) start their own soybean processing businesses. He helped Ike Sinaiko (born 8 July 1897 in Russia; died 2 May 1977 in Beverly Hills, California) to start Illinois Soy Products Company in Springfield, Illinois. By the mid-1940s Ike had sold this company to Cargill. By August 1942 Joe and Ike had started Decatur Soy Products in Decatur, Illinois. Ike moved to California during World War II and in Norwalk started Liberty Vegetable Oil, a very successful business there extracting oil from soybeans, linseed, copra, walnuts, etc. That plant is still active. Ike's son-in-law, Irwin Field, would know about Ike's work with soybeans. He was a partner of Ike's in Norwalk, California.

Joe helped Irving J. Rosen (born 8 July 1898 in Chicago, Illinois; died 18 April 1964 in Rochester, Minnesota; husband of Joe's sister, Marcella) to start Quincy Soybean Products Co. in Quincy, Illinois. Irving Rosen's son, Norman Rosen, was also involved in the soybean business.

Joe helped Max Albert (his former partner at Iowa Milling Co.) start Galesburg Soy Products Co. in Galesburg, Illinois–probably in late 1943. Joe may have also helped Wally Sinaiko's father. Continued. Address: 1. 75 Maugus Ave., Wellesley Hills (near Boston), Massachusetts 02481-7614; 2. 2216 Glasgow Rd., Alexandria, Virginia 22307. Phone: 781-237-9709.

502. Dogon, Sally Sinaiko; Sinaiko, Wally. 2000. Genealogy and memories of Joe Sinaiko, soybean pioneer in Cedar Rapids, Iowa. Part II (Interview). *SoyaScan Notes.* Nov. 16. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Continued: One of Joe's close friends was Dwayne Andreas–although Dwayne [born on 4 March 1918] was 27 years younger than Joe. The two friends were both born on March 4. Note: In 1936 Dwayne had moved the family business from Lisbon, Iowa, to Cedar Rapids and renamed it Honeymead Products. In Andreas' 1991 biography, *Supermarketer to the World,* E.J. Kahn, Jr., writes (p. 71) that in Cedar Rapids "Dwayne came under the tutelary spell of one of his Jewish mentors, Joseph Sinaiko, a leading soybean processor. 'A very classy guy,' Andreas would say years afterwards, 'and the best soybean processor of that era."

Dwayne Andreas was a frequent visitor at the Sinaiko's home. Sally recalls that he was a charmer, an extrovert, and a wonderful person–with great charisma. He was always very kind and nice to Sally when she was a child. She remembers that Dwayne once told Joe that most of what he knew about soybeans he learned from Joe. During those years, Joe and Dwayne usually did business by word of mouth, rather than written agreements. Each man could always be trusted at his word. Dwayne and Joe remained lifelong friends, and–as with all his friends–Dwayne was very generous and kind to Joe.

Note: *Soybean Digest* reports that in 1943 Joe sold the Iowa Milling Co. in Cedar Rapids to Cargill, Inc.–and considered retirement at age 50. By Sept. 1943, when the American Soybean Association held its annual convention in Cedar Rapids, Cargill already owned the plant. But by Nov. 1943 Joe was active once again with soybeans on two fronts. He had just purchased the Mid-Continent Vegetable Oil Co. in Galesburg, Missouri, and he was [perhaps] installing equipment for a soybean processing plant at Fairfield, Iowa.

On 11 Oct. 1944 the plant in Cedar Rapids burned in a huge and spectacular fire, with an estimated loss of $200,000. Sally, then age 12, remembers going to see the fire with Joe. In Oct. 1946 Cargill sold the Cedar Rapids expeller plant back to Joe Sinaiko.

Joe was a quiet and simple man. He was not at all impressed by important people, fancy restaurants, or the like. He loved to eat at home, but took the family out to eat once a year. The kids birthdays were not celebrated; Sally never received a present in her life–but she was free to buy anything she wanted–using family funds. He was a not a social climber. He liked people who were industrious or conscientious. He had no class discrimination. He rarely wore a necktie and did not require neckties of office workers in his company. In 1938 or 1939 Joe and his family moved into a large, beautiful Tudor house at 2232 Linden in Cedar Rapids. From that time the family had nice cars. In about 1946 Joe and Freda were divorced; she continued to live in the big house in Cedar Rapids. Joe lived on a farm he bought near Marion, Iowa.

Alex Sinaiko, Joe's father, died on 10 Sept. 1944 in Madison, Wisconsin. Rachel, his mother, died on 7 Oct. 1950, in Madison.

In 1958 Joe remarried to Janet Epstein. Shortly thereafter, he had a very nice house built at 3322 Terry Drive, SE, in Cedar Rapids; he and Janet lived there for the rest of their lives. She died in 1985.

When Joe was in his late '70s, after he had "retired," he decided to start a corn processing company. It was named either Corn Sweeteners or Iowa Corn Sweeteners and was located in Cedar Rapids. Les Liabo [pronounced LAI-bo], from the University of Iowa helped Joe run the company; he started as a bookkeeper and worked his way to the top. He also started a small sign business named Hawkeye Sign Co. In Florida he either started or bought a car wash. Always a businessman, these kept him active during his retirement years.

Freda, Joe's first wife, died on 2 Nov. 1964 in Cedar Rapids, and was buried there. Joe died on 3 Oct. 1988 in Cedar Rapids, Iowa. He was buried in Madison, Wisconsin.

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After Joe died, his eldest son, Bill Sinaiko, told Joe's life story to the *Cedar Rapids Gazette* (see issue of 16 Oct. 1988). Address: 1. 75 Maugus Ave., Wellesley Hills (near Boston), Massachusetts 02481-7614; 2. 2216 Glasgow Rd., Alexandria, Virginia 22307. Phone: 781-237-9709.

503. Ray, Daryll E. 2000. Are multinationals now the stealth of Brazil's agricultural expansion? (Web article). *APAC Weekly Articles.* Nov. 23.
• ***Summary:*** "Another thing that the last few years has shown is that increased globalization and freer trade make it easier for multinational agribusiness firms to expand their presence in both exporting and importing countries. We have dubbed this agribusiness impact as the stealth effect of freer trade, since it did not appear on the computer screens of those doing free trade analyses."

In Brazil: "Multinational presence has increased substantially in the area of soybean processing. In 1995, for example, the top ten soybean processing firms were, in order, Ceval, Sadia, Sanbra (which in 1997 changed its name to Santista Alimentos SA.), Cargill, Incobrasa, Unilever, Bianchini, Olvepar, Coimbra, and Coamo.

"At that time, Dutch based Bunge owned Santista Alimentos S.A. In 1997 they purchased number five Incobrasa, followed by number one Ceval leaving Bunge solidly in the number one position. Bunge then consolidated the Santista Alimentos' processing operations under the Ceval name and the retail operations of both companies under Santista Alimentos.

"In that same period, ADM entered the Brazilian market with the purchase of Sadia [No. 2], making Bunge, ADM, and Cargill the top three processors in Brazil.

"Also, ADM purchased Glencore Grain Holding with facilities in Paraguay and Brazil." Address: Director, Agricultural Policy Analysis Center, Univ. of Tennessee, Knoxville, TN 37996.

504. Dirks, Ron. 2000. History of Cargill's involvement with Joe Sinaiko and his Iowa Milling Co. in Cedar Rapids, Iowa (Interview). *SoyaScan Notes.* Dec. 11. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ron has worked at this Cargill plant in Cedar Rapids since December 1972; he is now production supervisor. His sources for the following dates and other information are Cargill employment records and interviews with old-timers who were employed or are still employed at this plant.

The oldest old-timer he could find was originally hired on 1 June 1943 by Joe Sinaiko, so Joe still owned the plant at that time. However on 27 June 1944 that same employee was hired by Cargill. So Cargill took over Joe Sinaiko's plant in June 1944.

Then, in late 1946, there was a trade. Joe Sinaiko traded his two soybean crushing plants at Washington, Iowa (a small town) and Fairfield, Iowa (a larger, college town–Maharishi University) in order to get back his plant at Cedar Rapids, Iowa, from Cargill. Note: The October 1946 issue of *Soybean Digest* stated: "Cargill, Inc., announces the purchase of the solvent process soybean plant at Washington, Iowa, from Joseph M. Sinaiko, pioneer Iowa processor." The people in Washington, Iowa, or at Cargill, would almost certainly know when this took place.

By 18 July 1949 Joe owned the Cedar Rapids plant. In 1951 Joe Sinaiko converted the Cedar Rapids plant from expellers to solvent extraction. Louie Langhurst, a well-known engineer and the developer of flaking rolls, was the primary engineer in helping Joe make the conversion. Langhurst was one of the founders of Roskamp Corp., a big mill supplier in Waterloo, Iowa. The main product they manufacture is flaking rolls.

On 1 June 1966, Cargill signed the papers in which they purchased the Iowa Milling Co. (for the second time) from Joe Sinaiko. The transition took one year, and was officially completed on 1 June 1967.

In the 1970s, Cargill abandoned its plant in Washington, Iowa. Address: Production Supervisor, East Cedar Rapids, Iowa. Phone: 1-800-553-5964 X-4040.

505. Shiva, Vandana. 2000. A bitter harvest: Against the grain of market rules. *Times of India* (*The*) (*Bombay*). Dec. 15. p. 10.
• ***Summary:*** In the big game called "globalisation," the market rules are fixed in favour of the North against the South. These rules are aimed at benefitting giant multinational corporations (MNCs), such as Cargill, who wrote the WTO [World Trade Organization] rules. The basic strategy will cause small farmers and producers to be wiped out while the MNCs take over control of our food supply and agriculture.

It is not US farmers but US agribusiness giants that threaten the survival of Indian farmers. As a result of vertical integration, these giants sell inputs (such as seeds, fertilizers, and pesticides) at the highest possible prices then buy commodities at the lowest possible prices.

The prices of many commodities are falling or collapsing. "India must insist on anti-dumping and anti-monopoly measures in agricultural trade." Selling below the cost of production is dumping. The cost of production should include environmental destruction and true input costs.

Edible oil prices in India have fallen by more than 50%, and domestic edible oil has dropped by 33%" while we import genetically engineered soya oil and palmolein."

Note: While the majority of soyabeans grown in the United States are genetically engineered, their protein–not their oil–is affected by this process.

506. Jirjis, Bassam; Muralidhara, Harapanahalli S.; Otten, Dennis D. Assignors to Cargill, Inc. (Wayzata, Minnesota).

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2001. Method for removing phospholipids from vegetable oil miscella, method for conditioning a polymeric microfiltration membrane and membrane. *U.S. Patent* 6,207,209. March 27. 8 p. Application filed 14 Jan. 1999. 2 drawings. [40 ref]
• ***Summary:*** "Field of the Invention: The invention relates to a method for removing phospholipids from vegetable oil miscella, a method for conditioning a polymeric microfiltration membrane for selective removal of phospholipids from miscella, and membrane.

"Background of the Invention: Edible vegetable oils are generally obtained by processing oil seeds. Crude vegetable oils can be obtained from vegetable seeds by solvent extraction. Hexane is the most commonly used extraction solvent. The crude vegetable oils generally contain neutral triglycerides and a host of natural contaminants including phosphatides, sulphurous compounds, free fatty acids, carbohydrates, peptides, oxidized lipids, traces of lower aldehydes and ketones, glycosides of sterols and terpenes, and diverse types of color bodies or dyestuffs. These contaminants are removed from the crude vegetable oils in the course of refining in order to render the vegetable oils palatable.

"The recovery of soybean oil from soybeans is particularly desirable. A technique for recovering soybean oil includes several processing steps. The soybean is dehulled and crude soybean oil is extracted with hexane. The extractant (miscella), which includes hexane and crude soybean oil, is further processing to recover palatable soybean oil. The hexane is evaporated from the miscella and the resulting crude soybean oil is degummed. Degumming, as used in conventional processes, refers to the removal of phosphatides and other gums from the oil by adding water and/or acid thereto and centrifuging. The recovered oil can be further refined with water and alkaline (such as NaOH) and centrifuged to remove the fatty acids and gums. The oil resulting from the alkaline refining step can then be bleached to remove color bodies, hydrogenated to render the oils more stable, and deodorized. The techniques of degumming, alkaline refining, bleaching, hydrogenating, and deodorizing are well known in the art. It should be appreciated that each separation step, and particularly centrifuging, results in loss of oil."

Note: Soy is mentioned 24 times in this patent in the forms "soybean oil," "soybeans," "soybean," "the crude soybean oil is degummed," "a soybean oil miscella," "Soy Oil," "soya bean oil," "soy bean oil miscella" and "soy bean miscella."

This patent focuses on the use of a membrane; either "membrane" or "membranes" are mentioned 145 times in this patent. Address: 1-2. Plymouth; 2. Elk River. All: Minnesota.

507. *SoyaScan Notes.* 2001. Historical perspective on ADM and soy protein isolates (Overview). Oct. 26. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** The following information is from one or more long-time and very well informed insiders in the soy protein isolate industry; they have asked to remain anonymous. ADM started making edible soy protein isolates at a very late date. ADM is a very technologically oriented company. They never put much effort into selling their isolates, even though that little Protein Products Division has always been the pet of Dwayne Andreas. ADM got into edible isolates after Central Soya shut down their isolate plant in Chicago because it was causing too much pollution. The plant had formerly been an old Al Capone brewery, within walking distance of Lake Michigan. ADM actually bought the plant from a junk dealer. ADM has a small but full-time staff that monitors used equipment nationwide, so that when they want to start a new plant they can buy the equipment inexpensively.

When ADM bought the plant, they hired most of the same people who had worked there previously. Within about 2 months they were back up to speed producing edible isolates. They used their technical expertise to get the production line operating at ADM's high standards, so the product quality was stabilized at higher levels and effluents were decreased. ADM renamed Promine to Ardex and continued the same line of four isolate products. Thus Promine D (Central Soya's flagship isolate) became Ardex D, etc. ADM improved the quality of the products somewhat, but they did not introduce any new products, so they fell further and further behind Ralston Purina and Grain Processing Corp. (GPC, whose main problem was that their volume was too low).

ADM tried to compete by being a very, very efficient manufacturer. Ralston at that time, for example, had a problem with the inconsistency of their bulk density–which was a problem for the "muscle powder market." ADM quickly got uniform bulk density, consistent flavor, no dark particles, and good bacteriological quality. They priced their products a little below the going market price because they were a new entrant, but not much–because the profit margins were already slim due to excess capacity in the industry.

In June 1988 ADM bought GPC's edible isolate business and shut down the plant–in part to get rid of this excess industry capacity and in part because ADM considered GPC's diverse line of Pro-Fam isolates to be of superior quality. ADM's isolate line now consisted of many Pro-Fam products and a few of the old Ardex products. Soon ADM built a new isolate plant in Decatur and shut down the Chicago plant. ADM was now becoming a serious competitor to Ralston's new PTI division.

A large quantity of these isolates went into baby foods, soy-based infant formulas, diet foods, and muscle powders. The industry always had high hopes for isolates in meat applications, but the USDA was very suspicious of them because, as purified proteins, they were hard to detect in

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meats and they could bind a lot of water. Consequently USDA required a titanium dioxide tracer and spoke of potential "adulteration with water."

Moreover, a huge market was developed in Eastern Europe, where Communist administrators mandated its use in all processed meats. The key to capturing this market was having the lowest price product; there was little motivation to improve quality.

About 5-6 years ago ADM started putting a lot of effort into their soy isolate lines. They developed a line of new products that were functionally superior–including the Pro-Fam 890 series and 825 series (to add to fruit juices). ADM and PTI make many different isolate products in terms of functionality, solubility, etc. But over the past 20 years PTI has made great progress in every aspect of isolate quality (viscosity, bulk density, dispersibility, flavor, color, etc.), new product development, manufacturing, and marketing, so that they have come "to absolutely dominate the market" with approximately 90% market share. In part, this was because PTI could focus all of its attention on isolates–since that was their only product line. ADM, by contrast, has hundreds of other products.

One of our sources is one of the oldest operating distributors of ADM protein products. He is a recognized expert in applications of soy proteins. He has heard (industry scuttlebutt) that Cargill might come into the isolate field, and that they might buy PTI. DuPont paid much too much for PTI (something like 5 times annual sales), so they have been cutting costs furiously and ruthlessly. They have dismissed their entire R&D staff and cut back even on their sales staff. "Anyone would be insane to get into this market with a brand new plant."

The world market for soy isolates is growing nicely. When ADM built its two new isolate plants in Decatur, the production capacity was sold out before either one was finished. They also have a plant in Europe. He does not think that the FDA heart health claim has much of an effect on the market for isolates. "People used to say that soy was really good for you, but..." Now things have changed, and they buy soy. For example, USDA is now actively encouraging the use of soy in the school lunch program (especially textured concentrates since kids won't eat things unless they taste good) and as an extender in meats. Some new isolate plants in China have started production and disrupted the international market–even though the isolate quality is poor.

"TVP–which we all thought would revolutionize the world's diet–has been a bust. Just a bust!" There were 11-13 manufacturers of textured soy flour 20 years ago. Now there are only a few, a majority of it goes into pet foods (the TVP chunks look like chunks of meat), plus commercial burritos, pizza toppings, meat alternatives, etc. but the profit margins are low.

The following are ADM prices F.O.B. plant, per truckload (based on records from files): Recent ADM prices: Soy protein concentrate: 1989–54 cents/lb. 1993–60 cents/lb. 1996–69 cents/lb. 2001–73 cents/lb. Soy protein isolate: 1989–121 cents/lb. 1993–121 cents/lb. 1996–140 cents/lb. 2001–151 to 159 cents/lb. PTI prices would typically be 2-3 cents/lb higher.

508. Business Trend Analysts, Inc. 2001. The market for fats and oils: Past performance, current trends, and strategies for growth. 2171 Jericho Turnpike, Commack, NY 11725. 549 p. Price: $1,495. *

• ***Summary:*** Contents: 1. The overall report. 2. The market for vegetable oil: The overall market, the market for soybean oil, for corn oil, cottonseed oil, sunflowerseed oil, peanut oil, canola oil, olive oil, other vegetable oils (incl. linseed oil, coconut oil, palm oil and palm kernel oil, tall oil, tung oil, castor oil, sesame oil, cuphea, hemp oil, argan oil). 3. The market for animal fats and oils. 4. Edible end-use markets for fats and oils. 5. Inedible end-use markets for fats and oils. 6. The impact of fat substitutes. 7. Industry structure and economics. 8. Competitor profiles: Archer Daniels Midland, Cargill, Cenex Harvest States Cooperatives, ConAgra Foods, Philip Morris Companies, Procter & Gamble, Unilever.

In Chapter 2, "The market for vegetable oil," is a long section titled "The market for soybean oil." Contents: Market overview (1990-2000, 2001E, 2002E, 2010P). Sales and consumption. Production trends. Foreign trade activity. Polymer coatings for seeds. Statistical tables: (1) U.S. manufacturers' sales of soybean oil. (2) Total U.S. consumption of soybean oil. (3) Consumption of soybean oil: Edible vs. inedible end-uses. (4) Consumption of soybean oil in selected edible products: Salad and cooking oils, baking and frying oils, margarine, other edible products. (5) Consumption of soybean oil in selected inedible products: Resins and plastics, paint and varnish, other inedible products. Soybean oil production, prices, and supply. Soybeans: Supply, crushings, production, prices, and acreage planted and harvested. Worldwide production of soybean oil. Exports, imports, and U.S. apparent consumption. Exports as a percentage of U.S. manufacturers' sales. U.S. exports and imports by country. Average dollar prices for exports and imports. Address: Commack, New York.

509. *Nutrition Business Journal* (*San Diego*, *California*). 2001. Functional Foods V. 6(10):1, 3-8. Oct.

• ***Summary:*** The U.S. retail food market in the year 2000, worth $495 billion dollars, is divided into the following eight categories, listed in descending order of size: Meat, fish and poultry $108.7 billion. Beverages $88.9 (not incl. milk or liquor). Fruit and vegetables $84.9. Bread and grains $59.7. Dairy $53.4. Packaged/prepared foods $51.7. Snack foods $30.0. Condiments (incl. oils, dressings, spreads, sauces, spices, sweeteners) $17.6.

The top five U.S. functional food companies in terms of U.S. functional food sales ($ million) are Pepsico U.S.

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$3,530, General Mills $1,400, Kellogg $1,370, Kraft $780, and Coca-Cola $650. Smaller top companies include: Clif Bar $130, Stonyfield Farms $100, Imagine Foods $90, and White Wave $90. 90% of Imagine Foods' total sales come from functional foods, compared with 100% for White Wave. Imagine Foods launched a big campaign in 2001 to market Organic Power Dream Soy Energy drinks to athletes and fitness enthusiasts.

"Soy is the functional food star of the last two years with an estimated 300 soy products introduced in 2000 alone." Ingredient suppliers in the field of soy are now bearing heavy responsibility for functional food research. ADM, Cargill, Central Soya, and Protein Technologies International (PTI, owned by DuPont) are all investing in research, education, and consumer outreach–plus innovation in processing and new ingredients. One of the largest uses of soy protein is SlimFast, but the health benefits of soy are not the shopper's first consideration.

510. *Nutrition Business Journal* (*San Diego, California*). 2001. Suppliers refine next generation of soy ingredients: Suppliers market to consumers and improve taste, texture, and functionality of soy ingredients. 6(10):18-20. Oct.
• ***Summary:*** Cargill, with sales of $49 billion/year, has long been a supplier of soy flour and textured soy flour. But it is a relative newcomer to higher-end soy ingredients. Last year Cargill announced that it is expanding into soy protein isolate, according to Ted Ziemann, president of Cargill Nutraceuticals. According to Kevin Marcus, director of marketing for Cargill Soy Protein Products, Cargill now has an operational pilot plant and is working with about 20 food, sports nutrition, and weight loss companies on full-scale production–which is slated for 2003.

In the summer of 2001 Cargill Nutraceuticals officially launched AdvantaSoy isoflavones, which is available in regular and non-GMO versions, is not produced using solvent extraction, and keeps the isoflavones in their natural state. Meanwhile the Soy Protein Products group is developing six isolates and six process patent applications.

Today, about 150-200 million pounds of soy protein isolate are used in the USA–according to Marcus. At $1.65 to $2.10 per pound, this would be worth an estimated $280 to $375 million.

ADM, the world's largest supplier and processor of soybeans, has been selling Novasoy, which contains 40% soy isoflavones. Increasingly ADM is turning its attention to consumer marketing, by branding its products–according to Tony DeLio, president of ADM's Natural Health and Nutrition, whose focus is to identify, create, and develop nutraceuticals and functional food ingredients, backed by solid science. ADM has developed the NutriSoy consumer trademark. Today Novasoy has about 50 branding partners in the USA. DeLio estimates worldwide soy isoflavone sales at wholesale to be $30-40 million worldwide. ADM is also making water dispersible phytosterols and sterols under the CardioAid trade name.

A sidebar titled "Large corporations dominate soy proteins market" contains estimated worldwide manufacturers' sales and market shares compiled by ADM: Soy flour, comprising about 25% of the value of the market for soy protein products, has annual sales of about $388 million. Cargill and ADM each have about one-third of the market.

Soy protein concentrates: $487 million. ADM is the leader with about 48% of the market, followed by Central Soya, then Ceval Alimentos of Brazil. The largest end uses for concentrates are meat extensions and alternatives (49%), animal feed/pet food (30%), functional foods (5%), and dairy replacement/infant foods (5%).

Isolated soy proteins: $651 million. Protein Technologies International (PTI) is the leader with about 67% of the market, followed by ADM (19%) and Ceval Alimentos (8.8%). The largest end uses for isolates are infant foods and dairy replacements (40%), meat extensions and meat alternatives (20%), and use in other functional foods (10%).

ADM believes that soy concentrate's share of the market may slowly decrease due to strong demand for isolates and improvements in isolate quality. Strong demand for isolates in the USA and abroad lead to projections that this product will grow from 43% of the soy protein market in 1998 to 45% by 2002.

Note: This is the earliest document seen (July 2020) that mentions "Cargill Nutraceuticals."

511. Endres, Joseph G. ed. 2001. Soy protein products: Characteristics, nutritional aspects, and utilization. Revised and expanded ed. Champaign, Illinois: AOCS Press. ix + 53 p. Index. 23 cm. [106 ref]
• ***Summary:*** Contents: 1. Historical aspects. 2. Definitions and methods of preparation. 3. Protein quality and human nutrition. 4. Health and soy protein. 5. Functionality of soy proteins. 6. Uses in food systems. 7. Regulations regarding usage. 8. Future considerations.

Soy Protein Council member companies: ADM, Central Soya Co., Cargill. Note that Protein Technologies International is not a member. The Introduction (p. 1) states that more than 1 billion pounds of soy protein products are produced for human consumption each year in the USA–about 4 pounds per person.

Note: This is an updated and expanded edition of: Soy Protein Council. 1987. "Soy protein products: Characteristics, nutritional aspects and utilization." 43 p. Address: PhD, The Endres Group, Inc., Fort Wayne, Indiana. Phone: 219-625-3616.

512. Richards, Michael. 2002. Candleworks Inc. and the development of candles made from soy wax (Interview).

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SoyaScan Notes. Jan. 10. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** "I started, self funded, in a building without any electricity or water, and I didn't have a university or a corporation behind me, so I stayed under the radar for quite a while. We had these candles out in commercial distribution in the Sept. of 1995–that very definitely was the earliest 100% vegetable wax candle on the market; 33% of the content was soy oil. The actual candle was named Marinis Travel Candle. The candle came in three scents: Reviving, Relaxing, and Marinis. The form was a 1½ oz. covered travel tin. They were meant to pack in a purse or suitcase. The back label reads: "Created with beeswax and plant-derived waxes. Renewable, non-petrochemical resources." One candle cost $3.95 retail. The high cost was what drove me to soybean oil. But we were creating something that had never existed before, so be had to overcome many technical hurdles.

It's an interesting paradox. When you're an innovator, you're kind of ahead of the wave. I've literally created a new market. Now I'm doing my best to maintain a position in the market after creating this whole new wave.

Michael was making the candles in Iowa City, Iowa. At that time soy oil was part of the content, but by Sept. 1996 we had hydrogenated soy oil as the majority of the content; it was a gradual process. In 1997 the University of Iowa funded chemical engineering intern who wrote a paper titled "Increasing the use of soybeans in the manufacturing of candles"–issued in Aug. 1997. So our developmental process was documented by the university. We started working with vegetable oil waxes in 1991 and gradually moved to soybean oil in 1995–you know, being a native Iowan that was the direction to go for raw materials. I have a timeline that maps out the history of our development. At a trade show, the Indiana soybean association people used to come around and take pictures of our booth.

Michael's patent is in process. Cargill bought the patent rights and left Michael with a revenue share. "It was absolutely necessary. If I hadn't taken action as an entrepreneur working with no funding, I would have been left in the dust–even if I had a patent. Having a patent is one thing, defending it is another. ADM and Cargill both signed research agreements with me in the late 1990s. Quite realistically, Cargill is going to make a lot of money and I'll make some. But it's going to be a piece of a bigger and bigger pie. Cargill has a contractual obligation to defend my patent.

"Cargill first makes the soy oil by crushing soybeans, then they hydrogenate it. I have delegated all my wax production to Cargill." Address: Founder, Candleworks, Inc., 1029 Third St. S.E., Cedar Rapids, Iowa 52401. Phone: 319-363-1774.

513. Candleworks, Inc. 2002. Historical summary: General process of invention and discovery of soy wax (Phytowax). Cedar Rapids, Iowa. 3 p. Unpublished typescript. 28 cm. [1 ref]

• ***Summary:*** "According to our research in the industrial wax industry, Michael Richards was the first inventor to create candles from soybean wax." The first soy candles were produced at his business, Candleworks, Inc., 2920 Industrial Park Road., Iowa City, Iowa 52240.

1991–Michael Richards founded Candleworks and commenced the manufacture of beeswax candles for one original customer, The Body Shop retail chain based in Great Britain. Initially Candleworks supplied The Body Shop with only beeswax candles for their U.S. and Canadian retail outlets.

1991 June–Because of the extremely high and rising cost of beeswax, Michael launched research into the novel utilization of a wide range of vegetable waxes and hydrogenated oils for use as a new form of candle wax that had not been in use anywhere in the global candle industry. In 1991 he created the world's first 100% vegetable wax candle; it was made from carnauba and almond oil. (This first all-vegetable candle is still held as a company historic item in a secure storage facility.)

1992-1994–Candleworks was the sole supplier of beeswax candles during these years for The Body Shop, which had a company policy that discouraged the use of petroleum products.

1994–The Body Shop issued a general industry request for product development and product manufacturing bids for a novel all-vegetable wax candle line to the global candle industry, including manufacturing sources in the U.S., Asia and Europe. In Dec. 1994 Candleworks entered this open market competition. After several months of research and sample submissions, The Body Shop notified Michael Richards at Candleworks, Inc. in Iowa City that his vegetable wax formula was chosen as the best product to meet this new need. Several of the largest candle manufacturers in the world also entered this competition. Mr. Richards worked for many years as a solo entrepreneur with no assistance from universities, government, or farm commodity boards. His research was totally self motivated and self funded. Yet, as is often the case with innovation, the solo entrepreneur produced what large corporations failed to.

1995 Aug.–The Body Shop submitted their first purchase order for the new vegetable wax candle line created by Candleworks of Iowa City. Candleworks thus entered the commercial market with this new product. The first candles manufactured by Candleworks from vegetable sources were made from a blend of sweet almond oil, carnauba wax (a natural wax from the carnauba palm tree), and beeswax. 1995 Sept. 28–A local Iowa City newspaper, *The Icon,* published the first article (p. 6) on this vegetable wax innovation by Candleworks.

1995 June–Because of the rising price of expensive almond oil, Michael Richards replaced all use of almond oil

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in his formula with soybean oil.

1995 Sept.–The first candles containing soybean oil were distributed to customers throughout the United States. During the rest of 1995 and throughout 1996, progressive reformulation of his vegetable wax blend was carried out, using higher and higher percentages of soybean oil. Mr. Richards also began testing various sources and grades of hydrogenated soybean oil to achieve product improvement in surface texture, burn time, soybean material handling, and soy wax manufacturing process.

1997–Iowa State University invited Mr. Richards to exhibit his commercial line of soy wax candles at a statewide forum on Value Added Agriculture.

1997 Aug.–Michael Richards recruited a University of Iowa Chemical Engineering intern, Stephen W. Thomas, to serve as Mr. Richards' lab assistant to carry out extensive testing with various grades and blends of liquid soy oil, various grades and blends of partially hydrogenated soy oil solids and pastes, and other experimental vegetable additives such as plant glycerine and plant derived palmitic acids. The final report, dated 22 Aug. 1997, led to an improved candle formulation.

1998 Feb. 7–Based on a project proposal, the Value Added Agricultural Products and Processes Financial Assistance Program (VAAPFAP), administered by the State of Iowa Department of Economic Development, provides to Candleworks, Inc. an interest free / forgivable development loan–to build a larger market for the soybean wax candle innovation.

1998–Iowa State University invited Michael Richards to be the keynote speaker at a statewide forum on Value Added Agriculture–to present his innovation to the public.

1999 June 29–VAAPFAP provides a second interest free / forgivable loan to Michael Richards and Candleworks Inc. to initiate bulk sale of industrial soy-based waxes for other companies in the candle industry and other varied industries such as food package wax coating. This enabled Mr. Richards to intensify his research, which culminated in Dec. 1999 with four new distinct, proprietary industrial wax formulas for four distinct manufacturing processes for each different formula and four distinct industrial applications for each respective wax formula.

2000 Jan.–Cargill, Inc. purchased an interest in the body of intellectual property created by Michael Richards during his previous 9 years of research and development of soybean oil candles. Mr. Richards' soy wax formulas are marketed under the trade name "Phytowax." Address: 1029 Third St. S.E., Cedar Rapids, Iowa 52401. Phone: 319-363-1774.

514. Cargill. 2002. We're using our bean to bring you smart soy solutions (Ad). *Food Product Design* 11(10):90. Jan.
• ***Summary:*** See next page. A large color photo shows an aerial view of a man with a bald head dressed in a business suit. The text: "Soy is top of mind with today's consumers. And that's compelling reason to formulate your products with soy protein from Cargill. We know soy!" As one of the world's leading soybean processors, we'll show you how to take advantage of this versatile ingredient. To give your customers the great taste and added nutritional benefits they're looking for. And open your door to whole new market opportunities.

"Cargill supports food manufacturers with the quality ingredients, proven product development expertise and application support you need to maximize soy's potential in your product applications. Baked goods. Prepared foods. Meat alternatives. Pharmaceuticals. And more. Whether you're creating new products or reformulating existing ones, draw on our knowledge to start rethinking the possibilities of soy!"

www.cargillsoyprotein.com. Address: [Minneapolis, Minnesota]. Phone: 1-800-553-5964.

515. Hegenbart, Scott. 2002. Soy: The beneficial bean. *Food Product Design* 11(10):82-84, 86, 88, 91-92, 94-97. Jan.
• ***Summary:*** An excellent article. Contents: Introduction. Breaking down the bean. Putting the squeeze on soy. Grinding out the protein: Full-fat flours, high-enzyme flours, defatted flours and grits, lecithinated and refatted flours. Protein pinpointing. Isolating the isoflavones. Don't forget functionality. Nutritional beverages. Alternative meat products. Bars or cereals. Bread and other baked goods. Regulatory issues. USDA's FSIS (Food Safety and Inspection Service).

According to Lee Knudson, business development manager for Cargill Health and Food Technologies, the market for soy isoflavones increased by more than 55% between 2000 and 2001.

"The recent soy renaissance kicked off in 1999 when the FDA approved a health claim governing soy protein's role in reducing the risk of coronary heart disease. At that time, only 24% of consumers were aware of the specific health benefits of soy, according to the United Soybean Board (USB), Chesterfield, Missouri. Now, the USB's most recent 'Consumer Health Tracking Study' indicates that 39% of consumers are aware of soy's health benefits, with 42% recognizing that soy can lower cholesterol and reduce coronary heart disease." Address: Senior Technical Editor.

516. Jordan, Joe. 2002. U.S. agribusinesses take first steps in Cuba. *Bluebook Update* (*Bar Harbor, Maine*) 9(1):1, 7. Jan/March.
• ***Summary:*** In Nov. 2001 Hurricane Michelle devastated parts of Cuba, severely damaging crops and killing five people. While continuing to enforce its 38 year old embargo, the U.S. government responded by easing some sanctions last year. ADM, Cargill Inc., and Riceland Foods have secured contracts to sell soy, corn, rice, wheat and other staples to Cuba. Cargill will ship 10,000 tons of crude soy oil

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Cargill supports food manufacturers with the quality ingredients, proven product development expertise and application support you need to maximize soy's potential in your product applications. *Baked goods. Prepared foods. Meat alternatives. Pharmaceuticals.* And more. Whether you're creating new products or reformulating existing ones, draw on our knowledge to start rethinking the possibilities of soy!

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in January and February.

517. Barnes, Stephen; Messina, Mark. 2002. Introduction and satellite session at the Fourth International Symposium on the Role of Soy in Preventing and Treating Chronic Disease. *J. of Nutrition* 132(3):545S-46S. Supplement. March. [6 ref]
• ***Summary:*** This is the fourth in a series of symposia on this topic that began in 1994 in Mesa, Arizona. The number of attendees was reduced by security concerns and air transportation problems following the terrorist attacks on Sept. 11, 2001 in the United States. Nevertheless, scientists representing 21 countries and 5 continents attended the symposium held on Nov. 4-7, 2001, in San Diego, California; 36 scientists gave oral presentations, including four overviews of soy research–metabolism of soy isoflavones, breast and prostate cancer, hormonal effects in women, and the benefits and risks of soy infant formulas. The rest of the talks presented new research information. Two poster sessions were also held on various subjects: the effects of soy on coronary heart disease and atherosclerosis (31 posters), cancer (15 posters), bone (14 posters), kidney (5 posters), blood pressure (3 posters), and cognition (1 poster). There were 17 posters on the metabolism and analysis of isoflavones and another 21 posters on a variety of miscellaneous categories.

This symposium was supported by: Central Soya Co.; Monsanto; Protein Technologies International; SoyLife Nederland BV [Netherlands] / Schouten USA Soylife; United Soybean Board; Archer Daniels Midland Co.; Cargill Soy Protein Products / Cargill Nutraceuticals; Illinois Soybean Association / Illinois Soybean Checkoff Board; Indiana Soybean Board; Cyvex Nutrition; Nichimo International, Inc.; Nutri Pharma Inc.; Revival Soy; Solbar Plant Extracts Ltd.; Soyatech Inc.; AOCS Press; Dr. Soy Nutrition; Eurofins Scientific / Product Safety Labs; and Optimum Nutrition. This publication was supported by (in alphabetical order) the Indiana Soybean Board, the Kentucky Soybean Board, the South Dakota Soybean Research and Promotion Council, Soyfoods Council, Cargill, and the United Soybean Board. Address: 1. Dep. of Pharmacology and Toxicology, Univ. of Alabama at Birmingham, AL 35294; 2. Nutrition Matters, Inc., Port Townsend, Washington 98368.

518. Richards, Michael. 2002. Re: The history of soy candles. Letter (e-mail) to William Shurtleff at Soyinfo Center, May 25. 3 p. Unpublished typescript. 28 cm. [1 ref]
• ***Summary:*** "1991–In 1991 Michael Richards founded Candleworks to manufacture beeswax candles. As he entered the candle industry with beeswax products he realized there was a growing demand for natural wax candles. However, there was a huge economic barrier. Namely, the cost of beeswax was 10 times the cost of petroleum candle wax (paraffin). In July, Michael Richards started experimenting with a wide range of plant waxes and vegetable oils to find a natural wax that could be cost-competitive with petroleum wax. He completed thousands of hours of tests with tropical plant waxes such as carnauba and candelilla waxes, plus domestic oils such as corn and soybean oil.

"1992-1994–In 1992, this testing resulted in the first vegetable wax candle, made from a blend of vegetable oils and natural waxes. At that stage of development, the vegetable wax was hard and brittle. To obtain a softer, more pliable wax, Michael started to acquire and test a wider range of tropical and domestic plant oils. This included partially hydrogenated coconut, palm, and soybean oils. Michael Richards continued working on two parallel tracks:

"(1) Manufacturing beeswax candles

"(2) Research and development for other vegetable wax candles. In 1994 Michael started blending beeswax with soybean oil to achieve an economical natural wax candle.

"1995–The Body Shop, a national chain of stores that was Candleworks' main beeswax candle customer, issued the first purchase orders for a line of natural wax aromatherapy candles from Candleworks. For the first three months, the content of the Body Shop candle wax was a blend of beeswax and almond oil. Because of the increasingly high cost of almond oil, Michael then started blending soybean oil with the beeswax. He completely replaced almond oil with soybean oil in all commercial production of candles in May of 1995.

"1996–Michael then experimented with various ranges of hydrogenated soybean oil to eliminate the costly beeswax in his natural wax formula. In the fall of 1996, beeswax was no longer used. Instead, the candle wax developed and utilized by Candleworks featured hydrogenated soybean oil as the majority percentage of the candle formula. Other vegetable oils were then added in minority portions to achieve specific cosmetic characteristics, such as a smooth even surface and scent projection. Michael created low-melt soy wax for container candles and a high-melt point wax for freestanding pillar candles in 1996.

"1996–With the goal of creating an edible birthday cake candle, Purdue University students developed their own candle formula using soybean oil. The candles won first place in a competition sponsored by the Indiana Soybean Development Council and Purdue's Department of Agronomy.

"1997–Candleworks negotiated with the University of Iowa to provide a chemical engineering intern to test and document the new soy waxes developed by Michael Richards. This resulted in a report prepared for the Iowa Department of Agriculture and Land Stewardship titled: 'Increasing the Use of Soybeans in the Manufacturing of Candles.'

"1998–The Indiana Soybean Board unveiled a brand of candles called Harvest Lights made from soybeans at the Farm Progress Show. The development of these candles was

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completely farmer-funded through the Soybean Checkoff program. This formula has since been patented.

"1999-2000–Documentation of Michael's research process on the development of natural plant-based waxes from 1991 through 1999 was submitted to a patent law firm in Des Moines, Iowa (McKee, Vorhees and Sease). Formal application for patent pending status was presented to the U.S. patent office the following year.

"Soywax, a hydrogenated soybean oil that is used as renewable and biodegradable alternative to paraffin wax in candle-making, was investigated for its tendency of producing soot and potentially harmful organic volatiles (e.g. acrolein, formaldehyde and acetaldehyde) during candle burning. While a considerable amount of soot was produced from the combustion of paraffin candles under disturbed condition (simulated air movement), little or none was observed from soywax candles. Low level of formaldehyde was detected in paraffin candle fume, but it was not present in significant quantity in the soywax candle fume. Acrolein was not detected in either type of candles. Soywax candles burned at a significantly lower rate than paraffin candles did. Thermal, textural and combustion properties, such as melting and solidification profiles, candle surface temperature distribution, hardness and adhesiveness, and burning rate, of a hydrogenated vegetable oil were also investigated. Effect of adding hydrogenated palm oil, free fatty acids, and paraffin on these functional properties were quantified. For complete technical information, please refer to the following two recent publications.

"Rezaei, K., T. Wang, and L.A. Johnson. Hydrogenated vegetable oils as candle wax. *J. Am. Oil Chem. Soc.* 79:1241-1247 (2002).

"Rezaei, K, T. Wang, and L.A. Johnson. Combustion characteristics of candles made from hydrogenated soybean oil. *J. Am. Oil Chem. Soc.* 79:803-808 (2002).

"2001–Cargill purchased intellectual property rights in Michael's soy wax innovation. Cargill now manufactures soybean wax formulas developed by Michael. Michael continues to market the soy wax in the industry and provide technical training for other candle manufacturers in the use of soy wax.

"2002–Michael Richards launched a nationwide guild of candle manufacturers called 'Village Chandler'. This guild is committed to the use of soy wax in candle production. (At present there are more than 62 Village Chandlers in 17 states and Canada).

"2003–This soy wax innovation is fast-becoming a new national industry. Today, soy candle manufacturers range from numerous entrepreneurs to major manufacturers like Hanna's Candle Company (one of the five largest candle companies in the U.S.).

"To access a sample of the many soy candle manufacturers nationwide, click here.

"(c) 2003 Iowa Soybean Promotion Board." Address: Founder, Candleworks, Inc., 1029 Third St. S.E., Cedar Rapids, Iowa 52401. Phone: 319-363-1774.

519. *Bluebook Update* (*Bar Harbor, Maine*). 2002. New isolate, new thinking: Cargill rewrites its script. 9(2):8. April/June.

• ***Summary:*** "'It's a whole new product line for us,' says Kevin Marcus, Director of Marketing for Cargill Inc.'s Soy Protein Solutions business. He's talking about a recently announced proprietary isolate which has been in development for the last two and a half years. But he might just as well be talking about Cargill, since 'whole' and 'new' are new directions in which the commodities giant insists it is taking itself these days.

"The world's largest private company, Cargill has always had the reputation for playing its cards close. But now, as it diversifies into refined products, ingredients, and nutraceuticals, Cargill realizes that it has to 'open up a little more,' Mr. Marcus says. 'If someone buys this product (the new soy isolate), its not the end of a relationship, just the beginning. They are buying into our technical expertise.'

"That know-how is part of a Cargill initiative called Food System Design (FSD). Soy Protein Solutions, one of four business units under the FSD umbrella, is working with customers to provide new ingredients and other ideas that will fill consumers' needs. The new isolate is a product of this process.

"'It's made with brand new technology,' Mr. Marcus says. 'Some people don't realize that Cargill has been in the protein isolate business for 30 years but it got lost in the oil business. It's been separated out again for the past three years.'

"Now Cargill can focus on its protein. To produce this new isolate, a plant is being built in Sidney, Ohio, with an operational date set for fall, 2002. Soy Protein Solutions expects to capitalize on soy protein's 'dramatic revolution during the past couple of years, thanks to the FDA's health claim,' says Mary Thompson, VP of the Soy Protein unit. But don't expect it to be operating on a high volume/low price model. Instead, says Mr. Marcus, Soy Protein Solutions, with the rest of Cargill, is focusing on superior products and customer relationships.

"Other recent Cargill debuts have included a new sugar, Trehalose, which is absorbed at a slower, more sustained rate than other sugars and a highly concentrated isoflavone called AdvantaSoy Clear. Cargill's transformation has included unveiling a new corporate logo and slogans such as 'I am a problem solver,' designed to remold the mindset of the company."

Note 1: Talk with Bill Limpert of Cargill's Soy Protein Solutions. 2002. July. There was a one-word error in this article: Cargill has been in the soy protein business for 30 years, but has not previously manufactured soy protein isolates. When Cargill changed Soy Protein Products to Soy

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Protein Solutions about 6 months ago, the company made a major commitment to customer service and to helping customers develop new products using existing or new Cargill protein products. PTI has long been doing this with its isolates, Central Soya with its concentrates, and Cargill with its soy flour. Cargill's new isolate plant is expected to open in Nov. 2002.

Note 2. Industry insiders note that ADM supplies the entire range of soy protein products but offers little service in order to keep its position as the low-price supplier.

Note 3. As of 8 Oct. 2002 Cargill has offered an organic soy protein isolate to at least one potential customer. However in a follow-up call, their sales manager says they definitely have no plans to make organic soy protein isolates.

520. *Prepared Foods.* 2002. Nutra news: Cargill product gains GRAS affirmed status. 171(9):NS13. Sept.
• ***Summary:*** "An independent panel of experts has affirmed the GRAS determination for the use of 'AdvantaSoy Clear' as a source of concentrated soy isoflavones. The AdvantaSoy Clear product contains approximately 40% isoflavones and has solubility, taste and color superior to other isoflavone products." It is intended to provide 30-50 mg of soy isoflavones per serving and does not compromise flavor and taste.

521. Byrne, Harlan S. 2002. To market, to market: Global agribusiness goliath Bunge Ltd. feeds the world and nourishes stockholders. *Barron's.* Oct. 21.
• ***Summary:*** In Aug. 2001 Bunge, the multinational agribusiness company, first began selling its stock to the public (IPO) and was listed on the New York Stock Exchange. Initially priced at $16, the shares now trade about $23–quite impressive for a company with operations on four continents. In a second offering in March 2002, Bunge issued 16 million shares at $19 apiece. Yet the company's name is not well known to the billions of people who consume its products. Soybeans, which supply nearly one-third of the world's edible oils, have powered much of the company's growth in recent years. In the past 5 years, Bunge's soybean processing capacity has leaped to 34 million tons from 5 million tons–about the same as ADM and Cargill.

Founded 185 years ago as a grain trader in Amsterdam, The Netherlands, and incorporated in Bermuda, Bunge is now headquartered in White Plains, New York. Since the 1960s, Bunge has been expanding in the USA, which is now the key to its global distribution.

Bunge's latest expansion involves the two-stage purchase (for about $900 million) of Cereol, S.A., a leading oilseed processor. Completion of the deal, expected in early 2003, will catapult Bunge to No. 1 among the world's oilseed processors. Photos show: (1) Three views of Bunge grain elevators, shipping lines, and storage facilities. (2) A small photo shows Alberto Weisser, Chairman and CEO. A small graph shows Bunge's stock price from Aug. 1901 to the present.

522. Weinberg, Neil; Copple, Brandon. 2002. Going against the grain. *Forbes.* Nov. 25.
• ***Summary:*** Warren Staley, the new CEO and the 7th chief in the company's long history, wants to lead Cargill out of the low-margin commodities business. Many think he is plotting revolution. A superb article from *Forbes.*

The article begins: "Down a two-lane highway that winds through oaks and evergreens 25 miles west of Minneapolis, a secluded access road turns off to the south and is marked only by a small sign: 'Cargill Lake Office.' There near the shores of Lake Minnetonka, amid the sedate elegance of an antique French-style mansion, Warren Staley plots a revolution at the most dominating–and obsessively private–company on the planet.

"He wants to climb beyond the high-volume, low-margin ghetto of soybeans, meals and oils and into pricey new ingredients and soup-to-nuts 'solutions' for farmers, foodmakers and restaurant chains. He is pushing into everything from financial hedges for farmers and factories to corn-based plastics and healthful soy fillers, which sell for dollars rather than pennies a pound."

"President Gregory "Page, a 28-year Cargill veteran and, at 51, Staley's heir apparent, aims to cook up some products too enticing to pass up. Soy products, a Cargill specialty, are of particular interest, with retail sales expected to grow 17% this year, marking a seventh-consecutive year of double-digit gain. The market already attracts major players, with Kellogg having bought Kashi and Worthington Foods and Kraft acquiring Boca Burger.

"The problem is that many Americans and Europeans detest soy's taste. For now that means disguising it in familiar products like cappuccino and health food bars that, though chocolate-coated, have the requisite 6.25 grams of soy per serving required to make healthful cardio-claims in the U.S. Cargill says it has about 50 more food products in the pipeline.

"Des Moines dairy Anderson Erickson now makes a new soy yogurt from a soy protein isolate that Cargill touts for its blandness, and manufactures at a Sidney, Ohio factory opened last month. French Meadow, a Minnesota bakery, uses Cargill's soy flour to bake breads for men (its sterol content has been touted as a natural way to prevent heart disease) and for women (plant hormones limit the effects of menopause)."

523. *Bluebook Update* (*Bar Harbor, Maine*). 2002. Cargill isolate hits the market. 9(4):3. Dec.
• ***Summary:*** Cargill Soy Protein Solutions announces the commercial availability of Prolísse, their new soy protein isolate, made at their new plant in Sidney, Ohio. The product, which is said to have a bland taste and good solubility, has

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already found buyers in the functional food bar and dairy industries. For more information phone 952-742-2275, or visit www.cargill.com.

524. *Iowa Soybean Review* (*Iowa Soybean Association, Urbandale, Iowa*). 2002. Candles: Lighting up demand for U.S. soybeans. 14(3):30. Dec.
• ***Summary:*** "Move over paraffin wax. Soy-based candles are making their presence known throughout the United States." Hanna's Candles, an Arkansas-based candle maker which ranks in the top five in U.S. candle production, sells its soy candles via www.candlemart.com. Their first line, Soy Sorbet, did so well that they have introduced two more lines: Soy Bakery and Soy Holiday.

Cargill's new product line, NatureWax Premium Vegetable Waxes, are made with soy oil and have been very popular. These waxes are sold to candle makers throughout the USA. Most traditional candles are made with paraffin, a petroleum product. Because soy candles are cleaner burning, they dramatically reduce the amount of soot emissions. Checkoff dollars are being used to develop marketing materials that are sent to soy candle manufacturers. These include postcards and point of purchase displays that reinforce the benefits of soy wax, using the theme, *'Soy... Bringing Nature to Light.'* Two color photos show soy candles, some with labels.

525. Jordan, Joe. 2002. U.S. Food & Agribusiness Exhibition shows opportunities for oilseed industry. *Bluebook Update* (*Bar Harbor, Maine*) 9(4):2. Dec.
• ***Summary:*** In late September, 290 U.S. companies took the rare opportunity to present their products to over 16,000 visitors in Havana, Cuba, at the U.S. Food & Agribusiness Exhibition. The trade show was organized by PWN Exhibicon, a Connecticut-based company that applied for the permit in Nov. 1999. U.S. companies can now sell goods to Cuba on a cash-only bases thanks to revised trade sanctions, which became law in Oct. 2000. Companies first took advantage of the new law after Cuba appealed for permission to buy food from the USA following the devastating Hurricane Michelle in Nov. 2001.

ADM, the primary sponsor of the event, signed $19.05 million in contracts for soy, corn, and rice products. Cargill, Inc. signed contracts worth $17.1 million. A photo shows Paul Lang, President of Natural Products, Inc. discussing soyfoods with Cuban president Fidel Castro. As part of the Iowa delegation, he attended a dinner with Fidel Castro. Lang notes about two years after the USSR dissolved [it dissolved in Dec. 1991], Cuba had no feeds for their dairy herds; the cows stopped producing and many died [or were slaughtered for meat]. Since then, Cuba has converted 18 of their 19 dairy plants so they make soymilk and/or dairy alternatives. Also, Cuba is working to incorporate 50% textured soy into most of the country's meat; in the past they succeeded in incorporating 30% soy. Lang said that Castro has an excellent understanding of soyfoods and of the economics of using soy protein to feed Cuba.

PWN Exhibicon has already applied for the permit to organize a follow-up exhibition in Jan. 2004.

526. Kneen, Brewster. 2002. Invisible giant: Cargill and its transnational strategies. 2nd ed. London and Sterling, Virginia: Pluto Press. x + 222 p. Index. 22 cm. 1st ed. 1995. [210 ref]
• ***Summary:*** A critical (and we think sometimes unfair) analysis of Cargill's strategies, activities, and structure. Contents: 1. Mutant giants: Introduction, Bunge Ltd., Louis Dreyfus & Cie, Cargill's world, public policy. 2. Cargill Inc.–The numbers. 3. Origins, organization and ownership. 4. Policy advocacy and capitalist subsidies. 5. Creatures: Feeding and processing. 6. Cotton, peanuts, malting. 7. Invisible commodities. 9. E-commerce. 10. Coming and going: Transport and storage. 11. Typical stories–Canada and Mexico. 12. Fertilizer. 13. The West Coast. 14. Rivers of soy–South America. 15. Juice. 16. The 'Far East.' 17. Seeds. 18. Salt. 19. Only Cargill's future? Notes.

On the back cover we read: "Transnational corporations straddle the globe, largely unseen by the public. Cargill, with its headquarters in the US, is the largest private corporation in North America, and possibly in the world. Cargill trades in food commodities and produces a great many of them... There are few national economies are unaffected by Cargill's activities, and few eaters in North America whose food does not pass through Cargill's hands at some point. Yet Cargill remains largely invisible to most people and accountable to no one outside the company. This is the second edition of an explosive book that breaks the silence on the true extent of Cargill's power and influence worldwide–its ability to shape national policies, and the implication of those strategies for all of us."

About the author: "Brewster Kneen is Canada's foremost analyst and critic of agribusiness." Address: Canada.

527. Richards, Michael. 2002. Time line on soy wax intellectual property. Iowa City, Iowa. 4 p.
• ***Summary:*** Michael began to write this very interesting time line just after beginning negotiations with Cargill. He has updated it from time to time since then. The first entry reads: "1. Michael Richards started manufacturing beeswax candles in New York City in 1991. We served one major customer, a national chain of..." Address: Candleworks, 2920 Industrial Park Rd., Iowa City, Iowa 52240.

528. *Bluebook Update* (*Bar Harbor, Maine*). 2003. Cargill launches isoflavone. 10(1):3. Jan/March.
• ***Summary:*** Cargill Health & Food Technologies has a new product named AdvantaSoy Compress, which is intended to

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be used by the dietary supplement industry.

529. **Product Name:** AdvantaSoy [Complete, Clear, Compress].
Manufacturer's Name: Cargill Health & Food Technologies.
Manufacturer's Address: Minneapolis, Minnesota. Phone: 866-45-Nutra.
Date of Introduction: 2003 March.
Ingredients: Soy isoflavones/phytoestrogens.
How Stored: Shelf stable.
New Product–Documentation: Three leaflets (8½ by 11 inch, color) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2003. March. These "all-natural soy isoflavones" are "Manufactured using food-safe, solvent-free processes." www.cargillhft.com.

530. **Product Name:** Prolísse (Soy protein isolate).
Manufacturer's Name: Cargill Soy Protein Solutions.
Manufacturer's Address: Sidney, Ohio. Phone: 866-Soy-Prot.
Date of Introduction: 2003 March.
Ingredients: Soybeans.
How Stored: Shelf stable.
New Product–Documentation: Leaflets (8½ by 11 inch, color) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2003. March. Has a "notably bland flavor and superior solubility." www.cargillsoyprotein.com.

Note 1. This product is made from defatted soy flakes using Cargill's patented membrane technology (ultrafiltration). Although the place where this product is made is not listed on the leaflet, it is made in Sidney, Ohio.

Note 2. This product was unsuccessful–for a variety of reasons.

531. Andreas, Lowell. 2003. History of work with soybeans (Interview). *SoyaScan Notes*. July 9. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Lowell grew up the youngest of six children, who were born in the following order: Osborn (born in 1903), Albert, Lenore (the only sister), Glenn, Dwayne (born 4 March 1918), and Lowell (born in 1922). Their parents were married in Sterling, Illinois, on 27 Nov. 1902, and soon moved to Minnesota. Four of the five boys (except Osborn, who later became a concert pianist with the Washington Symphony Orchestra, English teacher, and author), shared an almost lifelong involvement in the family's feed and oilseed processing businesses. Osborn was also involved, but only briefly in the mid-1930s.

In about 1927 Lowell's father, Reuben P. Andreas, started a feed compounding business named R.P. Andreas & Son, in Lisbon, Iowa; the "Son" was Albert. He obtained his soybean meal from A.E. Staley Mfg. Co. in Decatur, Illinois; the meal did not come from Joe Sinaiko [who began processing soybeans in the spring of 1928 at Iowa Milling Co. in Cedar Rapids, Iowa]. Reuben's products were sold as "Andy's Feeds." In 1934 Reuben took three more sons (Osborn, Glen, and Dwayne) into the business and changed its name to R.P. Andreas & Sons. Lowell, the youngest, was still in high school.

In 1938, on the advice of his son, Dwayne (who was so advised that year by Mr. A.E. Staley), Reuben decided to start a soybean processing company in Cedar Rapids, Iowa. The family bought an animal feed manufacturing mill in Cedar Rapids, contracted for a soybean processing plant to be built next to it, and imported solvent extraction equipment from Italy; the manufacturer may have been Bonotto. Next to the solvent extraction plant they had a livestock feed plant built. The family (Reuben, Lowell, Dwayne, Glen) moved to Cedar Rapids (12 miles to the northwest) and in 1938 the new company, named Honeymead Products Co., began processing soybeans into oil and meal.

The name "Honeymead" was coined by one of Lowell's brothers (he does not remember which one) in about 1938 in Lisbon, Iowa. The company was incorporated in Iowa.

In about 1944 Honeymead bought land in Washington, Iowa, and had a soybean crushing plant built on it. Shortly thereafter Honeymead had another soybean crushing plant built in Spencer, Iowa. The soybean oil and meal from both plants were sold on the open market.

Note: In May 1945 Cargill purchased the Honeymead plant at Cedar Rapids, Iowa. By March 1947 Cargill also owned the former Honeymead plants in Spencer, Iowa, and Washington, Iowa. Reuben Andreas, Lowell's father, was an entrepreneur and a good businessman. His sons learned much about business from him. Lowell recalls, "We never talked about sports at the dinner table." Reuben was a Mennonite in his youth, but Lowell recalls that "we did not grow up in a Mennonite home–even though Dwayne likes to eulogize about that"–his Mennonite upbringing and values. Reuben remained actively involved on a day-to-day basis with the family solvent extraction plants and the businesses until they were sold to Cargill.

Glen, Dwayne, and Lowell Andreas each learned a lot about soybean processing from Joe Sinaiko–who let them (his competitors) observe operations in his plant in Cedar Rapids. "In those days, there was room for a lot of competitors," Lowell recalls. "Joe was honest and stuck by his word." He also recalls learning about controlling the moisture in the soybeans being processed and the moisture in the meal being sold, controlling the fat content of the meal produced, and doing everything with a few people as possible. Lowell did this by observation in Joe's plant; Joe never "taught" these things to the Andreas brothers.

Lowell's mother, Lydia, died in 1938, when he was age 16. Lowell's father, Reuben Andreas, had several strokes during World War II (which removed him from business

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life), later remarried, and died in about 1958.

Lowell first attended Wheaton College in Illinois for 2 years, then went for 2 more years to the University of Iowa in Iowa City. He majored in philosophy (medieval) at both places. Today Lowell believes that philosophy, which taught him to think, reason, and concentrate on a subject, is an excellent major for business leaders–much better than an MBA degree. Reuben was the only member of the Andreas family who entered the military during World War II. He volunteered and served in the Army Medical Corps in the U.S. for 4½ years; he was in limited service because of his eyesight, so he developed plans to train medics. During the war he married Nadine Hamilton. After the war he returned to Cedar Rapids, where he worked in one of the family owned businesses that insured turkeys; he was an adjustor for turkey insurance for about a year, then the family heard that a soybean plant in Mankato [Mankato Soybean Products Co.] was for sale.

In 1947 Dwayne and Lowell bought that plant and renamed it Honeymead, and Lowell and his wife moved to Mankato from Cedar Rapids to run the plant; "Dwayne was the visionary; I was the manager." Dwayne continued to reside in Minneapolis, where he was vice-president of Cargill, but he would visit the Mankato plant from time to time.

In 1960 Dwayne and Lowell sold the Honeymead plant in Mankato to the Farmers Union Grain Terminal Association (GTA). Lowell had a contract with GTA to manage the company for them for 10 years. After the sale, in 1964 Dwayne and Lowell started National City Bank in Minneapolis; it was Dwayne's idea, but Lowell was interested in finance and had it looked like a good business to be in. In 1965 Shreve "Bud" Archer, Jr. of ADM offered to sell Dwayne and Lowell a block of ADM stock [100,000 shares at about half its book value, for a total of $3.3 million], which amounted to effective control or the company, if they would agree to come in and run ADM–a company that was in decline, had too many workers and was very poorly managed. Dwayne and Lowell saw ADM as a company with great potential if they could turn it around. Dwayne owned 60% of the block of stock and Lowell owned 40%.

Both Dwayne and Lowell moved to Minneapolis, where ADM was headquartered. Lowell stayed there for 1 year. Both men quickly realized that ADM needed "total reorganization" and the first step required moving the headquarters from Minneapolis to Decatur, Illinois,–where they built a new office building. All employees were offered their same jobs in Decatur or generous severance pay if they chose not to move. ADM lost 200 people in the move–without laying off anyone and without problems. Downsizing was the main reason for the move, yet the employees felt they had been treated fairly. By early 1967 Lowell was executive vice president of ADM, and by mid-1968 he was president–focusing on processing and trading. In about 1967 Lowell moved to Decatur with the company, but he told Dwayne at the time that, if he could afford to, he would like to retire at age 50–his ambition since he had gone into business. At age 49 Lowell reminded Dwayne that he had one year left and that he had hired and groomed the man (Donald B. Walker, former vice president of Ralston Purina, and a good friend) to replace him. True to his word, Lowell retired in 1972 at age 50 and moved with his wife back to Mankato. He still owns his ADM stock and today he has residences in Mankato, Naples (Florida, on the Gulf of Mexico), and Grand Cayman (Cayman Islands, in the Caribbean northwest of Jamaica). Lowell has a daughter, Pamela, and a son, David. Dwayne has one son, but he can never return to ADM. Address: Mankato, Minnesota.

532. Liberty Vegetable Oil Company. 2003. Liberty Vegetable Oil Company (Website printout–complete). www.libertyvegetableoil.com 12 p. Retrieved July 23.
• ***Summary:*** Contents: Home page and history (1 p.). 2. Products (incl. almond, walnut, hazelnut, pecan, and macadamia nut oils. Plus a wide range of organic, non-GMO, and other specialty oils). 3. Services. Contact (Chief executive officer: Irwin S. Field. President: Ronald Field. Vice president, operations: Lee Hibama. Vice president: Edward Field).

"... Liberty Vegetable Oil Company was founded in 1948 by Isaac D. Sinaiko. Commencing operations as a small expeller mill producing linseed oil and meal from California grown flaxseed, soybeans were added in the 1950s. During the latter half of the 1960s, Irwin S. Field, the current chairman, refocused the company's long-term objectives toward the development and marketing of tree nut oils and other specialty oils. Crushing and refining capacity was expanded during the 1970s to accommodate custom processing which today is a significant part of the business."

Update: Talk with Ronald Field, president. 2005. Nov. 7. The company has stayed in exactly the same place since it was started. City boundaries moved once, in the late 1970s, placing them in Santa Fe Springs rather than Norwalk. They crushed soybeans until the early 1970s, buying them from West Texas; after that it became uneconomical because of competition from ADM and Cargill. However, they still refine crude soybean oil at the refinery located on the same property as to their crushing plant. Irwin, Ronald's father, is chairman and CEO.

Note: Santa Fe Springs is located about 12 miles southeast of central Los Angeles, near the intersection of interstate highways 5 and 605. Address: 15306 Carmenita Rd., Santa Fe Springs, California 90670-5606. Phone: 562-921-3567.

533. Guglielmo, Connie. 2003. Prices drop for eco-packaging: Biodegradable bowls add consumer appeal to

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grab-and-go case. *Natural Foods Merchandiser.* July. p. 12, 14, 18.
• ***Summary:*** Chemical companies are helping to commoditize a new generation of biodegradable plastics. In 1999 a joint venture between Dow Chemical Co. and Cargill Inc. resulted in Cargill Dow Polymers, based in Minnetonka, Minnesota. Goal: To develop a biobased and biodegradable polymer. Most plastics are made from petroleum and take 100 years to degrade. The new company invested $750 million in the technology, then created NatureWorks PLA, which makes its alternative resin, called polylactide, from natural plant sugars in corn. This resin can be produced using 20-50% less fossil fuel than petroleum-based plastics.

For the last two years, NatureWorks has sold its products mainly in Europe and Asia where strict packaging regulations have forced supermarket chains to seek ecological alternatives.

In April 2002 NatureWorks opened a manufacturing plant in the USA in Blair, Nebraska. The plant, now running at full capacity, can make more than 300 million pounds of PLA using 40,000 bushels of locally grown corn per day.

Another major player is Biocorp, which supplied the Coca-Cola Co. with 100% biodegradable cups for the Salt Lake City [Utah, Winter] Olympics. Frederic Scheer, president of Biocorp (Los Angeles, California) is a maker of biodegradable food service items. To help eliminate confusion about the words "biodegradable" and "compostable," Scheer helped to found the Biodegradable Products Institute (www.bpiworld.org).

534. Vandemoortele. 2003. [History of Vandemoortele: Centennial (Website printout–part)]. www.vandemoortele.com/nl/honderdjaar/frameset/timebody.html Retrieved Aug. 5. [Dut]
• ***Summary:*** 1899–Factory in Izegem is established.

1921–"NV Huileries Vandemoortele" is established. 1936–Consumer oils first produced. 1947–Oils in bottles are launched. 1951–Acquisition of the firm Albers uit Lier. 1955–The firm Metro is established. 1957–Oilseed extraction plant is constructed in Merksem. 1958–A margarine factory is established in Oudenbosch (Netherlands).

1962-67. Further introduction of a line of products. 1969–Acquisition of Meyer Lippinghausen (Meylip). 1974–Vamo Mills established. 1978–NV Vamix established. 1978–Acquire the consumer oils and fats activities of Oleofina.

1980–NV Alpro is established. Construction of a soymilk extraction factory at Gent. 1981-1989–Extension of market positioning into France and Germany. 1989–Acquisition of NV Vleminckx. 1990-1991–Expansion into Eastern Europe. 1991–Construct a new factory for baked goods in the UK. 1992–Joint venture with Fuji Oil Co. 1993–Further expansion of margarine into freezers. 1996-1997–Acquisition of Sojinal in Issenheim, France. Further expansion into southern and eastern Europe. 1998–Divestiture of bulk industry. Joint venture with Cargill. Acquisition of the packaged fat activities of Cargill Europe. Expansion of freezer activities. 1999–Alpro builds a new factory in England.

2000–Vandemoortele Dough Products gets a new logo and a new name: Vandemoortele Bakery Products Division. Vandemoortele Bakery Products opens a new factory for frozen goods in Eeklo, Belgium. Acquisition of the Italian baking specialist Star SpA. Acquisition of Alain Sobrie S.A. Vandemoortele becomes a shareholder of *Cuisine de France* (CdF). Group Vandemoortele sells its share of NV Vamo-Fuji to Fuji Oil.

2001–Vandemoortele acquires Alimas in Italy. 2002–Acquisition of Lasem of Spain. Sale of shares in aOP to Cargill. Address: Netherlands.

535. Bruemmer, Bruce. 2003. Recent research on vitamin E and tocopherols (Interview). *SoyaScan Notes.* Sept. 17. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Recent research on vitamin E has showed that supplements containing natural mixed tocopherols (alpha, beta, and gamma) are the most effective. Most vitamin E supplements contain only alpha-tocopherol, and many brands are synthetic rather than natural–which has greater bioavailability.

Paul previously worked for 4 years at Protein Technologies International (PTI) in their business unit. Address: Archivist, Cargill Corp., Minneapolis, Minnesota.

536. Nelson, Tina. 2003. SANA [Soyfoods Association of North America] 25th anniversary celebration. September 4, 2003. Washington, DC: Soyfoods Association of North America. 2 p. 28 cm.
• ***Summary:*** A brief and superficial story of the founding of the Soyfoods Association of North America in July 1978 in Ann Arbor, Michigan. Steve Demos and Lester Karplus, who were present at both the founding and at this reception, shared their reflections of the past 25 years. She thanks the chefs who created the evening's soy delicacies: Kim Galaez, Patricia Greenberg, Dana Jacobi, and Akasha Richmond. She also thanks and acknowledges the sponsors of the evening: ADM, Cargill, Hain-Celestial Group, Kellogg / Worthington Foods, Light Life, Solae LLC, Sunrich, Tetra Pak, Vitasoy-USA, and White Wave. And she welcomes special guests from USDA, FDA, and Capital Hill.

The talks ends: "Thank you all for coming and enjoy the soy treats and the historical documents and photos with your colleagues." Address: Galaxy Foods.

537. Saunders, David. 2003. Update on the Soy Protein Council (Interview). *SoyaScan Notes.* Nov. 21. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The Soy Protein Council has not been very active during the past few years. They have no annual budget

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except for a fixed management fee (overhead, which pays indirect costs including part of David's salary), deal mainly with regulatory issues (such as USDA, FDA, and school lunch programs), and are paid on a project by project basis. There are three members: Cargill, ADM, and Solae (a joint venture of DuPont and Bunge).

The member companies do promotion at the company level. They have seen much growth in demand for soy protein products since Oct. 1999 when the FDA issued its heart health claim for soy proteins.

Since one of the members was involved in anti-trust and price-fixing issues several years ago, that company's attorneys have advised that they should not be meeting in a closed room with their competitors. When they do meet, David hires an anti-trust attorney to be present at the meeting, makes sure that there is a clear agenda that is adhered to, and that detailed minutes are kept.

NOPA (formerly NSPA) used to be managed by Sheldon Hauck & Associates, but they left for another management firm. Address: Executive Director, Washington, DC.

538. FBX. 2003. Soyfoods Summit: February 18-20, 2004. Hyatt Regency La Jolla, San Diego, California. www.foodbevx.com (Brochure). Little Falls, New Jersey: IQPC. 12 p. 28 cm.

• ***Summary:*** This brochure begins: "The Food & Beverage Exchange is proud to present its 7th Annual Soyfoods Summit." In association with Soyatech. Media partners: Nutrition Business Journal, The Soy Daily, Nutraceuticals World. The conference, which is being organized by The Food & Beverage Xchange, a division of IQPC (London, England), will have two separate tracks of presentations: (A) Technology & applications, and (A) Health benefits of soy. Summit chairs: Peter Golbitz, president, Soyatech, is chair of track A. Geri Berdak, Director, Public Affairs, The Solae Company, is chair of track B.

The facts: (1) "The US Soyfoods market has grown at an average annual rate of 14% per year for the past ten years and hit $3.65 billion in 2002." (2) "Per capita soy consumption will rise by 50% in the next 5 years." The main speakers, with their organization, track, an outline of their talk, and a small photo are given. Track A: Dr. Jonathan F. Gordon, Firmenich Inc. Hiraoki Iwamoto, Tendre Corp., Japan (frozen tofu). Phil Fass, ADM. Dr. Michael Shemer, Tivall Corp., Israel. Motohiko Hirotsuka, Fuji Oil Co Ltd, Japan. Brad Strohm, Wenger Manufacturing Inc. Mian Riaz, Texas A&M University. KeShun Liu, Univ. of Missouri at Columbia. Victor Braverman, Braverman & Associates, Mexico. Jorge Arturo Canas Diaz, Central Heledra Diaz, Costa Rica.

Track B: Milagros Virginia C. Lim, Nestle Philippines Inc., Philippines. Mark Messina, Nutrition Matters Inc. John L. Williams PhD, Univ. of South Dakota. Prof. Fujian Yang Zhenhua 851 Bio-Science Co Ltd, China. Omer Kucuk M.D., FACN, Wayne State Univ., Karmanos Cancer Inst. Helen Kim PhD, Univ. of Alabama at Birmingham. Prof. Mindy S. Kurzer, Univ. of Minnesota. Dr. Ari Babaknia, DrSoy. Wendy Barrett, Eat Smart. Deborah Miller, The Solae Group.

Day 1–General session at end of day: John A. Schillinger, PhD, Heartland Fields, LLC. Peter Hannam, First Line Seeds.

Day 2–General session running all day: Paul Lang, Natural Products Inc. Seth Tibbott, Turtle Island Foods. Tom Woodward, Tetra Pak, Singapore. Ted Nordquist, WholeSoy Co. Hsien-Hsin Chang, Lightlife Foods. Gerard Klen Essink, Prosoy Research & Strategy, The Netherlands. Frank Daller, Soyadairy, Canada. Daniel Burke, Pacific Soybean & Grain. Garnet Pigden, The Solae Company. Gerry Amantea, Hain Celestial Group Inc. Johanna McCoy, Soy Happy. Kim C. Kristoff, Gemtek.

Post-conference interactive workshops: Tim Redmond, formerly with American Soy Products. Patricia Godfrey & Danielle Karleskind, Cargill Soy Protein Solutions. Peter Golbitz, Soyatech.

For those who register and pay in full by Dec. 5, the Gold Package of conference plus three workshops the price is $2,999. By Dec. 31 it rises to $3,099. By Jan. 9 it rises to $3,199. After Jan. 9 the full price is $3,299. This does not include lodging and food. The price is $1,299 for those who register by Aug. 1, but $1,599 after Sept. 15.

Note: Talk with two people who will speak at this conference. They are paid no honorarium for speaking, and they must pay their own transportation both ways and all room and board expenses while at the conference. Why do they go? Both say this gives them an opportunity to attend the conference free of charge, to have a nice vacation in a warm and beautiful part of California, and to meet now people and promote their ideas and (informally) their products.

539. CHS Cooperatives. 2003. Annual report 2002. St. Paul, Minnnesota. 48 p. 26 x 21 cm.

• ***Summary:*** CHS stands for Cenex Harvest States. This is *the most* creative and interesting annual report ever seen by Soyfoods Center. The full title (in a self-adhesive clear plastic envelope attached to the center of the tan cover) is: "This is not an annual report (It's a producer to consumer success story). Each of the following sections has a full-page color photo on the left hand page with a title, starting with the words "This is not..." in a box. For example: "This is not a steer. It's a partnership." This is not an ear of corn. It's a special order."

Contents: Leadership letter. Energy. Agronomy. Grain marketing / processing. Foods. Services. Financial highlights. Financial report. Board of directors. Management team. Acknowledgments.

The section on "Processing" (p. 15) states: "Ground was broken in April 2002 near Fairmont, Minnesota, for a second

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soybean crushing facility. This state-of-the-art plant, set to begin operating by harvest of 2003, will supply soybean meal to livestock producers and soybean oil for our oilseed refining facility at Mankato, Minnesota [Honeymead], which supplies Ventura Foods, LLC. The $90 million plant will consume 110,000 bushels of Midwestern soybeans every day, doubling our crushing capacity. Studies are underway to determine the ability to produce biodiesel as demand and margins dictate."

The "Financial overview" states: "The Company was created in 1998 with the merger of two entities, Cenex Inc. and Harvest States Cooperatives, which were both organized in the early 1930s."

In January 2002, the Company formed a limited liability company (LC) with Cargill, Inc., named Horizon Milling LLC (Horizon) to engage in wheat milling and processing. The Company holds 24% interest in Horizon.

In Nov. 2001 the company purchased the wholesale energy business of Farmland Industries, Inc. Address: St. Paul, Minnesota.

540. Alexander, Melissa. 2004. Focus on Brazil: Soybean sector surges ahead on investments by multinationals, domestic companies. *World Grain* 22(1):22, 24, 26-27.
• ***Summary:*** Worldwide, Brazil ranks first in exports of coffee, orange juice and soybean meal, second in exports of soybeans and tobacco, and third in exports of beef and poultry. Brazil's main export markets are the U.S., Argentina, Japan, and the Netherlands.

A valuable sidebar titled "Key facts," gives basic information about: Capital city, demography, geography, government, official agricultural agencies, economy, G.D.P. per capita, currency, exports, imports, major crops / agricultural products, wheat, soybeans, maize, transportation, internet. A half-page section discusses oilseeds (mainly soybeans) in Brazil. Underlying Brazil's spectacular rise as a world soybean producer is "a whole new system of oilseed inputs, outputs, and infrastructure led by multinationals, such as Cargill, Inc. and Bunge Limited, and large domestic companies." On the one had, these companies have made seed, fertilizer, herbicides, and credit available to farmers, while on the other hand they are offered purchasing, crushing, transport and export facilities to complete the cycle. Many new soy-related projects are under construction or being planned.

A graph (1994-95 to 2003-04) shows Brazil's soybean production and soybean exports, and U.S. soybean exports.

541. **Product Name:** Chrome Flame (Soy Candles) [Jaguar–Dogwood, Mercedes–Gardenia, Porsche–Cinnamon Vanilla Bean, Lexus–Lemon and Lemongrass, BMW–Angelwings Fragrance, Cadillac–Musk].
Manufacturer's Name: Chrome Flame.
Manufacturer's Address: 480 Paseo Camarillo #306, Camarillo, CA 93010.
Date of Introduction: 2004 February.
Ingredients: Cargill C-3 Soy Wax, plus fragrances.
Wt/Vol., Packaging, Price: Individual candles sell for $40 in southern California.
How Stored: Shelf stable.
Nutrition: -
New Product–Documentation: Talk with Dakota (she calls), founder of the company. 2004. May 21. Dakota used to have serious respiratory problems and she also often burned paraffin candles at home, Then she learned that the soot from these candles might be causing her problems. So she switched to burning soy candles and her problems went away. She is a stunt woman (she lights herself on fire) and she lives in Camarillo near the ocean, so the Los Angeles smog is not much of a problem. The main problem she is working on is "scent throw"; soy candles do not give off fragrances as well as paraffin candles. She bought her first soy wax from General Wax in North Hollywood. Then she bought several boxes of "C-2" from Michael Richards in Iowa. About a month ago Cargill introduced an improved candle wax named C-3, and she thinks that Michael Richards gets no royalties on this. He contact at Cargill is Brenda Stubby (pronounced STEW-bee), sales coordinator. Phone: 877-727-0696.

542. Richards, Michael. 2004. Update on Candleworks Inc. (Interview). *SoyaScan Notes.* March 19. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** During the past 18 months Candleworks Inc. has paid off its main investor, become profitable, and is now growing nicely. Last year Michael had basically no employees at Candleworks and he traveled 90,000 miles. Now that he has established the business and has the financial resources he needs to employ others, he plans to do so. Michael is still deeply involved in helping poor people–increasingly worldwide–by training them in the basics of starting and running their own businesses making candles. In the USA more than 200 candlemakers (many of whom call themselves "Village Chandlers") are members of the Village Chandler Alliance; most are small, but growing. About 15 of the candlemakers are farm families, and two are members of the ARC (Association of Retarded Citizens, a non-profit), which employs disabled people running their own businesses. One group of village people in El Salvador is making soy candles on the grounds of a mission.

The biggest U.S. company making only soy candles is Cedar River Candle Co. in Newhampton, Iowa; their brand is Soy Basics. They claim their candles are now sold at 10,000 retail outlets. For the past 3 years they have been by far the most aggressive marketers of soy wax candles in the nation. They have huge displays at every gift-industry and housewares trade show (the shows candlemakers attend). "Soy is now the buzz–the hottest topic–at those trade

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shows–because it is a clean-burning wax." In the Feb. 2004 issue of Giftware News (a thick, glossy trade journal given away at all the shows) is a quote from the president of Unity Marketing–the industry's leading market research company, based in Pennsylvania. He says: "Unless you shift to soy, you are going to be left out of the candle industry."

One of the most active fragrance companies in the candle industry is Intercontinental Fragrance in Texas. Each year they spend tens of thousands of dollars to hire a market research company to investigate the hot trends in color and aroma; then they publish the "Trend Report." In the recent past, all the reports have been about fragrance and color. But this year (2004), the entire page 2 is devoted to a simple statement: "Now is the time to shift to soy wax."

Michael got those two publications on the same day and said to himself, "You know, this whole thing is finally working."

Candlemakers advertise the fact that using soy candles reduces (in a small, symbolic way) our dependence on imported petroleum and supports local farmers. Candles are a $3 billion industry, whereas petroleum for fuel is a $3,000 billion ($3 trillion) industry.

In August 2003 the Village Chandlers all came to Cedar Rapids and decided to form a trade association named the Chandler Guild; during the next 12 months they are discussing the actual form their association will take, such as a non-profit corporation–501(c)(3), a co-op, a marketing board, etc. They elected a managing group of 12. Their website is www.chandlerguild.com and the members communicate with one another via the website. They use it a lot, and one major use is to coordinate orders of soy wax so as to minimize freight costs.

Moreover, these small producers with their clear environmental message are driving the big, established manufacturers to change. For example: Hannas, at Fayetteville, Arkansas, is the largest candle factory in the USA–with 1 million square feet under one roof. But now 5-10% of their candles are made with soy wax. Their marketing director, Annette Davidson (phone: 1-800-327-9826) is passionate about soy candles; she refuses to burn typical petroleum-based paraffin candles in her home–and she has often said so in public interviews. The big candle makers, by introducing lines of soy candles, are hedging their bets–so that they will be ready for new developments. All are using the Soyawax made by Cargill and Michael earns a royalty on every pound sold.

A company in Europe has registered the trademark "Phytowax"; they make waxes from olive oil for the cosmetic industry. About 4 years ago, some Internet entrepreneur bought the domain name soywax.com, then tried to sell it to Michael for $10,000. For the past 4 years, Candleworks' website has been www.soyawax.com, so Michael asked a patent and trademark attorney apply for "Soyawax" and "Soywax" (rather than "Phytowax") as their registered trademark. Michael has phased out use of the word "Phytowax," which he used formerly.

The cheapest candles are those imported from China. However the soy candles and the typical paraffin candles purchased by most Americans in grocery stores, department stores, gift shops, etc. sell for about the same price. So their is every reason to buy a soy candle that burns cleaner, supports American farmers, and reduces petroleum imports. Michael predicts that within 5 years, production of soy candles will pass that of paraffin candles.

The Rural Futures Institute (RFI), presently at the University of Montana at Havre, has taken a deep interest in Michael's work with homeless and disadvantaged people, and in the Chandler Guild; they even set up the latter's website, and came to the annual Guild event in Cedar Rapids. Their focus is looking at microenterprise as a solution to economic development in both rural and urban areas. They have become very active in the Guild and are providing much of the guidance and technical support. Contact Jim Salmons–phone: 406-265-3527.

All of Michael's activities are under the umbrella of Candleworks Inc. For example, when Cargill writes a check, they write it to Candleworks Inc. The candle factory is also under Candleworks–but it is now run by his son. To help poor people, Candleworks simply hires them. Address: Founder, Candleworks, Inc., 1029 Third St. S.E., Cedar Rapids, Iowa 52401. Phone: 319-363-1774.

543. Clute, Mitchell; Lipson, Elaine. 2004. 25 ideas that changed the industry. *Natural Foods Merchandiser.* March. p. 54, 56, 60, 62.

• ***Summary:*** 1. You are what you eat. 2. Organic Gardening and Farming (Rodale's). 3. The Dietary Supplements Health and Education Act (DSHEA, 1994). 4. Organic Certification (USDA, 2002). 5. Natural Foods Co-ops. 6. Advent of large natural supermarkets (Alfalfa's, Wild Oats). 7. Mainstream markets get natural. 8. The emergence of the integrative pharmacies. 9. Earthbound Farms' bagged salads.

10. Horizon becomes the first national Dairy Brand (1991). 11. Soymilk moves to cold case (White Wave's Silk, 1996). 12. It's soy good, I can't believe it's not meat (Gardenburger). 13. Health claims for foods. 14. What does it mean for a food to function [functional foods]. 15. Alternative medicine goes mainstream. 16. Scanners, bar codes, and OrderDog. 17. National natural distribution (Tree of Life). 18. Private label (lower price than name brands). 19. Natural, vegetarian and organic foodservice.

20. Healthy home meal replacement and fast food. 21. Healthy convenience foods. 22. Recycled and recyclable packaging (Dow Chemical Co. and Cargill Inc. developed the polymer). 23. Genetically modified organisms. 24. Organic goes gourmet. 25. Farmers' markets and communally supported agriculture.

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544. Almquist, Brett. 2004. Soy wax in America (Interview). *SoyaScan Notes.* April 2. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Many candlemakers buy their soy wax from Candleworks (the distributor); it is made for them to their (Candleworks') patented formula by Cargill. Brett makes his own soy wax using formulas he has painstakingly developed (with a research company) over 2½-3 years. The key variables are the level of hydrogenation of the oil (one or more levels) and the hardeners. He buys all the ingredients / raw components (such as hydrogenated soy oil, fragrances, etc.) and blends them himself. The most difficult type of candle to make with soy wax is pillar candles–which are his forte. Research has shown that pillar candles made from his soy wax formula are of better quality than those made from Candleworks' soy wax. He does not plan to patent his formula "since a patent is only as good as the enforcement you give it." When you patent a formula, you give away most or all of your secrets; it becomes public knowledge.

Two years ago, the National Candle Association commissioned a burn test of different types of candle waxes. They compared pure paraffin, pure beeswax, and 6-8 vegetable wax formulas. They made a 3- by 3-inch pillar, unscented, with the same wick in all. They measured diameter of the melt pool, rate of consumption, etc.–nothing about soot. The results showed that his candles burned the best, better than even paraffin and bee's wax.

He does not want to sell the wax for two reasons: (1) He does not want to start competing with himself; (2) You can't make any money selling wax–in part because the price of soybeans is at a 15-year high. His candles now cost about 10% more than paraffin candles. Most of the hydrogenated soy oil in America is made by ADM (his source) and Cargill. Some candle makers use straight hydrogenated soybean oil in their candles; it will work, but the quality of the candles in mediocre.

Candleworks sells most of its oil in liquid form in large quantities–such as tankerloads (40,000 lbs). But most smaller and medium-sized candlemakers can't handle or buy liquid wax. They buy it in solid form, pelleted or spray dried.

Brett is not sure who the largest manufacturers of soy wax candles are. He thinks his company is in the top three. He has the most diverse product line and the most unique, upscale look. Colonial is a 95 year old company that sells mostly paraffin candles, but also sells "soy blends" which contain more than 50% paraffin. Hannas in Fayetteville, Arkansas, is very large, but they make much more besides candles–such as soaps, and they pour their soy wax in frosted glass so that defects on the surface aren't visible. Hannas is not one of the biggest makers of paraffin candles; they focus on lower-cost candles–as for Walmart. lotions, bath salts, etc. They cannot do pillars, Their soy votives are very soft (2 oz), so it is hard to ship them. Yankee is another big candle company, but they don't so much soy. One company that frustrates Brett is Bean Pod (Iowa). They trademarked a name very similar to his and they use the same typeface. Candleworks is surely one of the largest, if not the largest, maker of bulk soy wax. But he has never seen Candleworks at gift shows.

Brett does not know which company made the first soy candles–at least 90% soy. Address: Founder and president, BeansWax Candle Co., P.O. Box 1151, Maple Grove, Minnesota 55311. Phone: 1-866-BEANSWAX.

545. Craig, Del. 2004. Soy waxes for candles sold by Cargill, Inc. (Interview). *SoyaScan Notes.* May 21. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** There are no regulations concerning what can be called a "soy candle" or "vegetable based candle" etc. This is not an issue from Del's viewpoint if people call a candle a "soy candle" even if it contains relatively little soy wax. But for some companies selling "soy candles" he can see how it would be an issue. Cargill's focus is developing better vegetable-based candle waxes (mostly soy) and helping candlemakers develop better candles. Cargill uses the full gamut of available triglycerides to develop their blends. The key is to develop the best functionality for the customer.

Cargill advertises that (compared with paraffin candles) their NatureWax blends are dramatically cleaner burning, and they can hold much higher levels of fragrances / fragrance loads. Cargill soy wax candles have better "scent throw" than paraffin candles–both cold and warm–because they can hold more fragrances without weeping out like they do in the paraffin candles. This has to do with things like molecular structure, clarity, etc.

In positioning their brand, Cargill wants to lead with performance, not with the "green effect" or ideology (i.e. it's "environmentally friendly," and contains less petroleum). Nevertheless, Cargill believes that ideology is very important. "Cleaner burning" is both a performance and an environmental issue. The higher percentage of vegetable-based waxes a candle maker uses, the steeper they are going to get up that cleaner burning curve.

Concerning the price of wax: Cargill can produce soy wax that sells for the same price as paraffin wax as long as the two waxes have the same functionality. But how they get the wax is very different. Cargill starts with oilseeds, extracts the oil, then processes it. Paraffin is a co-product or by-product of the manufacture of lubricating oils–and only lubricating oils (such as the motor oil used in typical cars). Crude oils from different sources contain different levels of wax, sulfur, etc. The big auto makers in Detroit, Michigan, have successfully pushed the petroleum refiners to make better and better lubricating oils. In the process, they have learned how to further process paraffin by cracking to make it into lubricating oils. This has taken about 1.2 billion pounds of paraffin production capacity out of the domestic

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U.S. market. With a shrinking supply of paraffin, the price has gone up.

Moreover, there is a wide variety of petroleum paraffins; multiple fractions taken at multiple melt points off the fractional distillation process. Generally, the higher the melt point the higher the price of the paraffin fraction, but other factors are also considered–From the high-end microcrystalline waxes (used in various products for their high melt points and plasticity, etc.).

In addition, their are now some major suppliers of vegetable-based waxes–such as Cargill, plus IGI, Honeywell, Strahl-Pitch (about 100 years old), etc.–who have scaled up their operations so they can benefit from the economies of large scale production. They can put together teams to learn the market, develop better products for the market, and serve as a resource to this candle industry.

Cargill was a pioneer in the soy wax field–It was "the first U.S. soy processor to manufacture from raw materials a vegetable-based or soy-based wax to be used in the candle industry." Cargill's knowledge of lipid chemistry has been very helpful in developing better waxes. Cargill began to sell vegetable-based waxes to the candle industry about 4-5 years ago, but Cargill now has competitors, which probably serve 120 different industry segments.

I mention Michael Richards. Del says: "Now be careful. Certainly Michael Richards was initially a customer who came to us and asked us for our help, and yes we helped him. Cargill is all about customers. When a customer comes to us and asks us to help them, that's what drives our business." Cargill had already started "looking at" vegetable-based waxes before Michael Richards arrived.

Today, most of Cargill's NatureWax (90%) ends up in candles. Cargill is exploring other applications.

Soy candles burn slightly longer than those made with paraffin, provided that the wick is sized correctly. Address: Product line manager, NatureWax brand, Cargill NatureWax, P.O. Box 2696, Wichita, Kansas 67201. Phone: 877-727-0696.

546. Reese, Meghan A.T.B. 2004. Soy wax kindles cleaner candles: At home. *USA Today.* May 21. p. D1. Life section.
• ***Summary:*** "Soy is adding fuel to the fire of the candle trend because it's safer and cleaner." Candles made from paraffin, a by-product of petroleum, "release black soot and carcinogens when burned," according to John Nicolaisen [Jon Nicholaisen], president Soy Basics, which began making "soy candles" 3 years ago. "Soy wax is clean-burning and biodegradable making the candles not only healthier but eco-friendly. Soy candles burn longer than those made with paraffin. They won't burn a hole in your wallet; prices are comparable to paraffin." A photo shows 2 paraffin-free soy candles in glass containers

Note 1. Talk with Del Craig of Cargill NatureWax. 2004. May 21. This kind of statement about carcinogens really hurts Cargill's movement into the soy candle industry and their development of better candle products. The people at the National Candle Association just turn bright red when they read that statement about carcinogens. The makers of paraffin candles have a lot at stake until all of their paraffin candles are replaced by vegetable-based candles. Why scare somebody into buying a candle? The soy candle industry must be responsible in educating consumers.

Note 1. Studies have shown the type and amount of soot and aromatics that result when candles made of different wax blends are burned. Some by-products of soot (benzene, polycyclic aromatic hydrocarbons and methyl ethyl ketone are suspected carcinogens. Source: David Krause–Florida Dept. of Health).

547. Stubby, Brenda. 2004. Soy waxes for candles sold by Cargill, Inc. (Interview). *SoyaScan Notes.* May 21. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Cargill's brand name / registered trademark for vegetable-based waxes is NatureWax. These never contain any petroleum products. Most are made from soybeans, and those are generally referred to as "soy waxes."

Cargill makes and sells three basic types: Container wax, pillar wax, and votive wax. There are three types of container wax (but only one type each of pillar and votive wax): C-1 is a vegetable blend (mostly soy) with other plants; it was introduced about 5 years ago. C-2 is an improved 100% soy wax (largely outdated). C-3 is the latest all-soy container wax, introduced in Feb. 2004.

In Wichita, Kansas, where Cargill NatureWax is located, there is a soybean crushing plant, a vegetable oil refinery, and the plant that manufactures NatureWax, which is sold in two forms and quantities: Flakes in 50-lb boxes and bulk in tankers. These products are also made in Charlotte, North Carolina, and Sidney, Ohio.

Note: Brenda's surname is pronounced STEW-bee. Address: Sales Coordinator, Cargill, Wichita, Kansas. Phone: 877-727-0696.

548. Richards, Michael. 2004. Life and work with candles: Part V. Preparing for Cargill (Interview). *SoyaScan Notes.* May 24. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** In about 1998 Michael proposed to his mentor, Herb Wilson, that they file a patent on their process for making candles using vegetable waxes. He discouraged Michael from it and said he would not pay for it–since that would reveal the process to all competitors, invite legal problems, and require an expensive defense of the patent. A patent is only good to the extent that it can be enforced legally.

Before Michael and Cargill met, Cargill had conducted some R&D for the Prang Soybean Crayon wax, but they had done absolutely nothing with candles. The Iowa Soybean

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Board has documented the fact, and it is well established, that Michael had sold soy candles (made from about 30% liquid soybean oil and 70% beeswax) nationally, including in nationwide chains, before Purdue Univ. (Indiana) announced the idea of making candles from soybean oil. Purdue was issued a patent on their process, which called for mixing soybean oil with petroleum waxes (esp. paraffin).

It was at this stage that Michael contacted Cargill; he wanted to replace his liquid soybean oil with solid (hydrogenated) soybean oil so he could decrease the percentage of expensive beeswax. So in about 1996-97 he began as a Cargill customer, ordering hydrogenated soybean oil from their plant in Sioux City, Iowa (plant manager Jody House). About 6 months after he started to buy vegetable wax from Cargill, Michael found a second source in ADM. On 10 Sept. 1999 Archer Daniels Midland Co. (ADM) invited Michael to their headquarters in Decatur, Illinois. Michael was now ordering stock edible hydrogenated soybean oil in 55 gallon barrels from both Cargill and ADM–to compare them. Each purchase was about $25,000 to $30,000–but they knew he was more than a hobbyist. ADM said they felt there was long-term commercial opportunity here, and they wanted to discuss it. On Sept. 10 Michael and ADM signed a confidentiality agreement titled "The secrecy agreement." However, in that meeting, ADM did not provide Michael with any information. At the time Michael was working on paper coating wax with ADM so, in the margin of the agreement, they widened the scope to include "all paraffin wax replacements." Michael already had another confidentiality agreement with a paper coating company that serves the fast-food industry. Nothing ever came of this agreement with ADM, however it was significant in the larger picture. To this hydrogenated oil, Michael added other vegetable fatty acids to make a candle wax. After Michael had been Cargill's regular customer for about a year (they knew he was using it to make candles, but nothing more), they began getting calls from established candle makers and they realized that a new market was emerging for candles made from plant-based waxes. So they contacted Michael. But before they did, Michael had met with Zarley Sease, a law firm in Des Moines, Iowa, that does all the patent and intellectual property work for Pioneer Hi-Bred International. In the fall of 1999, at their request and as a first step, he provided them with written documentation (timeline, history, description, documents) of developments related to candles during the previous 7-8 years leading up to his use of soybean oil in candles. The most complete copy is probably at the law firm, but Michael has most of it. He then worked with Zarley Sease to develop a patent application, which covered four specific formulas, two for the candle industry, a cosmetic base, and a package / paper coating wax. He was already thinking beyond candles. The patent was basically for a candle composed of about 85% hydrogenated soybean oil and 15% other vegetable fats from other plants. Candleworks had already been producing such candles for 3-4 years. On 5 April 2000 Michael's patent application for a process for making plant-based candles was filed by Heidi Nebel-Sease of Zarley Sease–which had just defeated Cargill, on behalf of Pioneer, on a major seed issue.

When Cargill learned that Michael was working with Zarley Sease, they realized that they couldn't just walk around or over him. At that point, in the summer of 2000, Del Craig of Cargill called Michael and asked if they could come to talk with him at his office about what they believed there was some new potential. When Del Craig walked into Michael's building in Iowa, the plant was filled with black barrels with "ADM" stamped on each one. He said, "This breaks my heart; what can we do to make a deal." It was the first time he realized that Michael was also buying from ADM. Address: President / Founder, Candleworks, Inc., 1029 Third St. S.E., Cedar Rapids, Iowa 52401. Phone: 319-363-1774.

549. Richards, Michael. 2004. Life and work with candles. Part VI. Working with Cargill (Interview). *SoyaScan Notes.* May 24. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** 3 patents: (1) 2002 Oct. 31. Cargill filed a patent application that resulted in the final patent. On page 4 we read: "This application is a continuation in part of U.S. applications (1) 2000 March 6 from Cargill based in part on info provided by Michael. (2) Michael's filed independently on 2000 April 6. is now in the story. They make both of those earlier applications part of this application, which resulted in the one final patent. Described as a "triglycerol-based alternative to paraffin wax."

In addition to paraffin, some petroleum-based polymers (brand name: Vibar) are sometimes used as a candle additive.

Del Craig of Cargill flew into Iowa City, Iowa, came to Michael's candlemaking facility, and said that Cargill wanted to sit down at the table and start negotiating to purchase or license his intellectual property.

On 17 March 2000 Donald E. Hansen, director of Cargill's oilseeds division, executed a confidentiality agreement on behalf of Cargill; it was the first formal document between Candleworks and Cargill.

Cargill's original information about hydrogenation levels for candle use came from Michael; they would always send Michael stock goods–such as 60% and 80% hydrogenation. He would then blend these and report back to Cargill as to what percentage hydrogenation he wanted to order next–in a barrel. Thus Cargill began doing custom hydrogenation (to a specified percentage) for Michael; but he did not disclose anything about the other ingredients he was mixing in until later–after a confidentiality agreement had been signed.

On 14 Sept. 2000 a first letter of understanding was signed. On 3 Oct. 2000 a revised and slightly expanded version of the first letter of understanding was signed, by Del

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Craig.

In Dec. 2000 Cargill filed a very early patent application for a process for hydrogenating soybean oil specifically to make candles. Michael later found out that in this patent Cargill had used the information he had provided to Cargill in his blending process–yet they did not name Michael as inventor or co-inventor–even though these disclosures were covered under the previous confidentiality agreement.

About 3 months later the negotiations began, in Iowa City, in the accounting office of McGladrey-Pullen (an international law firm recommended by Herb Wilson) with Del and John Bill (his supervisor) representing Cargill, and Michael and Herb Wilson representing Candleworks. As a result, Cargill sent Michael him a letter of intent / interim agreement, which he took to an attorney, Mat Krigbaum of Moyer Bergman in Cedar Rapids. Mat was present at the rest of the negotiations with Cargill–which were held in Mat's office. Michael's mentor and "angel investor" in Candleworks is Herb Wilson. He sat in on all meetings with Cargill from that point forward, since he had a financial interest in getting paid back.

In March 2000, after the confidentiality agreement was signed (but before any Cargill attorneys came to Iowa), Cargill invited the Richards family (Michael, his son Michael, Jr., and his wife Lynette) to be their guests at a visit to Cargill's global headquarters in Minnetonka, Minnesota, to discuss this soy wax venture. At that point they were really courting Michael's involvement and they gave him and his family the "full treatment." They were even taken down into the basement of the lakeside mansion, where all of their top commodity traders work, and where they were told that very few people were invited to enter.

Cargill employees John Bill, Del Craig, and Doug Collison has all assembled for this meeting. At this point, Michael had been working with Messrs. Bill, Craig, and Collison for nearly one year. Two members of the Cargill legal team came into the room to join in the meeting. Glen Goldman, Cargill's intellectual property attorney, was demeaning and rude; he said that Candleworks' patent application had no value to Cargill.

One the way home, the Richards family discussed the attitude of the Cargill attorney and the legal staff they had met, which was in marked contrast to the relationship they had had with Cargill staff prior to that time.

Michael and Candleworks continued to maintain a very cooperative and congenial working relationship with Cargill's oilseed staff members, who suggested that they not be bothered by the legal staff's attitude. After the Minnetonka meeting, Cargill's legal staff delayed for many months any forward movement on the negotiations for a joint venture. However Cargill's sales and production staff continued to ship vegetable wax to Candleworks, which continued to make and market soy wax candles using their own proprietary processes and formulas. At this point Candleworks added a small amount of palm oil to the soy wax to improve its performance. Bill and Craig expressed dissatisfaction with the slow pace of Cargill's legal department in finalizing an agreement.

All these delays left Candleworks in a very difficult financial position. Although national demand was developing for their soy wax products, they did not have the operating capital to move forward. Cargill kept them in financial limbo. Suddenly, without advance notice, Candleworks' landlord sold the building in which they had operated for several years, and gave Michael 30 days to dismantle a quarter mile of steam pipe, ten tons of equipment and melting tanks, molding machines, etc. Cargill was fully aware of the financial stress caused by this forced move.

Although the delays with Cargill continued for months, Cargill encouraged Candleworks to keep producing the wax in house to build a customer base. Michael persisted against difficult odds during the dislocation by producing wax in 55 gallon barrels in a machine shed with strap heaters and a pump.

On 14 Sept. 2000, about 8 months after the Minnetonka meeting, the foot dragging ended when Cargill's Oil Seeds Division presented a "Letter of Understanding" (interim agreement) with two basic terms: (1) Cargill would manufacture the soy waxes created by Michael Richards. (2) Candleworks would provide marketing services to sell candle wax for 50% of Cargill's net margin on the production and sale of this product.

At subsequent negotiations Cargill had a corporate business attorney and an intellectual property attorney. It took about a year before a final agreement was reached.

The negotiations with Cargill: The process was weighted in their favor. They had whole team of Cargill executives and three attorneys.

At this point, under the terms of the confidentiality agreement, Michael delivered specific candle wax formulas that he had created with all-vegetable base materials from Cargill's existing food industry stock. He had created novel blends of waxes that worked very well for candle production. Using these formulas, Cargill then started producing candle waxes. At first, the new product was shipped to Michael as a soft solid in 55-gallon barrels. Then when Michael started lining up new customers for a wax that was preformulated and ready to melt for candles, Cargill started making the was in flake form (50 lb boxes) at their C and T Refinery in Charlotte, North Carolina. Actually Michael began selling the flakes under the letter of intent, 3-4 months prior to signing of the final agreement. His earliest customers were Cedar River Candle Co. (started by Michael's brother-in-law, Owen Nebergall, a soybean farmer, who later died of a heart attack) and MDK (which purchased part of Cedar River, and in May 2004 claims to control 33% of all soy candles sold in the USA). Note: The single largest U.S. user of soybean wax today (bigger than Candleworks) is Cedar River Candle / Soy

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Basics, which does $25 million a year in candle sales. They still choose to use C-1. Michael estimates that he presently gets a royalty on about 75-80% of the candle wax made by Cargill. Thus, Cargill has tried for 3 years to better the C-1 formula, but has not been able to. Michael is convinced the C-1 formula is still best because so many customers tell him that.

Michael welcomed this shift to the Cargill plant because of the difficulties he had experienced mixing this product manually in barrels. The demand for soy wax (not candles) started to grow and Michael started to line up his initial customers, even while Cargill's legal staff continued its delaying tactic.

One of the very first formulas that was used during this interim agreement with Cargill was called Phytowax C-1, with "C" standing for "Containers." Today, Cargill' still makes more of it than of any other kind. Michael's other kind of wax was called PV-1 meaning "Pillar-Votive." Address: President / Founder, Candleworks, Inc., 1029 Third St. S.E., Cedar Rapids, Iowa 52401. Phone: 319-363-1774.

550. Richards, Michael. 2004. Life and work with candles. Part VII. The final agreement with Cargill (Interview). *SoyaScan Notes.* May 24. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** On 26 Jan. 2001, Candleworks and Cargill signed the formal legal agreement presently in effect. From that day on, Michael would start getting royalties on products made by Cargill under this agreement. As in the initial letter of understanding, the two companies would share the profits on soy wax equally (50/50). However in the final agreement, Cargill changed the terms to apply only to the narrowly defined product that they were presently producing, even Michael's patent filings were for a much broader range of potential product formulations.

Michael expressed strong reservations about this narrowing of the agreement and pressed for keeping the agreement so that it applied to any paraffin wax replacement product that would be produced under his patent filing. Cargill refused to budge and was very adamant saying to Michael that this was the best he was going to get; he could take it or leave it." Michael felt that Cargill was rather heavy handed on this key point, but he was under severe financial stress after nearly a year of delay.

During these negotiations on the final agreement, Doug Collison of Cargill stated that Cargill had hundreds of researchers in hundreds of facilities worldwide. At some future date they might discover new ways to make candle wax. He said that Candleworks could expect to "own a piece of Cargill."

The final agreement also specified: That Cargill staff are expected to provide "technical assistance to Candleworks' wax customers without compensation to Cargill." However, in many instances when Cargill staff have gone to customers secured by Michael, they have used this as an opportunity to induce large volume customers to change over to a Cargill wax that would be covered under Michael's patent filing, but that are not covered under the limited 'product' description. This type of activity started within weeks or months of signing the final agreement. Fortunately for Candleworks, the customers rejected Cargill's offers of these "new products" and came back to the original "Phytowax C-1."

The amount of change that Cargill must make in Michael's formula before they can call it a new formula is defined in their contract in terms of percentage points.

His royalty rate is based on a formula: Cargill's cost of making soy wax is defined as the price of soybeans per pound on the Chicago Board of Trade plus 12 cents per pound. The sale price minus Cargill's specified cost is considered net profit. Michael now gets 50% of that net profit. It specifies a compensation structure for wax used for paper coatings as well as for candles. It also states that both Candleworks and Cargill can develop new applications. The fact is that Cargill now sells more C-1 than anything else; Michael knows this from the reports he receives from Cargill–although his contract does not contain an audit clause, so he must trust Cargill's figures on sales of C-1 and he has no way of knowing exactly their total sales.

Michael personally added a key clause to the contract which says that Cargill will continue to produce C-1 soy wax for 10 years. After 10 years Michael's royalty will decrease to 20% of net profit. A key term of the contract is that Cargill will defend Candleworks' patent; Candleworks is paid one-third of any settlements related to patent infringements, or any licensing fees.

Del Craig told Michael that Cargill had estimated that Candleworks would earn about $10 million a year from this agreement. Craig also said that this was a very good agreement between Cargill and a small manufacturer like Candleworks, and that Cargill had had long discussions about whether to have any agreement at all, since they could just do this on their own. He said that since Michael who had pioneered / started the soy wax candle industry, Cargill felt obliged to have some agreement with Candleworks. Cargill needed Michael's "first inventor" status.

In numerous public meetings and at the annual Farm Progress Show, the staff of the Iowa Soybean Promotion Board has referred to Michael as "the father of the soy wax industry." Yet all things considered, Michael feels he is still in a good position and is being treated fairly by Cargill. Herb Wilson, Michael's mentor, had sold his company to Cargill 20 years earlier. On the day the agreement with Cargill was signed, he told Michael: "From this day on, Cargill's objective will be to minimize what they pay you. No matter what you do, you'll always be at a disadvantage, because they will always have a large team of lawyers and it would be much too expensive to try to fight them."

Concerning Cargill: The original formulas and processes

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for soy-based wax that Michael developed (C-1 and PV-1) are still Cargill's best-sellers. Even though Cargill has had one other formula for the last year (C-3, which they have heavily promoted), almost all the candle customers keep coming back to the original. Cargill now ships some of Michael's original formula C-1 to some customers as Cargill NatureWax C-1, even though it is exactly the same as Michael's original product. Michael gets royalties only on C-1–whether is sold under Cargill's NatureWax trademark or Michael's former Phytowax or current Soyawax trademark. Moreover, whether Cargill sells C-1 or Michael sells it (by initiating the sale), he gets the same amount of royalty payment. Michael tries to initiate sales of C-1 every day. From the extensive feedback Michael gets from the industry, he knows that Cargill aggressively promotes their C-3 (with no royalty to Michael) to candlemakers who are presently using C-1. Cargill has no obligation to inform customers that C-1 even exists.

Resolution of three patents: Recall that in March 2000, Heidi Nebel Sease of Zarley / Sease (written with a slash) had filed a patent application for Michael Richards' vegetable wax innovations; this application was never fully processed or granted because of the third patent application described below. In Dec. 2000 Cargill had filed a patent for hydrogenated soybean oils prepared specifically for use as a candle wax base. When Cargill signed the final agreement with Michael and purchased the rights to make the candles described in his patent, they then filed an additional application for a patent into which Michael's patent application was integrated. That integrated patent has since been granted (issued Nov. 2003); Michael is named as a co-inventor with three Cargill employees, and he is happy with all aspects of the patent. He will send third one. Address: President / Founder, Candleworks, Inc., 1029 Third St. S.E., Cedar Rapids, Iowa 52401. Phone: 319-363-1774.

551. Richards, Michael. 2004. Life and work with candles, Part VIII. After the agreement with Cargill was signed (Interview). *SoyaScan Notes*. May 24. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** In Oct. 2003 Michael purchased back most of the shares from Candleworks' main investor, Herb Wilson, although (as of May 2004) a small amount still remains to be paid (small remainder note). Herb has an excellent set of well-organized Candleworks company records. This expense took all of Michael's cash reserves, required him to borrow money to pay off Herb, and put him under a huge financial burden. Due to poor health, Herb agreed to settle for a lesser amount in exchange for quick payment.

About 6 months ago, Candleworks ceased production of finished candles, since Michael had no operating capital. During the company's move to a different building (18 months ago), Michael had to lay off some of his homeless and disabled workers. Today he employs about 3-4 such people. Throughout Candleworks' entire history, Michael has always "pushed people out the door to get other jobs." Because of the unique Iowa City economy, most of the people trained by Candleworks are still employed.

Presently, candle production is starting again slowly. Michael plans to have 10-12 employees, not 30-40. In the future, Michael plans to focus more of his efforts on income from royalties (getting customers for his soy wax made by Cargill) rather than income from making candles. But there is an interesting relationship between the two. The best way to improve the quality of his soy waxes is the use that wax for making candles. Real production is a much more effective way of doing research than just doing it in the lab.

Concerning deceptive labeling of candles: Some of the large manufacturers are starting to use the term "soy candles" on the label when the candle contains relatively little soy wax and mostly paraffin. This is not illegal since there are no labeling regulations in the candle industry. In fact, the ingredients used to make most candles are not even listed on the package. However buyers (for chains) and consumers nowadays are so much more discerning, so each is likely to ask his source about ingredients.

BeansWax Candle Co. was Michael's first customer for soy wax, even before the Cargill agreement (and one of the first to use the terms "soy candle" and "soy wax"). When Michael went with Cargill, BeansWax refused to switch to Cargill's flakes from the 35-lb blocks of soy wax that they had been used to buying from Candleworks. They believed (as does Michael) that Michael's original wax "looked more natural" and that the Cargill waxes "looked more like paraffin." For them it was a visual thing. Their main customers were natural foods chains such as Whole Foods, Wild Oats, etc. Michael bought hydrogenated oil from Cargill, formulated it himself to make finished PhytoWax, shaped it manually into 35 lb blocks, loaded it into his pickup truck, and drove to the Iowa-Minnesota border, where he met the founders of BeansWax and transferred the blocks into their trailer; they would drive the blocks north into Minnesota. When Cargill started making the wax, they no longer used the other fatty acids from other sources; Cargill wanted the wax to be 100% Cargill ingredients. So Michael lost BeansWax as a customer; they felt that Michael's waxes were better before he switched to those made by Cargill. Michael thinks BeansWax then hired some people to figure out what was in Michael's pre-Cargill wax, and they did a pretty good job of duplicating his soy wax.

A private research group named Unity Marketing published a study of the candle industry; the full report costs about $2,000. They have predicted that candle manufacturers who do not switch to soy wax are not going to survive. Companies will have to innovate to survive, and the most important innovation is the conversion to soy waxes. They say it is inconsistent for candle companies to market a product that they say is therapeutic, in some cases make

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it a base for aromatherapy, and make it from a petroleum product.

Michael presently sees his most important role in life as that of grandfather. He has two grandchildren. Michael, his eldest son, is the father of Christian (age 3), who lives in the Philippines and whom he has not yet seen. His second son, Benjamin, has no children. The third son, Solomon, is the father of Natasha (age 2), who is at Michael's home today. The fourth son, Mel, has no children.

Michael married a Filipino lady in the Philippines. They were together for about a year, but the marriage didn't work out. Michael is now back in Iowa, working at Candleworks. But he returns to the Philippines about once a year to spend time in the village with his son, and he is working to have his son come to the USA for his education. Address: Founder and owner, Candleworks, Inc., 1029 Third St. S.E., Cedar Rapids, Iowa 52401. Phone: 319-363-1774.

552. Richards, Michael. 2004. Life and work with candles (Interview). *SoyaScan Notes.* May 24. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** (1) The term "Phytowax" was first used for the wax shipped by Cargill. That is the label that Cargill still ships out. (2) BeansWax was Michael's very first customer for soy wax. Address: Founder and owner, Candleworks, Inc., 1029 Third St. S.E., Cedar Rapids, Iowa 52401. Phone: 319-363-1774.

553. Messina, Mark; Erdman, J., Jr.; Setchell, K.D.R. eds. 2004. Fifth International Symposium on the Role of Soy in Preventing and Treating Chronic Disease. *J. of Nutrition* 134(5S):1205S-1293S. Supplement. May. Held 21-24 Sept. 2003 in Orlando, Florida.
• ***Summary:*** Findings of special interest include: In older Chinese women, higher intakes of soy protein and isoflavones were associated with greater bone density.

Supplements of isoflavones, calcium, and vitamin D resulted in an increase in bone density in Chinese women.

When breast-feeding women consume soy, soy isoflavones appear in their breast milk and are absorbed by their infants. The significance of this is not known, although researchers speculate that early exposure to soy may protect against chronic disease in adulthood.

An analysis of a number of studies on soy and hot flashes found that, overall, use of soy products reduced the frequency of hot flashes.

Isoflavone supplements reduced the severity of headaches and other symptoms of premenstrual syndrome (PMS).

Soy protein may be useful in reducing risk of prostate cancer because it affects male hormone levels.

Preliminary results suggest that soy isoflavones can improve brain functions, such as memory, in older people. Symposium chairpersons: Mark Messina and Kenneth D.R. Setchell.

Advisory Board: Herman Adlercreutz, Stephen Barnes, Koen Descheemaeker, Brent D. Flickinger, Patricia Godfrey, Omer Kucuk, Mindy S. Kurzer, Gregory L. Paul, Susan M. Potter, Cesare R. Sitori, and Anna H. Wu.

"Sponsors: The Solae Company; United Soybean Board; Archer Daniels Midland Company; Cargill Health and Food Technologies; Cargill Soy Protein Solutions; Dr. Chung's Food Co., Ltd.; Illinois Soybean Association / Illinois Soybean Checkoff Board; Indiana Soybean Board; Nichimo International Inc.; Solbar Plant Extracts Ltd.; Soyatech, Inc.; Wyeth Consumer Healthcare; AOCS; DrSoy Nutrition; and Soyfoods Association of North America." Address: 1. Nutrition Matters, Inc., Port Townsend, Washington 98368.

554. Richards, Michael. 2004. Early history of Cedar River Candle Company (Interview). *SoyaScan Notes.* June 20. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Cedar River Candle Co. was founded by three Cedar County (Iowa) farmers, all of whom initially worked for Candleworks, Michael's candle-making business: Owen Nebergall (Michael's brother-in-law), Scott (last name unknown), and Chuck Nous. When Michael's landlord sold his building, forcing him to relocate to a new factory, Michael said to these three employees that he had two large purchase orders. Since he knew that relocating would take a long time, he offered to sell them soy wax and let them make the candles to fill the purchase orders.

About 3 years ago, Jon Nicholiasen, made a major investment in Cedar River Candle Co. Jon, who was recently quoted in *USA Today,* is the investor who brought the money to the tiny fledgling company (Cedar River Candle Co.) that Michael's brother-in-law (Owen Nebergall) had started. Jon had a company that made coffee creamers (alternatives to cream) using soy, so he was aware of soy from that perspective. Before investing in soy candles, he sold his coffee creamer company to Dean Foods. It is said that that left him working capital of about $34 million. He devoted one year to investigating where the next major investment opportunity was; he came to soy wax.

So he bought a major interest in Cedar River Candle Co., which was a privately held Iowa corporation. Owen Nebergall, one of the people who was instrumental in bringing Jon in, passed away during the transition process. Jon is now the president, but Michael is not sure if he is the sole owner. After about 6 months, Jon moved the business out of a small machine shed near the barn on Owen's farm (in the tiny town of Tipton, Cedar County, Iowa), 130 miles north and into a factory building in an industrial park in the town of New Hampton, Iowa, where Jon Nicholiasen lived. A lot of new candle-making equipment was purchased at this time. The company is now named Soy Basics, and it has three brands: Beanpod, Cedar River, and Scentsations. Michael has visited that factory about 10 times.

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Nicholiasen's goal from day one, about 3 years ago, has been to build it into a big company and then sell it. He seems to be good at doing that. In three years they went from non-existent to the biggest player in the soy wax industry. They now project sales of $25 million for the year 2004 to the Iowa Soybean Promotion Board.

Today the company is named Soy Basics, located at 375 Industrial Ave., New Hampton, Iowa 50659. Phone: 641-394-6313. Website: www.soybasics.com. They sell candles under 3 different brand names: Beanpod, Cedar River, and Soy Scentsations.

Today Soy Basics is the largest single buyer of C-1 (the soy wax developed by Michael and made by Cargill); they buy either 1 or 2 full tankers of it every month.

Scott has recently launched another soy wax candle company named Soy UR Burning (located in Cedar Rapids); they buy half truckloads of Michael's soy wax from Cargill. Address: Founder and owner, Candleworks, Inc., 1029 Third St. S.E., Cedar Rapids, Iowa 52401. Phone: 319-363-1774.

555. Kilman, Scott. 2004. Cargill earnings increase 38% amid volatile commodity prices. *Wall Street Journal.* Aug. 11. p. A2.
• ***Summary:*** Cargill Inc. is the largest closely held U.S. company. Address: Staff reporters.

556. Liu, KeShun. 2004. Edible soybean products in the current market. In: KeShun Liu, ed. 2004. Soybeans as Functional Foods and Ingredients. Champaign, Illinois: AOCS Press. xii + 331 p. See p. 23-51. Chapt. 2. [76 ref]
• ***Summary:*** Contents: Introduction. Soybean oil. Traditional soyfoods: Nonfermented soyfoods (soymilk, tofu, variety and current market, nutritional value and health benefits, general processing, soymilk film {yuba}, okara, soybean sprouts, vegetable soybeans, roasted {soynuts} or cooked whole soybeans), fermented soyfoods (fermented soy paste {jiang and miso}, soy sauce, Japanese natto, tempeh, sufu or Chinese cheese, fermented black soybeans {douchi or Hamanatto}). Soy protein products: Soy flour, soy protein concentrate, soy protein isolate, textured soy proteins. Modern soyfoods. Soy-enriched products. Functional soy ingredients / dietary supplements: Soy lecithin, oligosaccharides, isoflavones, tocopherols, phytosterols, trypsin inhibitors.

Figures: (1) Photo of traditional soyfoods. (2) Photo of soy flour and defatted meal after crushing. (3) Bar chart of U.S. soyfood sales since 1992. (4) General flow chart of processing soybeans into various edible products. (5) Flow chart of a traditional Chinese method for making soymilk and tofu. (6) Bar chart of U.S. tofu sales since 1980.

(7) Photo of natto, a fermented Japanese soyfood. (8) Flow chart of natto production outline. (9) Photo of soy protein products. (10) Photo of meat analog made by high-moisture extrusion of soybean protein. (11) Photo of new generation of soyfoods in the market. (12) Photo of soy-enriched bakery products. Courtesy of Cargill, Inc. (13) Photo of bottle of concentrated soy isoflavone product. Courtesy of Archer Daniels Midland Co.

Tables: (1) Classification of various edible soy products in the current market. Address: Univ. of Missouri, Columbia, Missouri.

557. *Non-GMO Source* (*The*) (*Fairfield, Iowa*). 2004. It's non-GMO vs. GMO in new low-linolenic soybean oil market. 4(11):1-2. Nov.
• ***Summary:*** "Commodity soybeans are in trouble." In 2006 the FDA will require food manufacturers to list the trans fatty acid content of foods on food labels. Trans fats are made by hydrogenation and are increasingly seen as unhealthy. About 17 billion pounds of soy oil is consumed in the U.S. each year and more than 8 billion pounds of that is hydrogenated. There is now a rush to develop soybeans whose oil does not need to be hydrogenated, which means it is low in linolenic acid. Regular soybean oil contains as much as 7% linolenic acid. The big change is expected to be a huge increase in identity preserved (IP) soybeans.

At Iowa State University, Walter Fehr and Earl Hammond have collaborated, using traditional breeding techniques, to develop soybeans whose oil contains only 1% linolenic acid; oil derived from these soybeans does not need to hydrogenated. Frying tests at Iowa State found that 1% linolenic soybean oil had superior flavor stability compared with other soybean oils tested. It also contained less saturated fat. Farmers began planting these soybeans in 2004; an estimated 30,000 acres have been harvested. Fehr estimates that more than a million acres may be needed in 2005 to meet the predicted demand for the oil; the American Soybean Association estimates 2 million acres. All these soybeans must be identity preserved.

Farmers and organizations planting these new public varieties include Asoyia LLC, Innovative Growers, Zeeland Farm Services, and American Natural Soy (based in Cherokee, Iowa; organic and expeller pressed). A photo shows two clear glass pitchers, one (cloudy) filled with partially hydrogenated soybean oil and the other (clear) with 1% linolenic soybean oil.

Meanwhile, industry giants such as Monsanto, Cargill, DuPont/Pioneer Hi-Bred, and Bunge have created alliances and developed genetically engineered (GE) soybeans with 3% linolenic acid.

558. *Non-GMO Source* (*The*) (*Fairfield, Iowa*). 2004. Industry giants team up to grab share of low-linolenic [soybean] oil market. 4(11):2. Nov.
• ***Summary:*** Monsanto has introduced a low linolenic soybean variety named Vistive that contains less than 3% linolenic acid and carries the Roundup Ready genetically engineered (GE) trait. The Roundup Ready trait was

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introduced through genetic engineering; the low linolenic gene was introduced through conventional breeding.

Cargill will process both Vistive soybeans and (at its facility in Cedar Rapids, Iowa) non-GE soybeans grown by Asoyia farmers.

DuPont, the parent company of Pioneer Hi-Bred International, announced that it has also developed a GE soybean, named Pioneer 93 M20, whose oil contains less than 3% linolenic acid. DuPont will work with Bunge Ltd. to market Nutrim Low Lin Soybean Oil. All these soybeans will have to be sold using an identity preserved system.

However, some oil specialists believe that 3% linolenic acid oils are not as good as those with 1% and may have to be hydrogenated to "get the job done."

559. IQPC, Food & Beverage Div. 2004. SoyFoods 2002: Take your product development and marketing strategies to the next level. Register by January 5, 2005 and save $300 (Brochure). Iselin, New Jersey: International Quality & Productivity Center. 8 p. 28 cm.

• ***Summary:*** This glossy brochure (green and yellow on white) states: "Food & Beverage is proud to present its 8th annual soyfoods conference. Two-day conference: March 1-2, 2005. Pre-conference workshops: February 28, 2005. Rasisson Hotel Miami, Miami, Florida. This brochure gives details on the conference agenda, with the names of the speakers, presenters or workshop leaders, the title of the presentation, and the date and time. Pre-conference workshops (Monday): (A) New strategies and techniques for product innovation, led by Mattson & Co. (B) Think big: Redefining the competition to expand your market, led by Garnet Pigden, The Solae Co. (Solae has come up with a campaign pitting soy products directly against the dairy industry). (C) Understanding your consumer–Soyfoods focus group workshop, led by Primary Insights.

Day 1 includes: "Understanding the soyfood trends of today and tomorrow," by: Tina Nelson of SunRich (the U.S. soyfoods market hit nearly $4 billion in 2003, up 7.2% over 2002). "Kraft's health and wellness initiatives: Evolving with today's consumers," by Kevin Scott, Boca Foods, a div; of Kraft Foods, Inc. "Out of the box: Designing the soy products of tomorrow," by Robert C. Jones, President and CEO of Vitasoy USA. "Partnering with the soy protein ingredient supplier to develop functional products for the future," by Deborah Schultz of Cargill Health and Food Technology. "The soymilk revolution: Marketing for mainstream appeal," by Mary Adams of White Wave. "Understanding the vegetarian, 'flexitarian' and omnivore market for soyfoods," Terry Gieseke of Nutriant, a Kerry Company (Flexitarians are people who usually eat vegetarian but occasionally dine out on meat). "Creating a winning soy snack food," by Tim Walter of Peanotz, Inc. Dominic Dyer, of Soya Protein Assoc., UK.

Day 2 includes: "Making sense of soy health research," by Mark Messina of Nutrition Matters. "Soy and menopause: A clinicians view," by Dr. Ari Babaknia, MD of DrSoy. "Can soyfoods play a role in reducing obesity?" by Barbara Klein of Illinois Center for Soy Foods. "Lessons learned from the US FDA cancer claim petition," by Garnet Pigden of Solae (cites 58 studies as evidence that soy reduces the risk of cancer of the breast, prostate, and colon). "Improving product flavoring to meet consumer preferences," by Mary T. Nash of TIAX LLC. "Research meets commerce: Using new Non-GMO technology to create highly marketable new products," by Daniel Facciotti of Davis Lab, Anawah (Tilling = Targeting Induced Local Lesions in Genomes, a new technology to manipulate gene traits and generate novel ingredients). "Lowering trans fat content with new low linolenic soybeans," by Prof. Walter Fehr of Iowa State Univ.

The price is very expensive: Gold package–$3,186 for the conference plus 3 workshops (save $300) or $1,899 for the conference only. Address: 555 Route 1 South, Iselin, New Jersey 08830. Phone: 1-800-882-8684.

560. Manning, Richard. 2004. Against the grain: How agriculture hijacked civilization. New York, NY: North Point Press. A Div. of Farrar, Straus and Giroux. 232 p. Index. 24 cm. [45 ref]

• ***Summary:*** A revisionist history of agriculture, or how agriculture created the dull

minded, fat bellied citizens of today–while destroying the environment. Contents: Arousal. Why agriculture? Why agriculture spread. Hard times. Modern times. A vanguard of feudalism. To see the wizard. Why we are what we eat. Hog heaven. A counteragriculture. I eat, therefore I kill.

The chapter titled "To see the wizard" (p. 123-47) is very critical of Archer Daniels Midland Co. (ADM) and other large agribusiness companies (Cargill, Continental Grain / ContiGroup, Louis Dreyfus, Andre & Cie., and the Bunge & Born Group). It also discusses the farm crisis of the 1980s, the depopulation of rural America, the huge rise in U.S. ag exports, the rise in big farms ("get big or get out") and capital-intensive industrial agriculture, big farms as major recipients of federal welfare, Dwayne Andreas' leadership at ADM, how U.S. agriculture has become one big commodity factory, food vs. commodities, the farmer's falling share of the consumer's food dollar, monoculture. "Between 1985 and 1995, ADM had received more than $130 million in export subsidies through USDA." Demise of the family farm, rise of hog factory farms whose waste is not treated as sewage, the corruption of life, what are people for?, ethanol and subsidies, interview with Dwayne Andreas, there is no free market. Address: Montana.

561. *Business India.* 2005. Selling stakes? Feb. 14.

• ***Summary:*** A rumor has been going around for the past few months that Bunge, the $22 billion Brazilian multinational and global leader in oilseeds and edible oil, is considering

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buying a stake in the Rs. 3,534 crore Ruchi Soya Industries Limited (RSIL) for an undisclosed sum. Although RSIL has been doing a lot of business with Bunge for the past two decades, Dinesh Shahra, managing director of RSIL, denies the rumors. "Ruchi has already forayed into ready-to-eat vegetarian fare, apart from Nutrela Soya chunks, granules, proflo defatted soya atta, kornms etc." Yet most of Ruchi's turnover (income) comes from trading commodities, rather than from manufacturing or sales of branded products. Yet margins in the commodity business are extremely thin, and Ruchi will need a lot of money to succeed in the branded consumer products business.

A bar chart shows RSIL's projected sales growing dramatically, from Rs. 3,643 crore in 2004/05 to 4,674 in 2005/06 to 5,468 in 2006/07. Cargill has a JV (joint venture) with Pune-based Parakh Foods.

562. Chajuss, Daniel. 2005. Brief biography and history of his work with soy in the USA and Israel. Part III (Interview). *SoyaScan Notes.* Feb. 19. Followed by numerous e-mails. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Continued: In 1972 Hayes General Technology signed a contract to sell the engineering designs and know-how it had developed for a soy protein concentrate plant to Aarhus Oliefabrik A/S in Aarhus, Denmark. This was HGT's first major contract.

In 1973 Daniel Chajuss sold know-how and complete engineering designs to Aarhus Oliefabrik A/S, Aarhus, Denmark (renamed Central Soya Aarhus A/S in Nov. 1992), to manufacture powdered and textured soy protein concentrates for human consumption, pet foods and calves milk replacers; they were sold under various Danpro brands.

On 19 June 1973 Daniel married Talma E. Hirsch in Rehovot, Israel. They had four sons: Ron, born on 18 Dec. 1973 in Tel Aviv; he is now (2005) a computer scientist and electrical engineer. Amir and Shi (twins) born on 17 Dec. 1976 in Rehovot; Amir is a graduate student in physics and philosophy. Shai is a graduate student in business administration and political science. Ori, born on 2 Feb. 1983 in Rehovot, is finishing his military service duties and going to study at a university.

All the soy protein concentrate facilities worldwide, which were established since 1973 and which are still in operation today (including ADM, USA, SOGIP-Bunge, France, etc., with the exception of Central Soya's USA plants) employ Chajuss' technology and/or engineering designs, and are mainly based on the know-how and technology developed by Chajuss. About 90% of the total world production of soy protein concentrates today is made by aqueous alcohol extraction. Most of the protein concentrates are used in the form of powder or grits, some are further texturized, and some are further treated to provide various "functionalities."

In 1974 the Aarhus concentrate plant began regular full-scale operation. It was later bought by Central Soya.

Also in 1974 Daniel, Prof. Birk and the other researchers at the Hebrew University at Rehovot did much collaborative research on soy phytochemicals, such as soy saponins, soy isoflavones, other soy phenolics, etc., which were obtained from alcohol-extracted soy molasses. They found that soy molasses had many interesting and useful applications– even for stabilizing sandy soil and eventually enabling it to be productive for agriculture. Later they developed a technology to remove the isoflavones (very bitter and beany) and saponins from the soy molasses. They found that the isoflavones in the soy germ are not bitter.

Daniel recalls: At [the NRRL in] Peoria, Illinois, they had tried to breed soybeans that had little or no bitter, beany flavor. Essentially they were trying to breed out the isoflavones; fortunately they were not successful. Yet the isoflavone content of both soybeans and soy molasses covers a wide range; for soy molasses it is about 0.5% to 2%.

During 1974 Daniel told researchers at Central Soya and Aarhus Oliefabrik about these compounds found in soy molasses. Then Unimills started a plant and called it 'soy volasses.' The *2004 Soya & Oilseed Bluebook* has a section titled 'Definitions and Glossary,' however it does not yet have an entry for 'soy molasses' (p. 367). But there is an entry for 'soy solubles,

During this time Hayes General Technology also did development work on many different modern soy protein products, functional soy protein concentrates, textured soy proteins, soy flours (full-fat, medium-fat, and defatted; enzyme active or toasted); also on the extraction of specialty oils and cold press systems; on specific extraction plants, as for jojoba oil, primrose oil, argan oil (from the nuts of the argan tree, *Argania spinosa*, of southwest Morocco), etc.; flash desolventizing systems for non-polar and polar solvents; unique, bland and novel "no waste" (fiber included) soymilk products; precooked "instant" cereal plants; complete low-cost food formulae plants; micro-milling systems; production of vegetarian meat alternatives, incl. vegetarian sausages, schnitzels, patties, and "fried fish"; non-soy based protein products; lupine seed processing incl. lupine protein, lupine oil, and lupine alkalozidone alkaloids production systems. Much work was also devoted to the development of low-cost cottage industries.

In 1980 Hayes started to sell soy lecithin commercially; it was separated from the soy oil obtained during the production of "white" flakes by hexane extraction.

Also in 1980 Daniel's father, Elijah M. Chajuss, began to reduce his full active daily work with Hayes Ashdod Ltd. At this time, the two men began thinking about selling that part of their company. Daniel thought it would be better if he focused on research, development, and engineering work. None of his sons was interested in carrying on the family business.

Until 1981, all the shares of Hayes Ashdod Ltd. were

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held by the Chajuss family.

1984 Sept. 27-28–Daniel attended the First European Soyfoods Workshop held in Amsterdam, Netherlands, as a delegate of E.M. Chajuss Ltd., which was interested in establishing a simple soy cottage industry; at about that time they had developed some simple appropriate processing technologies for soyfoods and soymilk and were thinking about making those in a company other than Hayes Ashdod Ltd.

1984–The Chajuss family began to sell some of the shares in Hayes Ashdod Ltd. (fully owned by the Chajuss family) to Koor Foods Ltd. (headquartered in Tel Aviv), which was a holding company that owned shares and ownership in various food firms and was a part of Koor Industries Ltd., which had been established by labor unions. Hayes Ashdod Ltd. sold crude soybean oil to firms owned by Koor Foods Ltd. Koor has approached the Chajuss family, asking if all or part of Hayes Ashdod might be for sale.

In Dec. 1984 the majority of the shares in Hayes Ashdod Ltd. were sold by the Chajuss family to Koor Foods Ltd. Address: Managing Director, Hayes General Technology Company Ltd., Misgav Dov 19, Mobile Post Emek Sorek, 76867 Israel. Phone: (972) 8 592925.

563. Chajuss, Daniel. 2005. Brief biography and history of his work with soy in the USA and Israel. Part IV (Interview). *SoyaScan Notes.* Feb. 19. Followed by numerous e-mails. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** 1985–Hayes General Technology (HGT) Co. Ltd. is incorporated as a separate and independent company, still owned by the Chajuss family, especially to develop engineering, process know how and new technologies, mainly in the field of soy proteins.

1986–The Chajuss family sold the remainder of the shares in Hayes Ashdod Ltd. to Koor Foods Ltd. One of Koor's directors was Mrs. Shefi of Kibbutz Hatzor. She was the link connecting her kibbutz with Koor Foods and Hayes Ashdod Ltd.

1987 Feb. 18–Elijah Mathew Chajuss, Daniel's father and co-founder of Hayes Ashdod Ltd., passed away in Rehovot at age 84.

In March 1987 all the shares of Hayes Ashdod Ltd. were purchased from Koor Foods by Kibutz Hatzor. A few months later, in about Sept. 1987, the company name was changed from "Hayes Ashdod Ltd." to "Solbar Hatzor Ltd."

In 1988 Soya Mainz (of Mainz, Germany) bought from Hayes General Technology engineering designs to set up a soy protein concentrate plant in Germany. The plant was not built and instead in early 1991, Soya Mainz bought 25% of Solbar's shares.

In 1989 (a year later) Soya Mainz bought an additional 24% of the shares in Solbar, so that they now owned a total of 49% equity in Solbar Hatzor; Kibbutz Hatzor owned the remaining 51% equity of this joint venture between Israeli and German companies.

Note: The proprietary rights of Hayes Ashdod Ltd. know-how and technology remained, however, Chajuss' proprietary possession. Koor Foods ceased operations in about 1987.

Today HGT does mainly research engineering and designs systems, but it also manufactures special, nonstandardized equipment, and installs complete systems. HGT engineers, including Daniel when warranted, also work as field engineers and consultants on site when the systems they have designed are installed in other countries. They have done that since 1973-74 when their first system was installed outside in Aarhus, Denmark. Systems for manufacturing soy protein concentrates and soy molasses, designed and developed by HGT, have been installed in Israel, Denmark, The Netherlands, France, USA, China, and Brazil. All these plants include texturizing facilities, which although recommended by HGT are designed and made by firms such as Wenger, Extru-Tech, and Clextral. Today HGT is known and often referred to as 'Hayes Ltd.'. Hayes General Technology Company Ltd. is thus thinking about making 'Hayes Ltd.' its official company name. Also today (2005) this company is owned and managed by Daniel Chajuss.

Note: Hayes Ashdod Ltd., although it was sometimes referred to as "Hayes Ltd." was never officially named "Hayes Ltd."

In early 1991 the German soy processor, Soya Mainz GmbH and Co. bought a 25% equity interest in Solbar Hatzor Ltd. (formerly Hayes Ashdod Ltd.), soya protein manufacturers of Ashdod, Israel. The company has also contracted with Hayes General Technology Co. Ltd. of Israel to set up a soya protein concentrate production facility in Germany.

By 1999 Solbar had started a sister company or division named Solbar Plant Extracts to market its nutraceutical products (such as isoflavones) extracted from soy molasses.

Today (Feb. 2005) the makers of traditional type concentrate generally use the systems developed by Daniel Chajuss. These systems are purchased from Hayes General Technology and are presently used by all the leading makers of traditional and functional soy protein concentrates. Today over 95% of the soy protein concentrates manufactured worldwide are made using systems developed by Hayes. Included among Hayes General Technology clients for traditional or functional soy protein concentrates (SPC) have been: (1) Hayes Ashdod Ltd., Ashdod, Israel (later renamed Solbar Hatzor Ltd.), 1962 to 2005 (complete engineering designs and services). (2) Aarhus Oliefabrik A/S, Aarhus, Denmark (alter renamed Central and presently Solae), 1972 to 1974 and later periodically upon request. (3) Bunge Sogip, Bordeaux, France, 1988 to 1996 (later renamed Central Soya Aarhus and presently Solae). (4) Soya Mainz, Mainz, Germany, 1988 (now part of ADM group).

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(5) ADM, Decatur, Illinois, 1989-1999. Intended to be used for SPC in the Decatur plant. The knowledge was later also utilized by ADM in plants in the Netherlands (Europort) and China. (6) Finnsoypro Oy, Uusikaupunki, Finland, 1995. Textured soy protein concentrate plant. (7) Cargill, Minneapolis, Minnesota, 2000 to 2003. SPC technology licensing and transfer of know-how and engineering designs. Also consultations. (8) Shemen Industry–Soyprotec Advanced Protein Technology, Haifa, Israel, 1999 to present. SPC technological transfer and licensing agreement and consultation services. (9) China–In China HGT is involved directly and or through Wuhan Crown Friendship and provide Hayes know-how, licensing, engineering designs and services to manufacture SPC to firms such as Shandong Sanwei Oil Enterprise (Group) Co. Ltd., Linyin City, to Crown Proteins, to Gushen in Shandong province and to YiQing Group in Tianjin. (10) Brazil–The transfer of know-how and engineering designs is and was made to such firms as IMCOPA (2006) and others through Crown Iron Works, Cargill, Shemen Industries (Soyprotec), Shandong San Wei, etc.

Daniel has retired largely from the commercial side of his business. But he still (2005) has a small company that makes isoflavone products; he likes very much to do research is this company's laboratories. "Business can be god or bad, profitable or not profitable, but when you do research, you may get good or bad results, but it's always interesting. That's what I like to do." From time to time Daniel goes to the Hebrew University of Jerusalem at Rehovot to do research; he still works occasionally with Dr. Yehudith Birk.

Daniel has become interested in a remarkable plant and its seed, pearl lupin (*Lupinus mutabilis*), a species of lupin that is grown in the Andes of South America for its edible bean. He has done research on the bitter compounds in this underutilized bean, and believes this seed has a very bright future, including as a human food (see separate record).

Daniel's wife is well (Dec. 2007) and works as information librarian in Tel Aviv University Faculty of Medicine.

The year 2007 marks the 45th anniversary of Daniel's pioneering work with soy products in Israel. Today Hayes makes about 450 to 500 metric tons per year. Address: Managing Director, Hayes General Technology Company Ltd., Misgav Dov 19, Mobile Post Emek Sorek, 76867 Israel. Phone: (972) 8 592925.

564. Lamp, Greg. 2005. Keep a watchful eye on Brazil: My view. *Corn and Soybean Digest.* Feb. p. 6.
• ***Summary:*** Lamp just returned from a two-week tour of Brazil's soybean and cattle growing centers–sponsored by *The Corn and Soybean Digest* and its sister publication, *Beef*. Brazil has plenty of endeveloped land. In the state of Mato Grosso, for example, 70% of the land is undevelopd, yet this state is already Brazil's largest producer of soybeans, cotton, and cattle–and it has the lowest rate of unemployment–6.9%.

Since 2003, soybean king Blairo Maggi (who produces about 250,000 acres of soybeans) was elected governor of Mato Grosso, the long inadequate infrasructure has started to improve rapidly. During the past two years, more than 900 miles of new roads have been constructed.

Rondonopolis, located southeast of Cuiaba in Mato Grosso, "has the largest crushing capacity in South America. Most crushers are U.S. companies like ADM, Cargill and Bunge."

For U.S. farmers, the biggest threat from Brazil may come from its ability to feed and export poultry and pork." As the country produces more corn, to feed with its abundant soybeans, the threat will increase.

Photos show: (1) Greg Lamp. (2) American farmers on a bus tour checking plants for soybean rust. (3) Ships loading at Paranagua port. Address: Editor.

565. Messina, Mark J. 2005. Update on work with soy (Interview). *SoyaScan Notes.* March 29. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Mark has made presentations on soy and health in 33 countries and has been to Brussels 10-12 times, and once to China.

Second generation statins are truly remarkable in their ability to lower human cholesterol by 30-35%–much more than any short-term dietary change.

The French government is now advising no soy consumption before age 3, and the British government has two editorials on soy consumption in childhood.

Creation of a Soy Nutrition Institute has been under active discussion for the past two years. Three companies are potentially interested: Solae (the most interested), followed by ADM and Cargill. They would publish accurate, well-documented information about soy and nutrition. They have set two goals: Within 5 years to become like the Egg Association, and within 10 years to become like the Dairy Association. Mark is considering applying for the position of director if he can get a long-term contract and if the salary is adequate. When the media and others had questions about soy, nutrition and health, this is the first place they would think to contact.

The 6th International Symposium on the Role of Soy in Preventing and Treating Chronic Disease will be held in Chicago, Illinois, this summer.

Dr. James Anderson is doing a new meta-analysis on soy and heart health. There are many new studies since his first meta-analysis was published in Aug. 1995.

The earlier a young woman gets pregnant, the lower her risk of breast cancer later in life. One of the most exciting hypotheses in this field is that isoflavone intake (including soy isoflavones) during youth / adolescence significantly reduces breast cancer risk later in life.

A member of the anti-soy group is "Dr. Mercola." He

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is somehow associated with Sally Fallon and her Weston Price Foundation. Dr. Joseph Mercola is an osteopathic physician and director of the Optimal Wellness Center, his medical clinic outside Chicago. Trained in both alternative and traditional medicine, he has served as the chairman of the family medicine department at St. Alexius Medical Center for five years. Address: PhD, 439 Calhoun St., Port Townsend, Washington 98368. Phone: 360-379-9544.

566. Givens, Joe. 2005. Re: Brief autobiography and detailed history of work with Dawson Mills. Letter to William Shurtleff at Soyfoods Center, May 8–in reply to inquiry. Followed by interview on May 21. 7 p. Typed, without signature.

• ***Summary:*** Joe (who dictated this letter to his daughter) was born on 11 Aug. 1921 in Chatfield, Minnesota, the son of William Paul Givens and Fanny Bottom. He attended Carleton College in Northfield, Minnesota, from 1939 to 1943, with a chemistry major and strong minors in physics and math. During college, shortly after World War II began he volunteered to be an aviation cadet and was accepted. However his local draft board gave him a 2A deferment for being a science major, and would not release him. After graduating in June 1943, he attended graduate school for 1 year (1943-44) at the Institute of Paper Chemistry in Appleton, Wisconsin. In early 1944 he got a call from Washington, DC, and was ordered to report to Oak Ridge, Tennessee. Arriving on March 1, he worked on the Manhattan Project in the final steps of isolating Uranium 235. He was released in Jan. or Feb. 1946–after uranium had been successfully isolated and World War II had ended.

1946–Joe began work in the soybean industry, where he worked until his retirement in 1981. He began with the Cargill Co. as a management trainee at headquarters near Milwaukee during most of 1946-47. The following dates are inexact and based on Joe's memory, not on documents: "At that time the extraction industry was plagued by hexane explosions in solvent extraction plants. Cargill had a number of hexane explosions, one in their Fridley, Minnesota flax plant (late 1946-1954), where several men were badly burned; one in Savage, Minnesota (1947-1974), that killed about 5 men; two in Cedar Rapids, Iowa (1945-1956), where no one was killed but the plant was destroyed; and another one later in Washington, Iowa (winter 1947-1954)." After his training, Joe worked in that latter plant which was outside and terribly cold, without even a building over it. The hexane solvent extraction equipment was made by V.D. Anderson Co. Other soybean processing companies also had hexane explosions.

"The E.I. duPont de Nemours chemical firm had done research on using trichloroethylene (trichlor) as an oil solvent. It was non-flammable, non-explosive, and was a stronger oil solvent that hexane. The chemical engineering department at Iowa State College had done a fair amount of research on processing soybeans using this solvent.

"One of the first soybean oil extraction plants using trichloroethylene was built in cooperation with Iowa State's chemical engineering department. It was built [as a small commercial plant] in Plainfield, Iowa, by and for Howard Roach (an ASA president)." Built in 1947, this plant ran successfully until 1951.

Another early trichloroethylene plant was in Michigan, designed by the Detrex corporation. It was very small, about 10 tons of soybeans a day. It was not successful and didn't last very long.

Crown Iron Works Co. (CIW) was looking to diversify their manufacturing business. They had several foundries–gray iron, bronze, aluminum, etc.–in Minneapolis. Much of their business was with railroads, manufacturing parts for steam locomotives, which were obsolete following World War II. They also had an excellent machine shop. So CIW made arrangements with Iowa State College and DuPont to use their designs, patents, and experience to develop commercial oil extraction equipment. They began this work in early 1947.

1948 Jan.–Joe started work at CIW; his first job was working with draftsman Al Kaiser to develop solvent extraction machinery for soybeans. "The goal was to have machinery that would process 25 tons of soybeans daily and was safe." Crown bought an old foundry in Minneapolis for the project. In early 1948, Al and Joe supervised installation of machinery in this building. Soon they were able to make the machinery work to process soybeans. "The designs were never really completed. CIW was not willing to spend the time or money to refine these designs. We were merely to make the machinery work well enough to sell. In 1948 Crown hired 2 men to market this equipment–Frank Scofield and Lee Luick. They sold several plants.

The first plant was sold to Glencoe Milling Co. in Glencoe, Minnesota, managed by Mr. L.H. Patten. In 1949 Joe supervised the installation and startup of this plant in 1950; it operated until 1952. The 2nd plant went into Blooming Prairie, Minnesota [to the Farmers Cooperative Elevator Assoc. / Co. Soybean Processing Div.]. Joe started this plant in 1950 and it ran okay. This was a new cooperative which never had competent management or adequate capital. It did not last very long.

The 3rd trichlor installation was made in 1950 at the North Dakota Mill and Elevator in Grand Forks, North Dakota. In early 1950, Joe supervised the installation and got it running. This plant was owned by the state of North Dakota and has an interesting history. Once again, they did not have management which was attuned to operating a soybean plant.

In early 1950 Al Kaiser built and started up a plant for Fremont Cake and Meal in Fremont, Nebraska. They had previously processed soybeans using expellers.

In 1951 Joe installed the next plant for Townsends

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Inc. in Millsboro, Delaware. It was bought by the former Senator Townsend. The Townsends owned a large amount of farmland in Delaware. They wanted a source of soybean meal to feed the millions of chickens they raised. They had a large hatchery, a feed meal, and were good business people. The plant ran successfully until 1952 using trichlor. From that year until the present they have extracted soybeans with hexane and CIW machinery.

In Vermont, Illinois (a tiny town), a farmer tried to install a small CIW plant but it never became operational.

In late 1951 rumors began to circulate that cattle and other ruminants which had been fed soybean meal extracted with trichloroethylene had died horrible deaths from hemorrhaging.

"In Oct. 1951 I was assigned to start up a new trichlor plant in Dawson, Minnesota. When I went there the machinery was all pretty well installed. My job was to supervise the remaining construction and start it up. It began operating in Dec. 1951 [Note: It began operation on Nov. 28; open house on Dec. 8]. The manager of this plant was Louis Sandbakken, who ran the local fertilizer and fuel cooperative. Louis was an ex-farmer without technical education. He soon realized the job was too much for him.

"The plant was operating (the equipment ran, but not that well) but really had no management for the first month. At this time other trichlor plants were having considerable problems with cattle dying from having been fed trichlor processed soybean meal. Most of them shut down by Jan. 1952. I was of the opinion that I could correct the toxicity problem by changing the flake desolventizing process. At this time CIW was not selling any more plants because of the problems with poisoned cattle. I was facing not having a job.

"The situation was so serious and urgent that the board of directors at the Dawson plant called me on Christmas Eve and wanted to meet with me on the day after Christmas in 1951.

"The board of directors and the manager of the Dawson Farmers Elevator offered me a job to be the general manager of this plant. At that time it was called Tri-County Soy Bean Co-operative Association; the plant had more debts than assets. I did not know the exact figure when I said I would go out there, but I was offered a good incentive arrangement if the corporation survived and made money."

On 20 Jan. 1952 Joe took over as manager. Within a few days of this date, Dawson's sister plants at Grand Forks (North Dakota) and Glencoe and Blooming Prairie (Minnesota) ceased their operations because of lawsuits resulting from the sale of toxic meal.

Joe changed the way the meal was toasted–from using a pressure cooker to blowing live steam through the meal to "scrub" the solvent from the meal. This removed any residual trichlor. An experiment was carried out to feed one group of calves on meal made before the toasting changes, and other group after the changes were made. "Fortunately the calves fed on the new meal thrived and were sold at excellent market prices whereas the ones fed on the old meal lasted about 6 weeks before dying." Dawson soybean meal never had any toxicity claims against it. However, as a precaution, all Dawson meal carried a warning not to feed it to ruminants. The other trichlor plants did not use Givens' method of scrubbing out the solvent with live steam because, by then, the damage had been done. Address: 6566 France Ave. S. #906, Edina, Minnesota 55435. Phone: 952-926-7828.

567. Givens, Joe. 2005. More history of Dawson Mills, and the merger with Land O'Lakes (Interview). *SoyaScan Notes.* May 21. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Concerning the purchase of soy protein isolate technology: 1997 May–Dawson bought soy protein isolate technology from General Mills. Dawson was looking to expand and it looked like isolating protein was a good way to go. They paid $1 million (not $10 million), mostly for patents owned by General Mills, plus a few centrifuges. The patents turned out to be worthless; they contained nothing new. General Mills sold because they were not really in the soybean processing business. 1997 Nov.–Dawson Mills broke ground for the isolate plant on the outskirts of Dawson. It was scheduled for completion in Nov. 1978. At that time the isolate plant looked like it had a promising future.

1979 March–Official ribbon cutting ceremony and opening of the isolate plant–5 months behind schedule. The plant's future still looked promising at that time.

1980 June–Dawson Mills merges with Land O'Lakes. Joe was deeply involved in this merger. There were at least four reasons for the merger: Money, personnel, Joe's retirement, and Land O'Lake's interest in the soy specialties business. Of these, money was the most important. (1) Making and marketing the isolate turned out to be much more expensive than expected. It was a new type of product, with many potential applications. The isolate plant turned out to be a huge drain on Dawson Mills' financial resources. "When meat prices dropped, it sure changed the picture. It was a tough sell." (2) Dawson, Minnesota, was a small, rural town in a cold part of the U.S., with relatively little intellectual and cultural stimulation. It was very difficult to find skilled workers and people with PhD degrees who were willing to move to the boondocks. So Dawson Mills had hired quite a few kids right out of high school to work at the isolate plant. "It was hard to find good people." Land O'Lakes had an excellent research staff and many such skilled workers. (3) Before the merger, Joe had announced his intention to retire; he had been with the company for 29 years, during which time it had become much larger and more complex. The management felt the need for new expertise. (4) Land O'Lakes was interested in getting into the soy specialties business–the food products, such as the

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isolates; they weren't particularly interested in the soybean crushing part of Dawson Mills. Joe agreed he would work for Land O'Lakes as vice president of their Soybean Division, which included some other plants, including Boone Valley in Eagle Grove, Iowa.

Joe recalls: "The merger with Land O'Lakes didn't really work out. They didn't have people to spare that they could send out to Dawson. The whole merger wasn't as successful as we would have liked." Land O'Lakes tried to run the isolate plant for 11 months–unsuccessfully.

During this time (in 1980) the isolate plant was unionized. The young workers believed all the promises the union organizers made, whereas older workers did not. A vote was held and the union won. At that point, in early 1981, Joe Givens retired; unionization was the catalyst. The union had tried to get into Dawson Mills' crushing plant 3-4 times before this, and they were always defeated in each election. The experienced workers realized that unionizing was not in their best interests. The union only lasted at Dawson Mills for a little more than a year; when the workers realized that they were paying substantial dues but that none of the union's promises had been fulfilled, they tossed (elected) it out.

1981 May–The isolate plant was closed. Many local workers lost their jobs. It was a very painful experience. Two months after closing the isolate plant building was purchased by AMPI (Associated Milk Producers Inc.). Today that building houses one of the world's largest cheese plants.

Dawson Mills is now owned by AGP, a cooperative. It is hard for outsiders like Joe to know how the plant is doing financially since no public reports are issued. The keys to running a successful crushing plant are to keep costs as low as possible and to steadily increase volume. Dawson Mills was located in a good area, with plenty of soybeans grown nearby and plenty of people to buy the meal. Two or three soybean crushing plants have started in the area since Joe left in 1981: One in Volga, South Dakota (late 1996), and one in Fairfax, Minnesota. Both compete with Dawson.

Dwayne Andreas has a long history with co-ops. After leaving Cargill, he went to work for Farmers Union Grain Terminal Association, a cooperative; he was the No. 2 man in that organization. In Aug. 1960 Dwayne and Lowell sold Honeymead, their crushing plant in Mankato, to Farmers Union (GTA), which was a cooperative. Sometimes ADM was an unfair competitor, offering very low prices to Dawson's customers; that was when Dwayne Andreas's son was running the plant in Mankato. He was one who ended up going to jail. Cargill, on the other hand, "was always good, clean competitor."

When Joe first arrived at Dawson Mills, many of the shareholders were individuals. This was a very cumbersome arrangement, because Dawson ended up buying soybeans from the farmer direct, through the elevators. The elevators saw to it that Dawson always bought at the highest possible price. This was not a workable arrangement for Dawson Mills. So within 2 weeks of his arrival, Joe created several kinds of shares. Individuals had their shares changed to preferred stock, on which Dawson paid interest. Dawson Mills would offer each day at 2:00 p.m. (over the radio) to buy soybeans at a specified price per bushel, delivered to its mill. There was no bidding or negotiation. Dawson always hedged its operations by buying and selling futures in either soybeans, meal, or oil. Knowing which to hedge was very complex and could have a big impact on profits. It was an hour by hour decision.

Why were there so people with Scandinavian names living in Dawson? Joe notes that when the railroads built a new line, they would place a town center roughly every 10 miles. Many towns took on an ethnic character, becoming a magnet for immigrants. Dawson was basically a Norwegian town.

Patronage refunds: Each year, if cooperative business makes a profit, it is called "Net Savings." The company's board of directors decides how these Net Savings will be distributed. Dawson bought all of its soybeans from elevators that were cooperatively owned by local farmers, who sold their soybeans to the elevator. The majority of the New Savings would be allocated back to the elevators, in proportion to the amount of soybeans they had sold Dawson. This money was considered as income or operating revenues by each elevator, and there were various ways of accounting for it. This was complicated by the fact that most elevators had feed mills closely associated with the elevator. In some cases, if Dawson Mills allocated 5 cents per bushel, the elevator would pass that on to each farmer that had sold soybeans to the elevator. In other cases, if the elevator was losing money on its oats and wheat, the soybean income might counterbalance that. If an elevator lost money one year, the farmer-owners might get none of the patronage refund that Dawson Mills had paid the elevator. Some elevators were better managed than others; some always hedged. But over the years, Dawson Mills paid back to the elevators about 11 cents on each bushel purchased, and Joe guesses that farmers got about 50% of that.

Joe used to dread the annual meetings, because he never knew what issues would be raised. The boards of directors of the roughly 100 member elevators were invited to attend. For example, someone might stand up and ask, point blank, "Joe–How much are we paying you these days?" But Joe recalls they were always very generous with both his salary and bonuses for good performance. Address: 6566 France Ave. S. #906, Edina, Minnesota 55435. Phone: 952-926-7828.

568. *Iowa Soybean Review* (*Iowa Soybean Association, Urbandale, Iowa*). 2005. New soy-based transformer fluid jolts rural electric co-ops. 16(7):14. May.
• ***Summary:*** "Can rural electric cooperatives afford to make

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the switch to soy-based alternative transformer oil? The true question is, can they afford not to switch? Funding by the soybean checkoff helped to verify that soybean fluid would perform effectively as transformer oil. Cooper Power Systems developed Envirotemp FR3 Fluid and is working with Cargill to produce a soy-based transformer oil that reduces the risk of transformer fires and extends transformer life over conventional, petroleum-based dielectric fluids. Initially, Envirotemp FR3 Fluid is more expensive than mineral oil; however, long-term savings are involved because it extends transformer life. Tipmont Rural Electric Membership Cooperative in Indiana is one of the first major electric co-ops to use Envirotemp FR3 Fluid, and they report great results. The soy-based technology offers improved safety and easier cleanup of spills because the soybean oil replaces petrochemicals. Cooper Power Systems estimates the annual replacement of dielectric transformer fluids could consume up to 75 million gallons of soybean oil per year."

569. *Iowa Soybean Review* (*Iowa Soybean Association, Urbandale, Iowa*). 2005. Next generation oils: New low-lin soybean oils sizzle without trans fats. 16(7):12j of 12-page insert after p. 14. Spring.

• ***Summary:*** "With the FDA's Jan. 1, 2006, deadline for mandatory trans fat labeling, food companies are resolving to get their fatty acid numbers as low as possible this year. New low-linolenic soy oils that can help reduce–and even eliminate–trans fatty acids will make it easier to keep that resolution.

"The front-runner of the moment is Asoyia trans fat-free soy oil, launched last fall by Winfield, Iowa-based Asoyia llc after years of research by Iowa State University agronomists and food scientists. Asoyia is being produced from newly developed soybeans that contain only one percent linolenic acid (a component of soybean oil that causes it to eventually become stale or rancid), compared with eight percent linolenic acid in traditional soybeans. Soy oils with low levels of linolenic acid don't need to be hydrogenated for freshness and long-lasting stability, so no trans fats are created in the oil.

"Asoyia llc is marketing the new oil, which is being processed by Wayzata, Minnesota-based Cargill Inc., for commercial cooking applications in the 5 billion-pound market for frying oil. Vivan Jennings, chief executive officer of Asoyia, which is owned by 25 growers of the low-lin soybeans, notes that the trans fat-free oil also offers other advantages for commercial kitchens.

"'In extensive tests conducted by food services and restaurants, the one percent linolenic oil lasted 25 to 33 percent longer in frying applications than other current premium frying oils,' says Jennings. 'The fried products stay crispier longer and taste the same as those fried in hydrogenated soybean oil.'

"Asoyia also has less saturated fat than some other alternative frying oils.

"Jason Wheelock, kitchen manager for Hickory Park Restaurant Co. in Ames, Iowa, agrees that Asoyia is a winner beyond its trans fat-free status. The casual family dining and barbecue restaurant helped test Asoyia last winter, and 'it actually worked much better than the oil we were using,' says Wheelock. 'The first week we used Asoyia, we were really busy, and we [still didn't have to change the fryer oil] for two weeks. We usually have to throw out the oil on a weekly basis... our customers didn't notice any difference in taste, which is a good thing,' says Jennings.

"Wheelock says the restaurant plans to use Asoyia again when it becomes commercially available, and plans to highlight the oil's lack of trans fatty acids.

"'We're also working with some other SYSCO houses in other states, and talking to some major national chains of upper-scale restaurants who will be testing Asoyia,' says Jennings.

"'We will be directing our marketing efforts to businesses where fried foods are featured on the menu,' he adds. 'These foods can be marketed by restaurants as a more heart-healthy menu item than when they were fried in oils high in saturated or trans fats.'

"Jennings says Asoyia is also exploring larger-scale uses for healthcare foodservice segments, such as hospital, university and school dining rooms.

"Also poised for entry into the low-linolenic market is Nutrium Low Lin soybean oil, the first product to be sold under the new brand name created as part of an alliance between Bunge Ltd. and DuPont. The Nutrium soy oil, which became available for testing and product development last fall, is made from a new Pioneer soybean variety whose oil has less than three percent linolenic acid.

"'We expect to have 20 million pounds [of Nutrium soybean oil] available commercially in October 2005, and 150 million pounds in 2006,' says John Jansen, vice president of product and process development at Bunge North America in St. Louis [Missouri]. By 2009, full-scale production of nearly one billion pounds of the oil is planned.

"Nutrium Low Lin is a natural substitute for frying shortenings used by food processors and foodservice operators, says Jansen, but it could also expand into the consumer market ultimately.

"Also debuting in fall 2005 will be low-lin soybean oils processed from Monsanto's new Vistive soybeans with less than three percent linolenic acid. So far, both Cargill and Ag Processing Inc., Omaha, Nebraska, have signed on as participating processors, with more processors expected to be added in 2006.

"The trans fat concerns driving the low-linolenic segment are also steering other soybean oil solutions, such as interesterified soybean oil, a blend of hydrogenated and nonhydrogenated soybean oils that works best in applications for solid or semisolid fats. The interesterification process,

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whether chemical or enzymatic, rearranges fatty acids in soybean oil to allow it to function like the partially hydrogenated oils it replaces, but without the trans fats.

"Archer Daniels Midland in Decatur [Illinois], launched its NovaLipid interesterified soybean oil in July 2003, and Bunge and Cargill also offer interesterified soy oils, in addition to other custom blending solutions.

"No matter how they do it, it's a safe bet that the food industry will remain focused on slimming down soy oils for the foreseeable future. 'There's a lot of interest right now because of the pressure on trans fats,' says Bunge's Jansen."

A photo shows that "Asoyia trans fat free soybean oil (right) offers a clear alternative to conventional soybean oil (left)." Both oils are in clear glass pitchers.

570. Lester, Bill. 2005. Boone Valley and the origins of Ag Processing Inc (AGP). Part I (Interview). *SoyaScan Notes.* June 28. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** A good book on the history of AGP, including a history of each of its component soybean processors is *Soybeans, Cooperatives and Ag Processing Inc.*, by Margaret Finnerty (1992). This book was the brainchild of Jim Lindsay and Urban Knobbe (chairman of the AGP board). They said, "We're all getting older and be better start to document some of this history." Bill was also involved in the project. It was edited in a way that it didn't create any "political problems" in terms of the sensitivities of AGP member companies.

The story of AGP begins with the widespread recognition that Boone Valley, an independent soybean processing cooperative in Eagle Grove, Iowa, was is deep financial trouble. In June 1959, Keith Voigt had been hired as the manager of Boone Valley. In early January 1982 he resigned (actually he was discharged; the co-op bank wanted him out) amidst financial difficulties. Farmland Industries and Boone Valley had long had a very close working relationship. Boone Valley owned a very modern feed mill right in their complex, but they manufactured Farmland feed under a franchise agreement. Boone Valley had gotten into a very extensive expansion program, first to increase the size of their existing solvent extraction plant (which had a capacity of 1,000 tons/day) by adding a complete new separate unit (4,000 tons/day capacity), and then to acquire the local Eagle Grove coal-fired electrical energy plant from Iowa Public Service, which was being shut down. They needed this energy plant to generate sufficient energy to operate their expanded 5,000 tons/day soybean processing plant. But processing margins in those days were non existent, so they were not making any profit. However, since Boone Valley had no debt, they were able to borrow the money needed for their expansion from the Omaha Bank for Cooperatives.

Enter "safe harbor" leases. Because of the tax structure of cooperatives, depreciation and investment tax credits really don't do a cooperative any good in reducing taxes. During the time when the "safe harbor" lease program made such leases available, the investment tax credits and the complete depreciation on the complete expansion program of about $19 million were sold to General Mills, but on the condition that both projects had to be up and running by 31 May 1982–so that General Mills could use those tax credits. Ironically, Bill recalls, Boone Valley was so deeply in debt, that these tax credits were its only real asset. By selling the tax credits to General Mills, Boone Valley reduced its debt to "only" about $35 million from $55 million. In effect, Boone Valley was using tax gimmicks and loopholes to help pay for its expansion. Farmland helped put the whole deal together and then guaranteed the sale of those tax credits. Basically, Farmland was now in the driver's seat.

So Farmland called Bill Lester, described the problem, and said, "Will you go over there and get that project done!" So on 17 Jan. 1982 Farmland put Bill Lester on loan from Farmland's soybean processing plant in Sergeant Bluff, Iowa, to Boone Valley at Eagle Grove. Bill went there as interim manager (on loan from Farmland, on Farmland's payroll until 1 May 1982) and got all the work done on time–in fact almost a month ahead of schedule.

The Boone Valley board had seen how effectively Bill Lester could get things done. So on 1 May 1982 that board invited Bill to consider staying with them in Eagle Grove, Iowa. Bill checked with his boss, John Anderson, President of Farmland, who said that if Bill would like to make the move, he would have the complete blessings of Farmland Industries.

Thus, 1 May 1982 Bill Lester went to work for Boone Valley as their general manager. But soon a new and much bigger problem arose that had not been addressed. Boone Valley, with its new and expanded plant, was "killing" the other cooperative soybean processors. Most of those processors were in trouble financially. Moreover, they were competing with each other rather than cooperating. Many in the industry agreed that individually, they were too small to compete with soybean processing corporate giants like ADM and Cargill. So cooperative leaders began talk with one another–men such as Jim Bauler (of Land O'Lakes), Urban Knobbe and Eldon Peterson (of Boone Valley), John Harling (President of the Omaha Bank for Cooperatives)–about the possibility of some sort of consolidation or merger, so they could start cooperating and stop competing. There was general agreement that the problem was greater than any one cooperative could handle by itself. Soon it was decided (based on a proposal by Ralph Hofstad, President of Land O'Lakes) to conduct a study to see how to best resolve the big problems and to see if consolidating the individual cooperative soybean processors would be to their benefit. By the summer of 1982, three cooperatives agreed to fund the study: Land O'Lakes, Farmland, and Boone Valley. They hired a consultant named Tom Veblin of Food Systems

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Associates of Washington, DC, to conduct a 3-part study. Tom first did a preliminary study, funded largely by Boone Valley. The goal of Phase One was to identify and contact every cooperative in the USA that was operating a soybean processing plant. Bill was actively involved, in part because he had worked with so many of the different cooperative companies.

As the next step in Phase One, a meeting was called of all heads of the cooperatives that had been identified as having soy processing plants in the greater Midwest. This first meeting was held in the board room of the Farm Credit building in Omaha. In attendance were general managers and CEOs from Harvest States / Honeymead of St Paul, Minnesota; AGRI Industries of Des Moines, Iowa; Gold Kist of Atlanta, Georgia (which once had soybean processing plants at Valdosta, Georgia; Marks, Mississippi; and Decatur, Alabama); MFA [Missouri Farmers Assoc.] of Columbia, Missouri [with a plant in nearby Mexico, Missouri]; and Riceland of Stuttgart, Arkansas (with soybean plants at Stuttgart and Helena, Arkansas). All the leaders agreed to discuss the idea of merger and to provide any information needed to Tom Veblin to complete his study. After about 3 months (in late summer or early fall, 1982) Tom's study was completed. It concluded that merging or combining the various soybean processors was a good idea.

All parties involved studied the report. By late December 1982 or early January 1983 the three companies that commissioned the report decided to pursue to the idea of merging and to try to work out the details. Bill Lester recalls that Ralph Hofstad, president of Land O'Lakes, played a major role in moving the group toward consolidation–he was a real visionary. Two big questions were: What other companies (if any) would join in the merger and what would its basic structure be? Continued. Address: Omaha, Nebraska.

571. Lester, Bill. 2005. Land O'Lakes, soybean processing, and Ag Processing Inc (AGP) (Interview). *SoyaScan Notes*. June 28. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Land O'Lakes (a dairy regional cooperative in Minnesota) first got involved in soybean processing in 1970 when the Farmers Regional Cooperative Company merged into Land O'Lakes. The Big 4 Cooperative (which had soybean crushing plants at Sheldon, Iowa, and Fort Dodge, Iowa) then became a division of Land O'Lakes. In 1980 Dawson Mills, which was on the verge of bankruptcy because its Specialty Foods Division was losing so much money, merged into Land O'Lakes. Bill believes Land O'Lakes agreed to acquire Dawson Mills largely for reasons related cooperative politics–they bailed them out, being unwilling to just stand by and watch a major fellow cooperative go under. Moreover, Land O'Lakes had a feed mill in Dawson city. Saving Dawson Mills cost Land O'Lakes millions of dollars. In June 1982 the Fort Dodge plant (which had previously been owned and operated by Cargill) was permanently shut down: it never really operated after the merger with Land O'Lakes. So when AGP was formed, Land O'Lakes contributed only two soybean processing plants: Sheldon, Iowa, and Dawson, Minnesota. Address: Omaha, Nebraska.

572. Kingsbaker, C. Louis. 2005. Fires and explosions at soybean processing plants (Interview). *SoyaScan Notes*. Aug. 2. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** There has long been an important relationship between the Safety Committee of the National Soybean Processors Association (NSPA, now named NOPA) and the National Fire Protection Association (NFPA); the latter organization has developed NFPA-36, which is the standard for Class 1B flammable liquids. The first NFPA-36 standard was written in 1957 and adopted by NFPA in 1959. It has been incorporated into the OSHA law / standards. When Lou joined the NFPA-36 committee in 1970, there were only two engineers (Lou and John Howeman) and no members of oilseed processing companies. Everyone else on the committee represented insurances; they were out to protect their own interests. "NFPA-36 pretty well eliminates soybean dust as a cause of explosions, because soybean dust is not an explosive due to its high oil content." Lou plans to give a speech in Buenos Aires, Argentina, in Nov. this year; his subject will be fires and explosions, and what changes have been made in NFPA-36 to prevent them from happening. The number of explosions has decreased as better safety practices have been implemented and enforced.

Lou has a list (not computerized) of more than 50 [59 to be exact] fires and explosions from 1948 on at oilseed processing plants worldwide; these are mostly soybean plants. He would be willing to share it with Soyfoods Center if we credit him as the source. He has been involved in 12 or 13 of these accidents, either while the fire was still burning or coming in afterwards to see what caused it.

In 1948 Lou started to work for Blaw-Knox and has been involved in starting up plants since 1949. In most of these cases, he was working for Blaw-Knox (which was later acquired by Dravo). Some of the explosions were in Blaw-Knox plants, some were not–but Blaw-Knox saw this as an opportunity for new business.

Lou was involved with the Louisville sewer explosion. In Friday, 13 Feb. 1981 Ralston Purina dumped about 25,000 gallons of hexane into the Louisville, Kentucky, sewage system, and blew up (and destroyed) about 20 miles of sewage pipes in the system. Miraculously, nobody was killed, and only one person was injured. Manhole covers were blown into the air, and flames shot out of the manholes. Ralston Purina was trying to get rid of the hexane and they thought they could get away with it. This was Lou's first job as a consultant; he was hired by the Louisville municipal

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sewer system.

Lou presented a paper about the Louisville sewer explosion in Denver, Colorado, for the international oil millers superintendents association. "This was the first time anyone had talked about what happened in this explosion." Ralston Purina sent a lawyer. Lou said that as long as the lawyer was in the room, he wouldn't give his paper. The group asked the lawyer to please leave, which he did. George Willhite of AOCS attended the meeting mainly to hear Lou's paper.

Lou turned the paper into an article, then submitted it to George Willhite for publication. The higher-ups at AOCS wouldn't allow the article to be published; somebody from Cargill stopped it. AOCS may publish it in 2005 to mark the 25th anniversary of the disaster.

Dick Farmer is now checking to see if Cargill (which bought 7-8 of the Ralston Purina soybean crushing plants) will allow Lou to give the talk at an AOCS meeting next spring. Lou and Dick Farmer are good friends and have worked together since the 1960s.

Cargill bought most or all of the Ralston Purina plants after the explosion. The explosion was probably the main reason that Ralston Purina got out of the soybean processing business! They were very embarrassed by this incident. The deposition of Hal Dean and William Stiritz was taken in their board room. Lou has most of the newspaper articles and many photos about the explosion in his files. It was the biggest event in the history of the solvent extraction industry in the USA. One reason for the Louisville explosion was very bad management at Ralston's plant; there was an ongoing argument between the man running the plant and headquarters in St. Louis, Missouri. Lou walked and inspected the sewers, and took many photos. More than 100,000 people were without sewage for a very long time. Sewage could not flow through the old pipes until they were replaced. One hole in the street was 20 by 30 feet. Ralston took out a $100 million insurance policy with Lloyd's of London 1-2 days after the explosion; they were afraid of pestilence if there were rain. People could get ill and die. In the end, Lou thinks it cost the company about $80 to $90 million out of pocket. There was a federal trial in Louisville. Lou, who was on the side of the prosecution, was in the witness stand for 4 straight days. After the prosecution presented its case, Ralston caved in and settled–with the sewer district, the city of Louisville, the state, and all the merchants who had to shut down their businesses because they couldn't get sewage service.

He also has photos of Quincy Soybean Co. when they had an explosion in Sept. 1966. And of Oelmuehle Hamburg in Germany where there was a tremendous explosion in about 1983; he was hired by them as a consultant. Central Soya had an explosion in 1994 in Indianapolis, Indiana; they were not allowed to rebuild the plant. They were cited by OSHA and fined something like $600,000 to $700,000. The story made all the Indianapolis newspapers. If somebody gets killed or goes to the hospital, OSHA comes right in and it becomes an open book. At Union Oil Mill, a cottonseed processor in Jackson, Mississippi, two men were killed.

In Germany, there have been a lot of explosions related to solvent extraction. Oelmuehle Hamburg had 3 solvent plants; 2½ of them were blown apart. At one plant in Germany, Lou was there when it was on fire. Another was Fuji Oil Co. in Japan in about 1990, where about 8 people were killed. Then the Japanese government stepped in, shut down the company and wouldn't let them re-open the plant. Lou, who was a consultant by then, was hired by the Japanese Oilseed Processors Association to fly to Japan, meet with the company, and see if they could develop a program to get government approval.

Blaw-Knox replaced the German plants owned by ADM and by Glidden (Indianapolis). Blaw-Knox copied some of the German designs, but then they developed a completely new extractor (Rotocel), and desolventizer. Lou "cut his teeth" working with the Rotocel at Blaw-Knox. Address: Atlanta, Georgia. Phone: 770-396-1413.

573. Richards, Michael. 2005. Update on work with candles (Interview). *SoyaScan Notes.* Aug. 3. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** "We have a very interesting business here. We sell everywhere from craft ladies coming in for one box to truckloads to other manufacturers." Michael's candle business is going well. He is now exporting to 22 countries, and all of these overseas customers found him using the Internet. "We did not seek any international business. It's a perfect example of Emerson's adage, that if you build a better mousetrap, the world beats a path to your door." He's been on the Internet for so long, that if you do a Google search for "soywax" as one word or "soy wax" or "soybean wax" as two words, the search engine takes you right to his website. He comes up first on the results list.

In Germany and Italy he works with companies that are "existing wax distribution entities. They are already in the paraffin wax industry and they have added Michael's wax to their line." Sales are going well in Europe. Italy doubled their order on their second order. His first overseas shipment was in the summer of 2004, when he shipped a full 20-foot container to Rotterdam, the Netherlands; from there it was distributed out to Great Britain, Norway, Guernsey and the Channel Islands. He works with a logistics and forwarding company in Rotterdam. And he has shipped containers to Beijing [China] and Hong Kong. "I'm still attempting to do all the wax business as one person, even though Cargill does all the manufacturing of the wax, which makes that possible." However he now has some people off the street doing some candle production, but on a smaller scale. Last time we talked, the landlord had sold the building in which Candleworks had operated for many years, so he was out

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of the wax-making business for a while. The equipment has been reinstalled in a new place.

His first customer with the actual candle production is an interesting company, Watkins, which has been around for about 140 years, when they basically invented direct sales, by selling muscle lineaments from wagons door to door to Minnesota farmers. Watkins now manufactures 90% of their own product line, which are mainly medicinals and culinary items (such as vanilla and various spices). They have graduated into the 21st century by direct sales via the Internet. Watkins is very well known in the central Midwest; their headquarters is in Winona, Minnesota, on the Mississippi River. Michael read a history of Watkins. In 1920, they had 20,000 salespeople across the USA–all working on commission and selling door to door. Many farm families have sold Watkins products for 40-50 years as supplemental income. Half of Michael's first shipment to them is going to China. They have realized that the direct selling model is of interest in China. Michael was invited and went to their annual meeting. In China, they are building a high-profile retail shop in Beijing, to establish a presence and develop a brand awareness. Then they will send direct-sales people throughout China–to sell Watkins products door to door.

There months ago Michael started writing a new book about the shift from petrochemical based consumer goods to biobased goods–such as soy candles. Iowa State University is getting deeply involved in researching biobased products; they have a symposium on that subject next week. The structure will be from the general to the specific. "I'm looking at how the petroleum paradigm came into existence, how so many products developed out of that, and then how and why the biobased shift is beginning to happen." He will have examples of some of the other entrepreneurs he has gotten to know–including a gentleman who works with soy plastics, etc.

"We've fought for our tiny corner here, but it hasn't been easy. Being right here in the middle of very productive farmland, we're in a good place."

Michael's relationship with Cargill is "an interesting paradox. Without that relationship, I would be unable to ship containerloads of soy wax to other countries. But their nature is to maximize their own profits, so I have to be very wary of them at every step along the way. So far, they have kept producing wax from our formula. They did develop C-2, which they then rejected, because customers kept saying it didn't work as well. But now they've moved onto C-3, which they try to sell." They are selling in competition to Michael. Michael can live with it. Sales over the first 4 years of the contract have grown at 10-15% a year. After 2 years, Cargill said they were disappointed in the rate of growth. Last year they told Michael "they were very pleased with the growth rate because they felt it was evidence of a true shift in the industry rather than just a little flash in the pan. They've changed their thinking. But it does teach you patience."

We talk about the switch from animal products to plant products. From whale oil to petroleum. From butter to margarine. From bees wax candles and petroleum candles to soy wax candles. Address: Founder and owner, Candleworks, Inc., 1029 Third St. S.E., Cedar Rapids, Iowa 52401. Phone: 319-363-1774.

574. Kingsbaker, C. Louis. 2005. Odds and ends concerning explosions and fires at solvent extraction plants (Interview). *SoyaScan Notes.* Aug. 4. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Lou was deeply involved in the Ralston Purina trial. He served as an expert witness and his name was mentioned many times in the court record.

With the talk was a chart that he made of time and temperatures of equipment, showing how many times Ralston Purina had tried to re-start the plant after the explosion.

Sergeant Bluff: Connection between Carl Parker, Jr. and Bunge. Was his father connected with Bunge. "I think he was plant manager at Eagle Grove." "When they went to put in this new plant at Sergeant Bluff, they sent Carl, Jr. up to assist in the work." Carl is still living.

On 8 March 1982, E.H. Gustafson (Cargill's general superintendent) sent Lou a letter with his list of fires and explosions. It was interesting that he did not list the fires at Cargill's plants in Chicago (Illinois), Minneapolis, or Savage (Minnesota). He said: "You will note Cargill incidents are not listed. I believe you know most of these." Address: Atlanta, Georgia. Phone: 770-396-1413.

575. McKee, David. 2005. South America: The world's soybean super supplier. Brazil, Argentina and Paraguay have seen their combined soybean production rise 350% during the past 20 years. *World Grain* 23(8):32-34, 36, 38. Aug.

• ***Summary:*** A superb, insightful, long article. In Brazil and Argentina, and to a lesser extent in Paraguay and Bolivia, soybean production has grown dramatically in recent decades. "In fact the accelerating expansion of South American soybean production in the last 20 years may be unprecedented for any agricultural commodity in a single region of the world in terms of planted area, absolute increases in harvests, volumes, processing and rising export values.

In 2005-06, considering the soy complex as a whole, Brazil will surpass the USA as the world's leading exporter with a combined 42.5 million tonnes–based on USDA forecasts. Argentina, at 36.8 million tonnes, will be just behind the U.S.'s 37.7 million tonnes (see bar charts, p. 36). The USA is still the world leader in soybean shipments, but in soybean meal and soy oil, Brazil and Argentina have long ranked number one and two ahead of the U.S.

The main reason for this unprecedented expansion in

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South American soybean supply during the last decade is the unprecedented demand in growth from China; rapidly rising incomes there have led to more meat consumption and a bigger, more sophisticated livestock feed industry.

In 1995 China was nearly self-sufficient in soybeans with almost 14 million tonnes of domestic production and less than 1 million tonnes of imports. Yet by 2004-05 (Sept. to Aug.) China had passed the E.U. [European Union] to become the world's leading importer with 23.2 million tonnes. During the same period, exports of soybeans from Brazil and Argentina increased by 27 million tonnes.

The soybean is a more important crop in South America than even in North America. In Brazil, Argentina, and Paraguay, soybeans and soy products are the most valuable category of agricultural exports.

What has caused this remarkable rise? In Brazil it is the availability of a huge amount of unused arable land in the country's "Midwest." In Brazil, soybean production has progressed historically from the southern states of Parana and Rio Grande do Sul, northward into the interior of Brazil's Midwest.

A sidebar, titled "Capital: The ABCD's of the soybean industry," explains that the "role of international capital in the expansion of Brazilian and Argentinian soybean production cannot be overstated." Huge multinational firms like ADM, Bunge, Cargill, and Louis Dreyfus dominate soybean crushing and trade in both countries. They have provided their own infrastructure as well as seed, fertilizer, and crop financing. Cargill and Bunge even produce and distribute phosphate fertilizer in South America. The 'big four" own more than half of the soybean solvent extraction plants in Brazil, and account for a much larger percentage of the country's total installed crush capacity of 39 million tonnes a year. Bunge is the leading soybean crusher in Brazil, with Cargill at no. 2. But Cargill is the leading soybean exporter, operating five export terminals along Brazil's Atlantic coast. ADM was the latecomer to Brazil, but after arriving, its strategy has been swift and decisive.

In Argentina, ADM does not own any soybean crushing plants, but in 2004, together with its trading subsidiary, Toepfer, it exported about 20% of all of Argentina's soybeans–1.8 million tonnes. In Paraguay, ADM moves as much as 40% of the soybean harvest.

Photos show: (1) Aerial view of a new soybean crushing plant at General San Martin Port on the Parana River in Argentina's Santa Fe Province. Like much of the country's soybean extraction capacity, it was built purposely for export. (2) Aerial view of Louis Dreyfus port facility and soybean crushing plant in General Lagos, Argentina.

Bar charts show (p. 36): (1–very interesting) Exports (in million tons) of soybeans, soybean oil, and soybean meal from Argentina, Brazil, and the USA in the years 1r95 and 2005. In 2005, Argentina exports mostly meal, followed by soybeans, then oil. Brazil exports mostly soybeans, followed by meal, then oil. The USA exports mostly soybeans (more than Argentina and Brazil), followed by small amounts of meal and oil. (2) Soybean area and harvest (production): In 2005, the USA as the largest total production, followed by Brazil and Argentina. But U.S. production has shown relatively small percentage growth, compared with the percentages of in Brazil (#2) and Argentina (#1).

576. Soyfoods Association of North America. 2005. New taste of soy: Annual reception September 15, 2005 (Card). Washington, DC. 1 p. Front and back. 13 x 18 cm.
• ***Summary:*** "The New Taste of Soy is a chance to sample a delightful array of soyfoods and talk with policy makers, Administration officials and leading representatives in the soyfoods industry, including manufacturers, growers and suppliers.

"Thursday, September, 2005. 5:00–7:00 pm. U.S. Capitol, Room HC-5*, Washington, DC.

"A special thank you to Congressman Collin Peterson from Minnesota for hosting this year's event. RSVP: members@soyfoods.org–by September 7, 2005.

"Sponsored by: Soyfoods Association of North America, Archer Daniels Midland, Cargill, Boca Foods, Hain-Celestial Group, Kellogg's / Worthington Foods, Monsanto, Natural Products Inc., Revival Soy, Solae, Sunrich, a Division of SunOpta, Vitasoy USA, White Wave Foods." Printed green and black on white. Address: 1101 Connecticut Ave. NW, Suite 1120, Washington, DC 20036. Phone: 202-659-3520.

577. Boismenue, Clyde. 2005. Soy protein isolates–old and new (Interview). *SoyaScan Notes.* Sept. 9. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Cargill has fallen flat on their face with their isolate made by ultrafiltration. Soy protein clogs the filters. The product is very fluffy. And there are waste water disposal problems; they must dilute it and back-flush the filters. It is still made from hexane-extracted white flakes.

Almost all isolates are spray dried; this reduces their dispersibility. To solve the problem, the powder is agglomerated by spraying it with a fine mist of water. It is still a free-flowing powder but now more expensive. Ideally you want an isolate that will "fall in," meaning it will disperse in water by itself, without stirring, when it is placed on the surface.

Clyde has spent much of the past year evaluating and developing soy protein isolates for food ingredient use. Supro 661 is still the best-selling isolate to the health and natural foods industries. Sand is very dispersible in water but not at all soluble.

Isolates have 3 main problems. 1. Flavor. 2. Those with a bland flavor are quite viscous, so they are not very soluble. 3. Color; many are tan, and can only be made white by bleaching.

Solae and ADM are the two biggest makers of isolates

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and Solae is about 5 times as big as ADM. ADM's branded products have a hard time because they are part of a commodity company, which thinks only in terms of price; they have no concept of sales or customer service. They treat their isolates like a commodity, and always ask: At what price could we sell it? That is the wrong question, the wrong approach. Some people won't buy it at any price. Customers of isolates need customer support and a product suited to their special needs.

A centipoise (pronounced SENT-uh-pwaz) is a unit of absolute or dynamic viscosity (1/100 of a poise) in the cgs system. Water is 7-10 centipoise. Slimfast in liquid is about 100 centipoise. The approximate viscosity, in centipoise, of various substances at room temperature is: Water 1, olive oil 100, Slimfast in liquid 100, a thin milk shake 700, motor oil 1000–2000, honey 2000–10,000, molasses 5,000–10,000, Heinz ketchup 50,000–70,000, peanut butter 250,000. Address: Basic Foods Co., P.O. Box 240070, Los Angeles, California 90024. Phone: 310-473-0719.

578. Cargill to acquire Degussa's food ingredients business (Web article). 2005. www.FoodProcessing.com 1 p.
• ***Summary:*** "Degussa AG of Dusseldorf, Germany, announced September 9 it has agreed to sell its food ingredients operations to Cargill (Minneapolis [Minnesota]) for 540 million Euro ($670 million U.S.). The transaction is still contingent on the approval of the Degussa Supervisory Board and the relevant regulatory authorities. "Degussa Management Board Chairman Prof. Utz-Hellmuth Felcht remarked: 'Food Ingredients are a strategically ideal fit for a strong global food industry player such as Cargill. We feel that we have placed these operations in good hands, and are very satisfied with the transaction as a whole.'

"'This agreement marks a very significant step in Cargill's strategy of becoming a leading provider of specialty ingredients and ingredient systems to food and beverage companies globally; said Warren Staley, Cargill chairman and chief executive officer. This will be our largest acquisition since Cerestar in 2002, and greatly strengthens our range of texturant systems and flavoring capabilities. It supports our strategy of becoming the recognized global leader in providing food and beverage companies with innovative solutions that help them succeed.'

"Degussa's Food Ingredients Business Unit consists of the Texturant Systems and Flavors Business Lines. Texturant Systems is comprised of product groups in the areas of hydrocolloids, blends, lecithin, cultures and bioactive ingredients. The Flavors Business Line produces flavoring solutions for the beverage, dairy, confectionary and other food sectors and provides key capabilities in formulation, application, analytical chemistry and sensory analysis. The expertise of Degussa's Food Ingredients employees will complement and strengthen that of the existing Cargill organization."

579. Messina, Mark J. 2005. Update on research on the health benefits and risks of soy (Interview). *SoyaScan Notes.* Sept. 15. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** A health food company is being sued by a cardiologist and his wife, a Boston, Massachusetts, socialite, because theirs daughter, who consumed soy infant formula, is now 10 years old, overweight, and shorter than the average height of girls her weight.

Sally Squires wrote an article in the *Los Angeles Times* and ended up quoting Kayla Daniels and Mark.

For people with questions about the health benefits of soy, SANA has a superficial "soy primer."

Mark and Ginny have now decided not to update their book *The Simple Soybean and Your Health.* Mark is too busy.

There is a new "4th tier" journal titled *Explore: The Journal of Science and Healing.* Parts of it are peer reviewed. They will have a department titled "Point–Counter Point" in which both sides of controversial issues will be debated; it is not clear whether or not this department will be peer reviewed. Kaayla Daniel (who has never published anything in the peer-reviewed literature and has a "phony PhD") will present one side and Mark will present the other. Yet to do a careful analysis of each of the issues takes much more space than the journal is willing to allow.

A huge new report by NIH on the health benefits of soy has just been published. It concluded no significant benefits.

The 6th International Symposium on the Role of Soy in Preventing and Treating Chronic Disease will be held in Chicago, Illinois, this fall. Mark is again the organizer. Attendance is way down, so it might be the last one. So far only 74 full registrants, 6 students, and 6 complementaries are registered. Sept. 30 is the date after which the cost of admission rises. This compares with 394 attendees in 1995, 496 in 1997, 600 in 1999 (the peak year), 260 in 2001 and 220 in 2003. Why the decline: This is now a mature field. Huge numbers of studies on the health benefits of soy have been conducted and the benefits are just not that impressive. If there is another conference, it will be smaller, shorter, and more focused on hot topics such as soy and cancer. Mark has had to raise about $100,000 for each of the past conferences.

If consumers lose interest in soy, research, retail sales, advertising, and articles in magazines and newspapers will decline. In America, nutrition comes and goes like fashions; what is "in" this year may be "out" a few years later. White Wave has everything riding on the short term outcome of these developments.

Mark thinks we need a million dollar pro-soy campaign and a solid retrospective study (which would cost only $300,000 to $400,000 dollars) to address fertility concerns. A researcher could go to fertility clinics and ask the clients and their living parents which ones consumed soy-based infant formula. Many of the animal studies are very old–the 1946

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study on Australian sheep and the later one on cheetahs in a U.S. zoo.

A hot topic now is potential risks and safety concerns of soy, especially for infants, but also fertility concerns for adults. Significant questions are being raised that soy isoflavones could raise hormonal effects. Kayla Daniels is completely irresponsible in the kinds of statements she makes. She says there are "hundreds of studies" in areas where there may be only ten, and where only one is conclusive.

Bunge did a very careful analysis of how much soy protein the average American consumes for all different sources, including breads, soups, etc. They concluded it was 2.2 gm of soy protein per person per day; that would include 1-2 mg of soy isoflavones.

ADM is turning its interest to lignans in flaxseed. Address: PhD, 439 Calhoun St., Port Townsend, Washington 98368. Phone: 360-379-9544.

580. *Seed World.* 2005. Comings and goings: Patents and Registrations. 143(8):26. Oct.
• ***Summary:*** "On July 20, under terms of an agreement between Cargill and the Indiana Soybean Board (ISB), Cargill will receive exclusive rights to market and distribute candle patent technology owned by ISB.

"Cargill will help ISB find markets for the technology through its NatureWax® business, a line of vegetable-based waxes made from soybeans."

581. Javiera Rulli–Grupo de Reflexion Rural. 2006. Paraguay: Soy spreads and the peasant to jail. *MSN Hotmail.* Feb. 5. 3 p.
• ***Summary:*** "Paraguay is an extreme case in the Mercosur of soy in terms of the most violent and cruel face of the agricultural industry. Each hectare of soy spreads in Paraguay with the price of blood from the agricultural communities. For the agricultural industry, rural agriculture is an obstacle which should be destroyed in order to expand. Paraguay is a country that to this day maintains a living rural and indigenous culture, with the majority of the population living in rural areas and attempting to be self sufficient. However, the distribution of land has historically been extremely unequal. In Paraguay less than 2% of the population owns 70% of the land. The advance of the agricultural export model of soy and the expansion of producers of genetically modified soy monocultures has created a frontal threat to the rural and indigenous communities in the past few years. The government under Duarte Frutos, involved in a chain of corruption and supported by agribusiness corporations like Monsanto, Cargill, Dreyfus, Syngenta, assaults peasant organizations every time with greater impunity. The genetically modified soy enters the country through US troops, as well as through the WWF's [World Wildlife Fund's] debt for forests swaps and the debt for health swaps of USAID.

"Almost half of the conflicts related to land involve soy producers, and they are also characterized by the most violent conflicts."

"Since the year 2000, soy monocultures have spread from 1.1 to 2.05 million hectares. The expansion of monocultures has provoked the eviction of rural workers and indigenous peoples." Documents the number of evictions and arrests, the type of violence used, the new wave of violence, and individual cases of murder. The police act together with the military and INDERT (The National Institute of Rural and Land Development).

582. Thompson, James. 2006. Blame beans? *Corn and Soybean Digest.* Feb. p. 35.
• ***Summary:*** "Are soybeans destroying the Amazon? Well, no. Okay, yes. Sort of. Indirectly. It depends on who you listen to."

Rainforest destruction is at record highs. Brazil's government states that an area larger than the entire state of New Jersey was cleared from the Amazon basin in Brazil last year alone. It starts when Brazilian ranchers clear the rainforest to run cattle. Environmentalists argue they know they can recoup the costs of clearing in several years when they sell the land to soybean farmers.

But the details make a big difference in how you view the problem. For example: What is meant by the term "Amazon Rain Forest"? In addition to true jungle, a lot of savannah land (dry and bushy) lies within what is officially designated as the Amazon Basin–but which nobody would call rain forest.

Yet also it is widely believed that paving a new road (BR163) [BR-163] from Cuiaba to Santarem, where Cargill has a port on the Amazon, could increase destruction of real rain forest. And one can earn a lot of money from illegal cutting of big hardwood trees–in Brazil or anywhere else.

583. Bell, David E.; Shelman, Mary. 2006. Bunge: Poised for growth. *Harvard Business School Case Study* N9-506-036. 36 p. Revised March 9, 2006. [9 endnotes]
• ***Summary:*** Original copyright: 2005. www.hbsp.harvard.edu. Contents: Introduction. The oilseed industry: Farm-to-consumer chain, soybean pricing, genetically modified soybeans, other feeds, other oils. Bunge Limited: Company background, building an oilseed giant. Bunge 2005: Agribusiness, fertilizer, food products. Bunge-DuPont alliance (2003): Technology access, production agriculture, The Solae Company (launched in April 2003, it is a soy ingredients company). The Bunge difference: Focused, efficient and global, integration unlocks value, commitment to partnering. The "Bunge Style." Managing change: Changes in demand and world trade, greater market volatility, greater traceability and integration (Nutrim Low Lin). Filling in the global mosaic.

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Exhibits.

(1) World supply of major oilseeds, 2000/2001 to 2005/2006 (million metric tons). Soybean (by far the largest), rapeseed, cottonseed, peanut, sun seed, palm kernel, copra.

(2a) Soybeans: World supply and distribution (thousand metric tons), 2000/01 to 2005/06.

(2b) Soybeans: Harvested area and yield by country, 1999-2005.

(3) Oilseed supply chain.

(4) Soybean pricing by major producing country, 1985-2005 (in US$ per metric ton).

(5a) Adoption of genetically modified soybeans in USA, Brazil, Argentina, 1997-2004. The USA has adopted the most and the fastest.

(5b) Graph: Global area of biotech crops, 1996 to 2004, by crop. Soybean, maize, cotton, canola.

(6) Pie chart (%): Share of global soymeal consumption by region, 1998 and 2005: The big change is in China, which has grown from 9% to 18%.

(7) World vegetable oil supply and distribution, 2000-2005 (million metric tons).

(8) Bunge stock price, Aug. 2001 to Nov. 2005. It has risen steadily and much faster than the S&P 500.

(9) Map of Bunge facilities in Eastern Europe.

(10) Map of trade flows and Bunge's global footprint. Soy products, corn, wheat. Shows each Bunge facility.

(11) Bunge Ltd. financial summary (in US$ million except share data).

(12a) Bunge operating segment information, 2002-2004–Agribusiness, fertilizer, edible oil products, milling products, other, unallocated.

(12b) Bunge net sales by geographical area, in US$ millions, 2002-2004. Net assets by geographical area.

(13) Graph: Growth of Bunge's Brazilian fertilizer business (8.6% a year). Bunge-DuPont biotech alliance. Treats DuPont/Pioneer as one company. "An effective development and delivery system for soy products."

(15) Comparison of Bunge, Cargill and ADM results, 2000-2005, Cargill has the largest revenue and no. of employees, followed by ADM, with Bunge last. But Bunge has grown the fastest.

(16) The Bunge operating model.

(17a) Projected population growth, 2004-2050 by world, high income, low income, Africa, Asia. Source: U.S. Bureau of Census.

(17b) Population growth and income growth, 1986-2010. "World food needs continue to grow." World population is growing at 1.35% per year average. World per capita income is growing at 1.4% per year adjusted for inflation: Source: World Bank.

(18) Graph: Areas with growing meat consumption. "Fastest growth in meat consumption occurs when income is less than $5,000 per year." Annual income per capita in 1995 US$.

(19) Projection of grain (corn and wheat) and soy consumption in principle markets, 2004/05 to 2010.

(20) Projection of grain and soy production in principle origin markets, 2004/05 to 2010.

(21) Production potential of agriculture in Brazil. Address: 1. Prof.; 2. Senior Researcher. Both: Agribusiness Program, Global Research Group [Cambridge, Massachusetts?].

584. Commission of the European Communities. 2006. Case No Comp/M.3975–Cargill / Degussa Food Ingredients. Brussels, Belgium. 38 p.

• ***Summary:*** "Whereas: On 21 October 2005, the Commission received a notification of a proposed concentration by which Cargill Incorporated ("Cargill", USA) acquires control within the meaning of Article 3 (1) (b) of Council Regulation No 139/2004 on control of concentrations between undertakings ("the Merger Regulation") of the whole of the undertakings Degussa Food Ingredients GmbH, Degussa Food Ingredients US, LLC. and Maxens GmbH (altogether "DFI", Germany) by way of purchase of shares. Cargill and DFI are hereinafter referred to as "the parties".

The Advisory Committee on Concentrations conducted a careful investigation of the effects of the proposed merger on competition with the European Committee.

On 29 March 2006 the Commission issued its decision (p. 2) "declaring a concentration to be compatible with the common market and the functioning of the EEA Agreement.

Most of the report is about lecithin, GM vs. non-GM lecithin, deoiled vs. non-deoiled lecithin; it contains some interesting and valuable information about lecithin. For example, on page 6 we read: "According to estimates provided by the parties, the demand for lecithin stems primarily from the food industry (almost [55-65%]*) with confectionery (chocolate) manufacturers representing the highest proportion of lecithin purchases within the food segment. Animal feed applications account for almost [25-35%]* of total lecithin demand whereas industrial as well as pharmaceutical and other non-food applications are of minor importance with each type of application accounting for less than [5-15%]* of total lecithin demand.

"* = Parts of this text have been edited to ensure that confidential information is not disclosed; those parts are enclosed in square brackets and marked with an asterisk."

Note 1. Armin Wendel adds:

Lucas Meyer was sold to SKW in 1999.

SKW and Degussa Huels = Degussa AG.

Cargill bought the lecithin and food business from Degussa June 2005.

Note 2. The acquisition was approved by European regulators in 2006. ***

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585. INTSOY. 2006. Processing and marketing soybeans: Meat, dairy and baking applications, May 1-5, 2006 (Leaflet). Urbana, Illinois. 4 panels each side. Each panel: 22 x 9 cm.

• ***Summary:*** This glossy leaflet (green and black on white) announces a 5-day course ($1,800) plus the course and an extended workshop schedule ($2,400). The program now has 15 corporate sponsors: The Solae Co., Staeta, Insta-Pro, Proviant, BAR, N.A., Inc., SOI, ADM, Assoy, Wenger, Microsoy Corporation, US Soy, Silk, Kikkoman, Cargill, and Buehler. Course schedule: Welcome, international soymilk processing, success stories, soymilk, and soy products, marketing, soy flour, soy and meat, hot topics (soy infant formula, soy and reduction of chronic disease, soy allergies, quality and stability of soybean oil, specialty soybean varieties, biotechnology of soybeans). A list of featured speakers are given; many are from the corporate sponsors!

Talk with INTSOY employee. 2005. The "short course" has been discontinued; it was established through a grant, has come to an end. The course is now under the aegis of NSRL. In the year 2000 the 4-day course attracted 28-30 people. Address: National Soybean Research Lab. (NSRL), 1101 W. Peabody Dr., Urbana, Illinois 61801. Phone: (217) 244-1706.

586. Messina, Mark J. 2006. Origin of the Soy Nutrition Institute (Interview). *SoyaScan Notes.* May 12. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The following companies have paid $10,000 to join the Institute: Revival, White Wave, ADM, Cargill, Solae, Monsanto, SANA, and the Soyfoods Council (Linda Funk, Iowa). The first meeting will be held on May 15 and 16 in (Monday and Tuesday) at the Sheridan-Clayton Hotel in St. Louis, Missouri. It could be the beginning of something important. Mark will be sending out official notes.

Mark has started to play the mandolin for fun. Also, he thinks that some of the recent not-so-exciting research findings on soy and human nutrition look bad because of the great expectations that so many people now have about soy. If we put things back into a more normal perspective, it still looks good, its just not going to make the food and ingredient manufacturing companies as rich as they hoped–except probably White Wave. Address: PhD, 439 Calhoun St., Port Townsend, Washington 98368. Phone: 360-379-9544.

587. Asoyia, LLC. 2006. Asoyia. Ultra Low Lin Soybean Oil–The solution to the food industry's needs! (Website printout–part). www.asoyia.com 7 Retrieved July 8.

• ***Summary:*** Contents: Home page. Media center. Contact us. 2006 growers program. Awards.

Home page: "The smarter choice in cooking oil. Asoyia is uniquely made from 1% linolenic soybeans, Finally, trans fat free cooking combines with cost efficiency and great taste." "A lower saturated fat alternative that leaves low transferable taste, offers an economically longer fryer life, and addresses your customers' needs for trans fat free cooking." Asoyia low linolenic oil "requires no hydrogenation to maintain a stable shelf life and low transferable taste. Linolenic acid is found naturally in all soybean oils, and it causes it to become stale or rancid over time. To extend its shelf life and stabilize its taste, processors hydrogenate the oil. However this process also creates unhealthy trans fats."

"Asoyia is the only brand on the market today that offers all these benefits in one oil: zero trans fats, lower saturated fat, extended fryer life, low transferable taste. Asoyia is also processed from non genetically modified soybeans (non-GMO)."

"Why is being trans fat free so important? Trans fats raise LDL (bad) cholesterol and lower HDL (good) cholesterol. Starting in 2006 the U.S. Food and Drug Administration will require food manufactures to list the amount of trans fats in their products on nutrition labels."

"In extensive tests, Asoyia lasted 25% longer in frying applications than conventional hydrogenated oils. This extended frying life offsets any price differentials. The extended fryer life means less frequent draining, cleaning, and oil changing. As a result you'll use less oil and less labor, decrease fryer down-time, and ultimately increase profits." A photo shows a sample Asoyia label.

To find about the Asoyia organization, click "2006 Growers Program" then click "Asoyia seed brochure" near bottom of page. The 2nd page is titled "Join a growing group of farmers making a real difference. When you grow Asoyia Ultra Low Lin Soybean Seed, you become part of a growing alliance of farmers changing the face of soybean farming." "Asoyia, a farmer-owned company, produces low linolenic soybean oil from these seeds and markets it straight to the consumer." "Asoyia was locally developed. Scientists at Iowa State University spent more than 30 years researching and developing this groundbreaking seed, and the result is an agricultural breakthrough you can take price in."

Now click "Asoyia contract information" to find out about the "2006 Asoyia Low-Lin Soybean Program." The Cargill, Asoyia, and River Valley Cooperative logos span top of page. "Program benefits: (1) 80 cent bushel premium (55 cents paid at time of delivery, 25 cents paid from Asoyia after delivery is complete). (2) Several high yielding non-GMO varieties to select from. (3) No tech fee charged on the seed. (4) Plus potential Asoyia revenue sharing premium in addition to the 80 cents.

"Program details: (1) Acreage contract. (2) Cargill will take all production from Asoyia contracted acres... (4) Grower must pass the non GMO test to receive the 55 cent premium. (5) Grower must adhere to ISO 9000 process standards. GPS coordinates of where beans are planted are required."

Letter (e-mail) from Rich Lineback, Vice President, Sales & Marketing. 2006. July 10. "Asoyia was founded in

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mid-2004. The company grew out of an ISO-certified group of farmers, referred to as the Iowa Quality Agricultural Guild.

"Asoyia is a Limited Liability Company–not a cooperative. We are owned by 25 Iowa farmers. We contract with other growers to grow our Identity-Preserved soybeans. 100% of our farmers are returned to the farmers who grow our soybeans. We sell soybean seed, and the Ultra Low Linolenic Acid soybean oil that is produced from our soybeans. We have an 8-year agreement with Cargill, who currently toll process our oil.

"We started out with genetics developed by Walt Fehr. We continue to work very closely with both the Iowa State University soybean breeding program (under Dr. Fehr), and with the Dairyland Seed Company in Wisconsin." Address: 102 South Locust, Winfield, Iowa 52659. Phone: 319-257-3400.

588. Dow Jones Commodities News Select. 2006. Brazil's major soy crushers, exporters to stop buying beans from recently deforested Amazon land (News release). Sao Paulo, Brazil. 2 p. July 25.

• ***Summary:*** Carlo Lovatelli, president of the Brazilian Vegetable Oils Industry Association (*Abiove*) announced a new industry-wide initiative by major soybean crushing and exporting firms in Brazil. These include Archer Daniels Midland (ADM), Bunge, and Cargill. The companies have agreed to stop buying soybeans from recently deforested land in nine states in Brazil–to help prevent deforestation of the Amazon basin by soy farmers.

Lovatelli said the initiative is effective immediately, but only for newly planted soybean land. In October, soybeans start to be planted in October. Soybeans already planted on deforested land in the states of Para, northern Mato Grosso, Maranhao, etc. are not covered by the initiative.

Lovatelli added that his members take their social and environmental responsibilities seriously. Any farmers who want to deforest the Amazon Basin to plant soybeans "won't have access to our markets." It will take about 2 years to see if the program has any impact on deforestation. Note: The Amazon basin is huge, occupying about half the land in Brazil.

589. Rapoza, Kenneth. Dow Jones Commodities News Select. 2006. Brazil ag group denounces efforts to ban soy grown in Amazon (News release). Sao Paulo, Brazil. 2 p. Aug. 4.

• ***Summary:*** The Agricultural Federation of Mato Grosso (Famato) announced that it opposed a decision made last month by the nation's soy crushers and traders, prohibiting purchases of soybeans grown in recently deforested regions of the Amazon biome. This biome includes the northeast part of Mato Grosso, Brazil's leading soybean producing state.

On July 24, the Brazilian Vegetable Oils Industry Association (Abiove) and the National Association of Grain Exporters (Anec) said their members agreed to no longer buy soybeans from recently deforested land in the Amazon Basin for the next two years.

This decision came after an announcement by McDonald's Corp in Europe to stop buying soy meal for chicken feed made from soybeans in the Amazon. McDonald's said it made the decision following release of a report titled "Eating the Amazon" by Greenpeace International, which placed much of the responsibility for deforestation of the Amazon Basin on McDonald's.

Famato is a 49-year-old association of cattle ranchers, and soy and cotton farmers.

Although soybeans grown in the Amazon Basin make up less than 3% of Brazil's total soybean land, the Amazon Basin states of Para and Rondonia have expanded their soybean acreage, according to the National Commodities Supply Corp. of Brazil's Ministry of Agriculture. Rondonia increased its land planted to soybeans by 17% to 87,200 acres in 2005/06, and Para, a state roughly the size of Texas, increased its soy area by 15.5% to 79,700 hectares.

In May, activists from Greenpeace shut down Cargill's facility at Santarem, on the Amazon River, saying that Cargill was buying soybeans grown illegally in the Amazon Basin.

Note: Geography of Rondonia: "The state has a territory covered mostly by jungle of the Amazon Rainforest, but about three-fifths of the state has been deforested since intensive settlement and logging began in the 1970s, escalating even to this day. A majority of its citizens now live in urban areas" (Source: Wikipedia, at Rondonia, May 2009).

590. McKee, David. 2006. South Asia: Oilseeds and feed. Regional review. Region is second largest market for imported vegetable oil behind the E.U.; India could become a driving force in global soybean demand. *World Grain* 24(8):27-30. Aug.

• ***Summary:*** "The future of India's oilseed crushing industry is closely tied to development of the feed sector and demand for protein meals."

In about 1990 China ceased to be self-sufficient in oilseeds. Shortly thereafter, China created a new and very successful model; it eliminated the tariffs on both imported oilseeds and vegetable oil, then encouraged the oilseed processing sector to build new plants in port cities. This caused cooking oil prices to fall, which stimulated demand. It also led to the production of large amounts of high-protein oilseed meals, especially soybean meal.

A graph shows production and consumption of wheat, rice, and oilseeds in India, Pakistan, and Bangladesh in 2005/06. India, mostly because of its large population, is by far the leader in production and consumption of oilseeds in South Asia.

The major global players in the oilseed industry are

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Bunge, Cargill, and ADM (through its Singapore-based subsidiary, Wilmar Holdings Pte.). They have all bought into or constructed vegetable oil refineries in South Asia, starting in 2003, when Bunge acquired the vegetable oil business of Hindustan Lever. In 2004 Cargill entered a joint venture with a local company and gained control of four refineries. Wilmar, already a leader in soybean crushing in China and palm oil production in Indonesia, has partnered with the Adani Group, one of India's largest companies, to build a refinery in the state of Gujarat (in west India) at Adani's wholly owned port facility at Mundra (near Mumbai, formerly Bombay).

None of these multinationals have invested in oilseed crushing in the region–for three main regions. (1) They refine crude palm oil imported from their own operations in Southeast Asia, and soybean oil from their crushing plants in South America. (2) Indian government policy protects domestic oilseed growers and processors through high import tariffs on oilseeds (30% on soybeans) and vegetable oils (45% on soybean oil and 80% on refined palm oil). (3) They have restrictions on imports of genetically engineered soybeans.

By far the largest oilseed crusher in India or South Asia is Ruchi Soya Industries, Ltd., headquartered in the city of Indore in Madhya Pradesh state. Ruchi is said to have 25% of India's total soybean crush, and its brands are well known nationwide.

Ruchi Soya originated in the 1960s, when its charismatic founder, Mahadev Shahra, visited farmers throughout Madhya Pradesh hoping to convince them to start planting soybeans. This state is now the leading soybean producer in India, accounting for about 70% of the nation's crop. Ruchi Soya now owns and operates nine oilseed crushing plants in India, both at ports and inland. Its crushing plant at Indore is the largest in India, with a capacity of 2,500 tonnes/day. Ruchi's total soybean crushing capacity is 7,500 tonnes/day. Address: Grain industry consultant.

591. Thompson, James. 2006. McVictory. *Corn and Soybean Digest.* Sept. p. 38.
• ***Summary:*** Activists dressed like huge chickens demonstrated in front of McDonald's restaurants in Europe. Their website and signs said that every bite out of a Chicken McNugget was a bite out of the rainforest. Their slogan: "The Amazon: We're trashing it."

The activists said the problem was caused by soybeans. "People cleared the rainforest to grow soybeans to sell to crushers. The crushers sold soybean meal to feed manufacturers, who sold the feed, in turn, to poultry producers. And companies like KFC and McDonald's served up rainforest destruction to unwitting European customers."

First McDonald's Europe told its suppliers not to feed its chickens soybeans grown in the Amazon area. Then ADM, Cargill, Bunge, etc. negotiated a deal with Greenpeace and soybean crushers not to crush soybeans grown in the Amazon ecosystem for two years. The deal only bans soybeans from fields first planted after the agreement was signed. But how will it be policed.

A large color photos shows the activists dressed like huge chickens demonstrating in front of a McDonald's restaurant in Europe. One is holding a sign. Two are reading a newspaper (Poultry Gazette) with the bold headline: "Fowl play at McDonalds! Hundreds of stores invaded by eco-chickens."

Note: Greenpeace has become very skilled at getting media coverage for its low-budget campaigns.

592. *Iowa Soybean Review* (*Iowa Soybean Association, Urbandale, Iowa*). 2006. First U.S. Food for Peace purchase of defatted soy flour leaves Cedar Rapids for African mothers and children. 18(1):16-16. Oct.
• ***Summary:*** Starting in June, 150 metric tons of defatted U.S. soy flour–enough to provide 5 million servings of protein–was flowing into bags emblazoned with the American flag at the Cargill Cedar Rapids facility.

"This massive shipment of defatted soy flour is the first ever purchased under the U.S. Food for Peace Program. It is destined for the West African nation of Burkina Faso, which is 5,000 miles from Iowa. When the soy flour arrived in September, the non-profit organization Africare used it to boost the nutrition of severely malnourished mothers and children at the provincial hospital and a rural health clinic in Zondoma, Burkina Faso. Africare also used some of the defatted soy flour to help people living with HIV/AIDS.

Contains a good discussion with Jim Hershey, director of the World Initiative for Soy in Human Health (WISHH).

A color photo shows three African in their colorful traditional clothing.

593. *SoyaScan Notes.* 2006. Chronology of major soy-related events and trends during 2006 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jan. 17–Soyatech (founded and owned by Peter Golbitz) is sold to HighQuest Partners, a management consulting firm headquartered in Boston, Massachusetts.

March 15-17–CERHR (Center for the Evaluation of Risks to Human Reproduction) expert panel meets in Virginia to discuss soy-based infant formula safety. They issue an important report.

May–The Soy Nutrition Institute is founded. Mark Messina is executive director. The founding members (each of whom paid $10,000 to join) are: ADM, Solae, Cargill, White Wave, Revival, Monsanto, SANA, and the Soyfoods Council (Linda Funk, Iowa).

June 23. Vandemoortele Group, a large oilseed crusher of Ghent and the parent company of Alpro, Belgium, acquires SoFine Foods, a subsidiary of Heuschen & Schrouff and the largest tofu manufacturer in Europe.

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July 15–The National Nutritional Foods Association (NNFA) changes its name to the Natural Products Association (NPA); it hopes to attract more members from the natural foods industry which is not represented by a trade association.

Sept.–*The Soya and Oilseed Bluebook*, published by Soyatech, migrates to the Web. Some bound paper copies will still be published. For the first time in decades, copies are sent free of charge to qualified industry members.

Oct.–House Foods (which owns and operates America's largest tofu plant in Garden Grove, California), opens a huge, brand new tofu manufacturing facility in Somerset, New Jersey. This enables them to deliver fresh, high quality, low cost tofu to the East Coast, Midwest, and Southeast markets.

Dec. 11–Hain Celestial Group (Melville, New York) acquires the assets of Haldane Foods Ltd. (Newport Pagnell, Bucks., UK) and its meat-free and non-dairy beverage business from Archer Daniels Midland Co. (ADM).

This year biofuels, including soy biodiesel, get new recognition for the important part that they can play in the U.S. energy economy.

594. Mescher, Kelly. 2006. Paraffin wax costs are high–Supply is shrinking long term: Soy wax industry sees major boom on the horizon. *Iowa Soybean Review* (*Iowa Soybean Association, Urbandale, Iowa*) 18(2):24. Dec.

• ***Summary:*** "Del Craig, product line manager for Cargill's Naturewax product line, says soy wax is making consistent progress replacing paraffin in the candle industry.

"'Rising prices and interruptions in supply for paraffin makes vegetable based wax that much more of an attractive wax,' Craig says.

"That quickly adds up to a lot of money–especially for candle manufacturers who are using large quantities of wax. Will candle manufacturers soon make the switch to the less expensive vegetable wax?

"'Yes, most major candle manufacturers are working to reformulate parts of their product lines with vegetable wax,' Craig says. 'They have several incentives to change their current formulations. The technical attributes of cleaner burning and greater fragrance holding capacity coupled with being sourced from a renewable resource continues to be important. But now they have a strong economic incentive as well.'

"That means a shift is about to take place in the candle industry in terms of the preferred 'fuel source' for their products.

"'Soy based waxes and the soybean producers and processors who raise and manufacture them are making a positive impact for both U.S. candle manufacturers and consumers,' Craig adds.

"Annett Davidson, director of marketing at Hannas Candles, says they have been using a soy wax blend for about five or six years already. Fragrance oil companies tell Davidson they have seen a trend of other candle manufacturers making the jump to soy. 'We're glad we use soy,' Davidson says. 'Natural wax is a huge trend and I think it's just going to increase for various reasons.'

"Hannas Candles markets their soy blend candles as cleaner burning, less soot, supports America's farmers, and a renewable and natural product.

"Learn more about soy candles and homegrown candle makers in Iowa at www.findsoycandles.com."

A sidebar titled "Soy waxes successfully melting into other industries" adds: "In addition to the candle industry, soy-based waxes are making solid inroads into the corrugated paper and packing industry, says Del Craig, product line manager for Cargill's NatureWax product line. Again, the vegetable based wax is replacing paraffin in various companies' formulas. In the corrugated industry the wax provides added strength to the board and moisture barrier properties. Waxed boxes are used in applications with both direct and indirect food contact in the fresh vegetable, seafood, meat and poultry industries where the products must be refrigerated or packed in ice during storage and transportations."

A color photo shows a honey-colored soy wax candle in a tall glass with a silver-colored lid.

595. **Product Name:** Prolia (Soy Flour), Prosanté (Textured Soy Flour), and Prosanté Plus (Flavored Textured Soy Flour–Oil Enrobed).
Manufacturer's Name: Cargill Soy Protein Solutions.
Manufacturer's Address: Minneapolis, Minnesota. Phone: 866-Soy-Prot.
Date of Introduction: 2006?
Ingredients: Soybeans.
How Stored: Shelf stable.
New Product–Documentation: Talk with Bill Limpert of Cargill Soy Protein Solutions. 2008. June 3. These products are renamed versions of earlier products. They were introduced in about 2005 or 2006. Bill retired in Dec. 2006. Of the flavored products, Cargill makes a simple oil-enrobed product and a more complex product which uses a blend of oil and water for enrobing to give the textured soy a much better flavor, because you can combine flavors, some of which are soluble in oil and others of which are soluble in water. All start from extruded soy flour; not double extruded. A lot of companies do oil enrobing. Cargill makes most of the textured soy products sold by General Mills (Bac-O's) and McCormick. General Mills puts their own flavor system on the base product made by Cargill. A competitor of Cargill in the oil-enrobed soy products is Legacy Foods (Hutchinson, Kansas; they used to be named PMS Foods).

Soy & Health. 2009. June. "Cargill's Prolia™ for use in dairy products." No. 25. p. 6.

596. Barrionuevo, Alexei. 2007. To fortify China, soybean

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harvest grows in Brazil. *New York Times.* April 6. p. A1, C7.
• ***Summary:*** An excellent article on the major changes taking place in world soybean production and trade. For about 3,000 years, China has produced enough soybeans for its own needs. But since about 1995, China has emerged into the world's largest net soybean importer–by far. Three main forces have driven this change: (1) As Chinese workers become more affluent, their appetite for meat increases; therefore more soybeans are needed as animal feed. (2) Fresh water in China has become increasingly scarce. In northern China, where soybeans have traditionally been produced, water tables are dropping at a rate of 3-10 feet/year. "It takes a thousand tons of water to produce one ton of grain," says Lester Brown, president of the Earth Policy Institute, a U.S. environmental research and advocacy group. "So the most efficient way to import water is in the form of grain." (3) China's population, the largest in the world at 1.3 billion people, continues to grow.

Since 2001/02, the USA has been the largest soybean exporter to China. But last year (2005/06), Brazil became China's largest supplier of soybeans; the trade grew 50% over the year before and nearly doubled since 2004. China seeks a long-term, low cost supplier. Brazil still has large amounts of land that could be planted to soybeans, and China hopes to export soybeans directly from Brazil, in its own ships, thereby bypassing the international grain traders such as Cargill, Bunge, and ADM.

But Brazil has drawbacks as a soybean supplier: (1) It has a transportation bottleneck; its infrastructure for transporting the soybeans from field to port in trucks over long (up to 1,000 miles), bumpy, dirt roads, and its congested ports where some ships must wait for up to a month before loading soybeans. (2) Brazil would strongly prefer to export value-added soybean products such as oil and meal rather than raw, unprocessed soybeans. (3) Soybean farmers in Mato Grosso, though producing huge amounts of soybeans, are deeply in debt and losing money, as they become slaves to the big trading companies. (4) The strong Brazilian currency keeps prices high.

Graphs show: (1) The world's net soybean importers (in descending order): China (by far), European Union, rest of the world, Japan, Taiwan, South Korea. (2) World's net soybean exporters (incl. projections to 2007/08): Brazil, USA, Argentina, rest of world. A map shows world soybean trade. China is the leading destination for both U.S. and Brazilian soybeans. A large color photo shows a truck loaded with soybeans near Rondonopolis, Mato Grosso, Brazil.

597. McKee, David. 2007. Focus on Paraguay: Soy complex accounts for 10% of nation's gross domestic product and the biggest share of its exports. *World Grain* 25(6):32, 34-36. June.
• ***Summary:*** Paraguay is a land-locked nation between Brazil and Argentina; it is relatively poor, lightly populated, and pastoral. The expansion in soybean acreage during the past 10 years has been rapid and is still accelerating. In 2007 the country planted 2.4 million hectares of soybeans.

ADM, Bunge, Cargill and Louis Dreyfus each has a major presence in the country, but Cargill is the most important. "Relying on its own network of 40 country elevators and port facilities, the Paraguayan subsidiary Cargill Agropecuaria S.A. originates 1.3 million tonnes of soybeans and grain per year." Although Cargill crushes 65% of the soybeans it originates, most of the beans are exported on barges down the Ria de la Plata to Uruguay, Argentina, or Brazil for "transshipping in ocean vessels."

A bar chart shows Paraguay's soy complex exports (in 1,000 metric tons) from 2000-01 to 2006-07. Soybeans are by far the biggest item exported, followed by soybean meal and soybean oil. Address: Grain industry consultant.

598. *St. Louis Business Journal* (*Missouri*). 2007. Solae acquires Cargill product line. July 11.
• ***Summary:*** Solae announced today that it has completed its purchase of Cargill's Prolisse line of isolated soy proteins (ISP), including the patented membrane technology for processing ISP. Financial terms of the deal were not revealed.

Solae's news release dated July 11 stated: "'The combination of Solae's ISP business and Cargill's Prolisse? product line is a perfect fit,' says Solae President and CEO Tony Arnold. 'We are committed to the soy ingredient industry and this investment will enable us to continue serving customers with quality and reliability.'

"Solae will transition Cargill's products and technology into an existing plant, thus ensuring reliability of supply. Both Solae and Cargill are committed to a smooth transition. Both companies will make every effort to ensure that all customers will continue to be serviced with the current level of commitment without any interruption."

In May 2006 Solae told the *Business Journal* that it had more than 50% of the world market for ISP used as a food ingredient.

Talk with Bill Limpert of Cargill (Protein). 2008. June 2. Solae bought Prolisse then shut it down; Solae never made any Prolisse and apparently did not use the patented membrane technology. They promised in negotiations and in their news release (but not in their contract) to continue serving Cargill's former customers. Cargill began to sense that something was wrong when no Solae engineers showed up at Cargill's plant (a large pilot plant). So guess who got all the criticism from former Cargill customers–Cargill.

599. Debruyne, Ignace. 2007. Global product opportunities: Value creation using soy protein. Paper presented at Unlocking the Value of Soy Protein in Consumer Foods, Guelph Food Technology Centre (GFTC)–Soy 20/20, Brampton, Ontario, Canada. 108 p. Presented 18 Oct. 2007.
• ***Summary:*** Contents: 1. Why consuming soybean foods?:

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Different objectives for different stakeholders, major drivers and objectives–Value creation. 2. Soybeans, soy protein and soyfood market: Soy protein products. soyfood products. 3. Similar markets: EU, USA, Canada. 4. Value creation through innovation and product development: IP [identity preserved] and non-GM supply, soy as a functional ingredient, novel food product applications. 4. Value creation through marketing & communication: Nutrition & health communication. 5. Conclusions. The page titled "Soy processors & supporting services: a vast list of players" [in Canada] (p. 32) includes: Cargill Texturixing Solutions, Concord Sales, Galaxy Foods, Garden Protein International, Guelph Food Technology Centre, Gain Celestial Canada, Hilton Soy Foods, Internova, La Soyarie, Leading Blends, Maple Leaf Foods, N2 Ingredients, Noble Bean, Nutri-Soya foods, Nutritel Food Technologies, Oléangerie, Okanagan's Soya, Ontario Soybean Growers, Parmalat Canada, Prograin, Protenergy Natural Foods, Protex Foods, Roy Legumex, Sol Cuisine, So Soya, Southwest Ag Partners, Soya Dairy, SoyaWorld, Soyfoods Canada, Soylutions, SunOpta, Sunrise Soya Foods, Tayo Foods, Tetra Pak, Thompsons, Tixena Int'l Marketing, White Wave.

Note: This PowerPoint presentation was retrieved from on the Web (May 2008) at http://www.soy2020.ca/pdfs/IgnaceDebruyne -presentation%20.pdf. Address: PhD, Ignace Debruyne & Associates VOF, Haverhuisstraat 28, B-8870 Izegem (Belgium). Phone: +32 51 31 12 74; Mobile: +32 476 46 07 98; Fax +32 51 31 56 75. E-mail: ignace.debruyne@advalvas.be.

600. *SoyaScan Notes.* 2007. Chronology of major soy-related events and trends during 2007 (Overview). Dec. 31. Compiled by William Shurtleff of Soyinfo Center.
• ***Summary:*** Jan. 1–Soyfoods Center changes its name to Soyinfo Center.

Feb.–The Soy Connection for the Food Industry (Vol. 1, No. 1) starts to be published by United Soybean Board as a free e-newsletter. The subject of the first issue is Qualisoy soy oil.

March 6-8 International Soy Utilization conference held in Bangkok, Thailand. It is organized by: The Institute of Nutrition, Mahidol University (INMU), ASA International Marketing (ASA IM), and the Soy Food Forum Southeast Asia (SFF).

April 4–Organizations listed in the Soya & Oilseed Bluebook are invited and enabled to update their own listings online. The update listing will appear as soon as the Bluebook editors review it and in the print edition in the fall. The Bluebook will continue to be printed as a bound book. Preferred customers will receive a free copy. Qualified people or organizations in the industry who request a copy pay shipping and handling. Those outside the industry must pay for shipping and handling plus a $95 fee.

June 11–The Hain Celestial Group completes its acquisition of the tofu and meat-alternatives business of WhiteWave Foods Co., a subsidiary of Dean Foods. The product line includes grilled and baked tofu, seitan, tempeh, etc. These products are expected to complement Hain Celestial's existing meat alternatives under the Yves brand in Canada and the United States. The White Wave tofu business generated sales of approximately $8 million in the last financial year. Dean Foods keeps Silk soymilk.

July 11–Solae announces that it has completed its purchase of Cargill's Prolisse line of isolated soy proteins (ISP; soy protein isolates), including the patented membrane technology for processing ISP.

Aug. 7–SunOpta (incl. SunRich), headquartered in Canada, announces that it has acquired a soymilk plant in Heuvelton, New York, from ProSoya Corporation (Ottawa, Ontario). Allan Routh is president of the SunOpta Grains and Foods Group.

Aug. 16–CPM (Waterloo, Iowa) acquires Crown Iron Works (Minneapolis, Minnesota). CPM is owned by Golbert Global, a private equity group. The acquisition doubles the size of CPM.

Sept. 11–Hain Celestial Group announces it will delay filing its annual report with the U.S. Securities and Exchange Commission (SEC) pending a review of its practices in granting stock options. Thus, the annual report was received by shareholders in April 2008, rather than the typical Nov. 2007.

Nov. 5–Symington's, a major U.K. food manufacturer, has acquired the dry-mix products from Hain Celestial (formerly known as Haldane Foods) for an undisclosed sum. In the purchase of Hain Celestial's dry mix operation, Symington will take over the Barrow based production centre from Hain Celestial and will enable the company to increase its stake in the growing health food and vegetarian sector. Main products in the acquisition are couscous, sport nutrition, snack pots and vegetarian meals. Brands acquired include Granose, Realeat, Direct Foods, Organic and Amazing Grains. Granose was owned by Haldane Foods which also owned Direct Foods and Realeat. So you will also find Sosmix and Burgamix have disappeared as well–but they have returned under the Granose brand. We now have the Granose Sausage Mix, Burger Mix and others that have replaced the Realeat and Direct Foods Sosmix and Banger Mix as well as the Burgamix. Popular products like Nut Roast, Cashew Nut Roast and Chicken Style Bake were discontinued following the sale of the Realeat, Granose and Direct Foods brands.

601. *Iowa Soybean Review* (*Iowa Soybean Association, Urbandale, Iowa*). 2008. Biodiesel: continues to be a large player in renewable fuels initiative. 19(7):16-17. Spring.
• ***Summary:*** "With an estimated 450 million gallons of biodiesel produced in the U.S. last year, biodiesel has an opportunity to play a major role in helping to reduce

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dependency on foreign oil, improve the environment and strengthen the economy. As a leader in the biodiesel industry, Iowa alone has the capability to produce 317.5 million gallons each year.

"'Iowa has the ability to play a major part in renewable fuels,' says Randy Olson, Iowa Biodiesel Board executive director. 'We need to continue our momentum and increase biodiesel consumption through awareness and education to the consumers and the marketplace.'

"Olson leads the Iowa Biodiesel Board (IBB), an organization launched in the summer of 2007 to help promote and represent the interests of Iowa companies and individuals involved in the biodiesel industry. All 14 operating biodiesel plants in Iowa have joined the IBB, making it clear there is significant support for the biodiesel industry in Iowa.

"'It's incredible to have support from all Iowa biodiesel plants, and it really shows they care about the success of the biodiesel industry and the positive impact it has on the environment and Iowa's economy,' Olson says. 'We have a great membership ranging from farmers and truckers to biodiesel plants and distributors. Everyone involved has a vested interested in seeing the biodiesel industry continue to grow both in Iowa and nationally.'

"At the Washington International Renewable Energy Conference in March, President George Bush affirmed the need for renewable fuels and said biodiesel is a major factor in helping to meet the federal renewable fuel standard.

"'Biodiesel is the most promising of these fuels,' Bush says. 'More Americans are beginning to realize the benefits of biodiesel every year.'

"Iowa is not only a leader in the biodiesel industry, but the state is also the nation's largest soybean producer. Soybean farmers have a very important role in the growth of biodiesel, and their support is vital to the success of the industry. If all U.S. on-road diesel fuel contained 2 percent soy biodiesel, it would consume the oil from approximately 500 million bushels of soybeans.

"A soybean checkoff investment first funded the research to develop soy biodiesel, and now that investment is transitioning to focus on educating consumers and increasing awareness and consumption of biodiesel.

"Biodiesel serves as just one of the products soybean checkoff dollars promote to help increase demand. Soybean farmers will continue to see benefits from the growing demand for soybean oil to meet biodiesel production needs. At the National Biodiesel Conference & Expo, industry leaders said they are expecting biodiesel will reach 1 billion gallons a year in the next few years.

"An economic impact study commissioned by the Iowa Soybean Association (ISA) shows that the biodiesel industry will add $655 million to the Iowa gross domestic product in 2008. The report also says biodiesel production will support 3,751 jobs and generate $17.4 million in household income for Iowans. An encouraging number for soybean farmers who are strong advocates for the use of biodiesel.

"John Heisdorffer, a soybean farmer who wears many hats in the biodiesel industry, first became interested in biodiesel while involved with the ISA and serving on the National Biodiesel Board (NBB) as chair of the technical committee. Since then he has been an avid promoter of biodiesel as a consumer, farmer, plant investor / director and NBB member. He has one thing to say to farmers or consumers uncertain about switching to biodiesel.

'Do you want to use a product we get from another country or a product we are producing ourselves at home?' Heisdorffer says. 'There are so many positive environmental impacts when using biodiesel.'

"Nearly 70 percent of Iowa farmers are using biodiesel. The growth is a result of the promotional efforts by the ISA, IBB, United Soybean Board, American Soybean Association, NBB and other organizations to educate consumers. Educational efforts continue on proper cold-weather usage of biodiesel, as this is a concern commonly cited among consumers. Heisdorffer says a lot of farmers use B20 all year round, but farmers can easily cut back to a 2 or 5 percent blend during the winter months.

"The IBB is working to increase the availability of biodiesel, and its legislative efforts include advocating for support of infrastructure programs that increase availability and usage of biodiesel.

"'I still hear every once in a while that farmers are unable to find dealers that carry biodiesel,' Heisdorffer says.

"Agricultural equipment manufactures, such as Caterpillar, Case IH, John Deere and New Holland, are also showing support for and encouraging use of biodiesel.

"'Soy biodiesel has higher fuel lubricity than petroleum diesel and can actually increase engine life,' Olson says. 'Continuing to maintain and improve the fuel quality will ensure that consumers are receiving a high-quality alternative fuel and provide them with proof they are making a smart decision by choosing biodiesel.'

"The benefits of biodiesel continue to improve and grow. The U.S. Department of Agriculture and University of Idaho announced in February that the energy balance increased to 3.5-to-1. This means for every unit of energy needed to produce biodiesel, over its life cycle, there are 3.5 units returned. This is an increase from a study done in 1998 that showed a 3.2-to-1 ratio.

"The biodiesel industry has made remarkable advancements in fuel quality standards in the past year. A study by the National Renewable Energy Laboratory (NREL) shows 90 percent of biodiesel tested met national fuel quality standards.

"'The biodiesel industry will continue moving forward, and we encourage Iowans to support an alternative fuel that provides multiple benefits for the state,' Olson says.

"For more information on the Iowa Biodiesel Board,

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visit www.iowabiodiesel.org.

A sidebar shows:

"Iowa Biodiesel Board Member Plants and Annual Capacity (gallons)

"Ag Processing, Inc., Sergeant Bluff... 30,000,000

"Cargill, Iowa Falls... 37,500,000

"Central Iowa Energy, LLC Newton... 30,000,000

"Nova Biofuels Clinton County, Clinton... 10,000,000

"Freedom Fuels, LLC, Mason City... 30,000,000

"Iowa Renewable Energy, LLC, Washington... 30,000,000

"Renewable Energy Group, Inc., Ralston... 12,000,000

"Riksch Bio Fuels, LLC, Crawfordsville... 10,000,000

"Sioux Biochemical, Inc., Sioux Center... 2,000,000

"Soy Solutions, Milford... 2,000,000

"Tri-City Energy, LLC, Keokuk... 5,000,000

"Western Iowa Energy, LLC, Wall Lake... 30,000,000

"Western Dubuque Biodiesel, LLC Farley... 30,000,000

"East Fork Biodiesel, LLC, Algona... 60,000,00."

602. van Gelder, Jan Wilhelm; Kammeraat, Karen; Kroes, Hassel. 2008. Soy consumption for feed and fuel in the European Union (Web article). The Netherlands: Profundo, Van Duurenlaan 9, 1901 KX Castricum. 22 p. [29 ref]

• ***Summary:*** See also next page. Contents:

Introduction

Chapter 1 Soy for feed in the EU-27

1.1 Soy imports

1.2 Soy meal and soy oil processing

1.3 Soy meal conversion into animal feed

1.4 Consumption of relevant livestock products

1.5 Soy meal needed for EU livestock consumption

1.6 Soybean acreage needed for EU livestock consumption

Chapter 2 Biofuels in the EU-27

2.1 Overview of EU biofuel consumption

2.2 Biodiesel: production, imports and consumption

2.3 Fuel ethanol: production, imports and consumption

2.4 Acreage needed for biofuels

2.5 Projected use of transport fuel and biofuels in 2010 and 2020

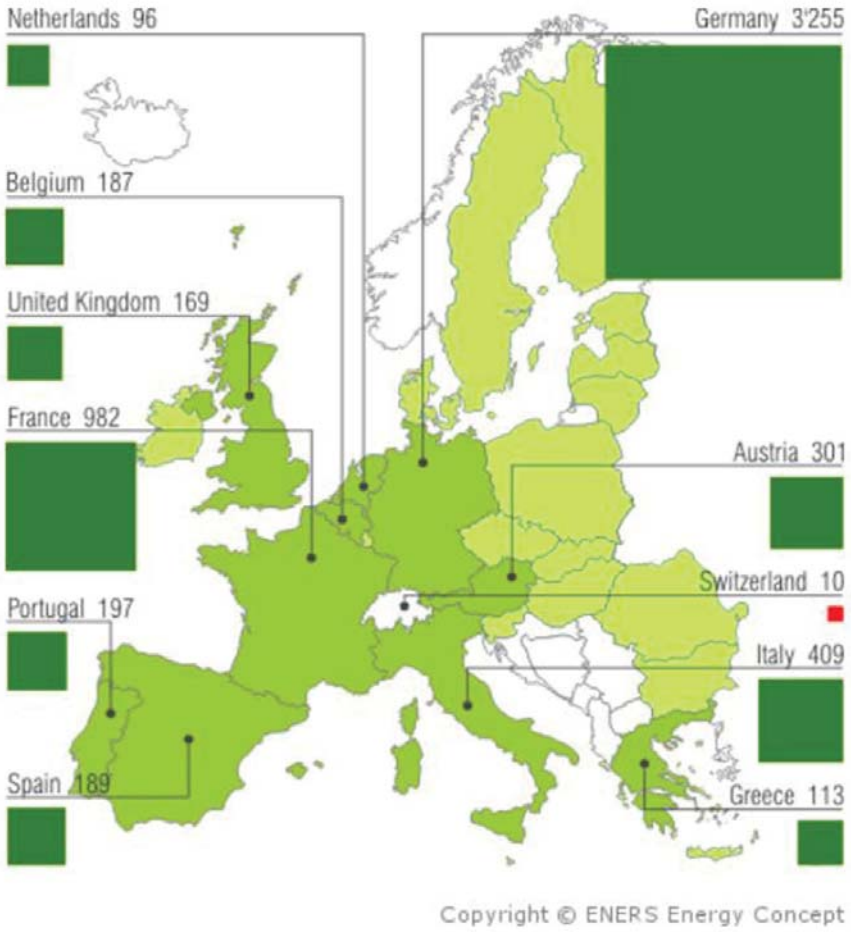
Chapter 3 Total soy consumption in the EU-27

3.1 Total acreage of soybeans needed for EU consumption in 2007

Appendix 1: Conversion of oils and meals into beans

Appendix 2: References.

Concerning biofuels, there is much valuable information. "In Europe, biodiesel is by far the most used biofuel accounting for 75% of total biofuel consumption (see 2.1)."



"In 2007, the EU produced 68% of the biodiesel manufactured worldwide (14).

A good source of information on European biodiesel is European Biodiesel Board (www.ebb-eu.org).

Table 10, "EU-27: Biodiesel production and consumption in 2007." Total biodiesel consumption: 7,742 million liters. Per capita: 15.6 liters. Per diesel vehicle: 73.1 liters.

Table 11, "Main biodiesel producers in Europe in 2007." There are 10 major producers with 23 plants make 3,747,000 tonnes/year.

The top 4 are:

Diester Industries, France, 7 plants make 1,240,000 tonnes/year.

Verbio AG, Germany, 2 plants make 380,000 tonnes/year.

Cargill, Germany, 2 plants make 370,000 tonnes/year.

Biopetrol, Germany, 2 plants make 350,000 tonnes/year.

"In contrast to the United States, where the majority of biodiesel is produced from soybean oil, rapeseed oil forms the major feedstock in the

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Table 12 Feedstock use for biodiesel production in the EU-27 (in 1,000 tonnes)

	2006	2007e	2008e	2009f	2010f
Rapeseed Oil	3,150	3,550	3,700	4,900	5,650
Soybean oil	800	900	900	1,000	1,200
Palm oil	150	400	400	420	450
Sunflower	180	220	300	420	450
Other and not attributed	110	110	100	100	160
Subtotal Vegetable oils	**4,390**	**5,180**	**5,400**	**6,840**	**7,910**
Recycled Vegetable Oil	120	135	230	300	490
Animal Fats	10	35	130	160	200
Grand total	**4,520**	**5,350**	**5,760**	**7,300**	**8,600**

Note: Data for feedstock use is not available. The figures above represent estimates by EU FAS posts.

Source: USDA Foreign Agricultural Service, May 2008 (e = estimate; f = forecast)

EU."

Table 12, "Feedstock used for biodiesel production in the EU-27. In 2007 the oils used were 66% rapeseed oil, 17% soy oil, 7% palm oil and 9% other oils.

Figure 2. Production of biodiesel in the EU in 2007 (million liters). 3.1 shows that the global soybean harvest in 2007 (201.8 million tonnes) after crushing yielded 158.9 million tonnes of soy meal and 37.5 million tonnes of soy oil. That means that soybeans yield 18.6% of soy oil and 78.7% of soy meal. The rest is waste. But because prices are very different, the contribution of soy meal and soy oil to the total value of the global soybean harvest is also different. 158.9 million tonnes of soy meal has a value of US$ 51 billion, while 37.5 million tonnes of soy oil has a value of US$ 33 billion. One can therefore assume that of the total value of a given amount of soybeans, 39% comes from the soy oil and 61% comes from the soy meal. Address: Millieudefensie (Friends of the Earth, Netherlands).

603. Broehl, Wayne G., Jr. 2008. Cargill: From commodities to customers. Hanover, New Hampshire, and London: University Press of New England (Dartmouth College). xiv + 348 p. Illust. Index. Map. 24 cm. [500+* ref]*
• ***Summary:*** This is the third and final book about the history of Cargill. Address: Prof. of the Science of Administration Emeritus, Amos Tuck School of Business Administration, Dartmouth College, New Hampshire.

604. Gregg, Dianne. 2008. The hidden dangers of soy. Denver, Colorado: Outskirts Press, Inc. 141 p. 23 cm. [50+ ref]
• ***Summary:*** This is a "print on demand" book and the only book ever written by this author. Contents: Disclaimer. Dedication (to her husband). Acknowledgments. Introduction. Endorsements. 1. My story. 2. How my soy allergy affected me. 3. Another woman's story. 4. An athlete's story. 5. Soy background. 6. Soybean industry in America (Monsanto, Cargill Foods, Soylife, and many soybean councils). 7. Health claims. 8. Should you avoid soy? 9. Where the soy is hidden. 10. Soy-free recipes (many contain meat, chicken, fish, and shellfish). 11. Allergy info and tips. 12. More testimonials. Campaign for healthy living (this is not an organization but an appeal for readers to contact fast food companies and food processors (whose names and phone numbers are given) to tell them that soybean oil is not a healthy alternative to trans fats).

About the author: The back cover states: "Diane Gregg decided to write this book after developing a severe allergy to soy. She has done extensive research on this subject... The fact of the matter is that soy in not the 'health food' it's cracked up to be. Dianne has been a professional commercial photographer in Atlanta, Georgia... She has been awarded the Golden Web Award, and has been recognized in the *Atlanta Journal and Constitution* as the pioneer in digital photography. She has served on the board of various business organizations..." A color portrait photo shows Dianne Gregg. Address: Atlanta, Georgia.

605. Schneider, Michael. 2008. Major sources, composition and processing. In: Frank D. Gunstone, ed. 2008. Phospholipid Technology and Applications. Bridgwater, England: The Oily Press. xii + 201 p. See p. 21-40, Chap. 2. Illust. 24 cm. Series: Volume 22 in The Oily Press Lipid Library. [38 ref]
• ***Summary:*** Contents: Introduction. Occurrence: Glycerophospholipids, sphingophospholipids. Phospholipid

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processing: Vegetable phospholipids (fluid {crude} lecithins, solvent technologies {membrane degumming, membrane de-oiling, acetone de-oiling, carbon dioxide de-oiling, alcohol fractionation, chromatographic purification}), animal phospholipids (egg phospholipids, milk phospholipids, marine phospholipids, brain phospholipids). Modification of phospholipids: Chemical modification (chemical hydrolysis, acetylation, hydroxylation, hydrogenation). Commercial uses (summarized in tables 2.10 and 2.11).

Figures: 2.1. Model of a biological membrane (from *Scientific American*).

2.2 Structure of diacylglycerophospholipids; X is residue from choline (PC), ethanolamine (PE), inositol (PI), glycerol (PG), water (PA).

2.3 Structure of sphingomyelin.

2.4 Vegetable lecithin processing (including crude soya lecithin, standard lecithin, modification (hydroxylation), acetylation, hydrolysis), fractionation (with acetone, or ethanol), and compounding (using emulsifiers, carriers, or fats and oils).

2.5 Egg yolk phospholipid processing principles (in order to get various products, such as egg yolk powder or yolk lipids).

2.6 Milk fat globule membrane (remarkable complex).

Tables: 2.1 Phospholipid content of biological materials (% of dry matter; soybeans 0.5, sunflower seeds 0.2, rice bran 1, egg yolk 17, salmon roe 8, milk 0.1).

2.2 Main phospholipid classes of commercial interest and their abbreviations: The two main classes are (a) glycerophospholipids and (b) sphingophospholipids. In class (a) are: phosphatidylcholine (PC), phosphatidylethanolamine (PE), phosphatidylserine (PS), phosphatidylinositol (PI), phosphatidylglycerol (PG), diphosphatidylglycerol (DPG). phosphatidic acid (PA), N-Acyl-phosphatidylethanolamine (NAPE). In class (b) are: ceramide phosphocholine (sphingomyelin).

2.3 Phospholipid composition in oil-free polar lipid extracts for commercial raw materials (%). Gives values for soya [soybeans], rapeseed, sunflowerseed, corn, egg, milk, salmon roe. For example, egg is the richest source of PC (74%) whereas soya has the lowest content of PC (22%).

2.4 Main fatty acid composition of phospholipid mixtures (%). Gives values for soya, rapeseed, sunflowerseed, corn, egg, milk, and salmon roe. For example, egg is the richest source of 16:0 (30%) compares with only 20% for soya.

2.5 Composition of commercial fluid soya lecithin (%). It contains 52% of 6 phospholipids, 6% glycolipids, 4% carbohydrates, 38% neutral lipids, and five fatty acids (palmitic acid 18%, stearic acid 5%, oleic acid 11%, linoleic acid 59%, and linolenic acid 7%).

2.6 Typical composition of a commercial de-oiled soybean lecithin (%). It contains 81% phospholipids, 10 glycolipids, etc.

2.7 Alcohol fractionation of soybean lecithin.

2.8 Chromatic systems for phospholipid fractionation / purification.

2.9 Lipid composition of commercial marine phospholipid products (%). Gives values for krill, fish processing by-products, and salmon eggs.

2.10 Commercial phospholipid products and their predominant use. 18 commercial products are listed. The uses are: Food, animal feed, industrial, cosmetics, pharma [pharmaceutical], and dietetics. For example: The main uses / applications of fluid soybean lecithin (oil containing) are animal feed, food, industrial, cosmetics, pharma. and dietetics. By contrast, de-oiled soybean lecithin fractions (PC 50-80%) are food, cosmetics, pharma, and dietetics.

2.11 Major companies employing a range of phospholipid preparations. The companies are: ADM (US), Solae (US), Cargill (Germany), Lipoid (Germany), Phospholipoid (Germany), Chemi (Italy), Lecico (Germany), Tsuji Oil Mill (Japan), Fresenius-Kabi (Sweden), Doosan (Korea), Nippon Oils and Fats (Japan), Biofer (Italy), Avanti Polar (USA), Belvo (Italy), Enzymotec (Israel), Lipogen (Israel), and Neptune (Canada). For each company is given: Website, country, and which of 13 commercial phospholipid products it sells. Address: Lecithos–Functional Lipid Innovation and Consulting, Freinsheim, Germany.

606. Soyatech; HighQuest Partners LLC. 2008. How the global oilseed and grain trade works. Southwest Harbor, Maine; Topsfield, Massachusetts. 80 p. Prepared for United Soybean Board (USB) and U.S. Soybean Export Council (USSEC).

• ***Summary:*** A comprehensive, in-depth overview for both beginners and experts.

Contents: Introduction–History of the Soybean Trade, Modern Uses of Soybeans, Trends and Developments Affecting the Use of Soybeans, Recent Trends in Trade, Overview of Major Origination and Consumption Countries.

Section 1–Competitiveness of Soybeans and Other Oilseeds: Competitive Oilseeds, Protein and Oil Content.

Section 2–Seed Technology: Major Players in Seed Technology (Monsanto, DuPont and Syngenta), Research and Development in Seeds, Relationships with Major Soybean Processors, Persuading Farmers to Use New Seeds, Profits and Premiums, Impact of Traits on Production Techniques and Sustainability, Successes and Barriers to Entry.

Section 3–Production-Growers: World Soybean Growing Regions, Factors That Explain the Ongoing Shift in World Production to Brazil and Argentina, U.S. Soybean Growing Regions, The Grower's Role in the Global Soybean Trade, Planting Decisions, Seeds and Crop Inputs, How and Where Growers Sell Their Crops.

Section 4–Quality: Soybean Quality, Cleaning in Brazil and the U.S., Soybean Meal Quality.

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Section 5–Grain Elevators: Purchasing the Crop, Elevator Marketing Options, How Elevators Sell Their Crops, Blending, Interior Elevators, River Elevators and Export Terminals.

Section 6–Processor Soybean Crusher: How a Soybean Processing Facility Operates, 5 Steps of Hexane Extraction (Handling and Elevator Operations, Preparation and Conditioning, Solvent Extraction and Oil Desolventizing, Flake Desolventizing, Oil Refining), Further Oil Processing, Crush Margin Review, Decision of When to Crush, Selling End Products, Pricing Each Leg of the Soybean Complex, Incidental Input Costs,

Section 7–Transportation Logistics: Transportation, Growers, Elevators, Soybean Processors, International Sales.

Section 8–Risk Management Tools: Risk and Markets, Brief History of Agricultural Futures and Options, Brief Description of Each Financial Instrument, (Futures Options on Futures, Commodity Swaps, Spreads / Straddles), Basis, Chicago Board of Trade Price, Basis Impacting Trade Volumes, Risk Management Tools, How Commodity Funds and Indexes Affect Chicago Board of Trade Prices,

Section 9–End Customers and Users. Soybeans, Soybean Meal and Soybean Oil: First-Tier Customers in Domestic Markets, First-Tier Customers in the International Markets (Soybeans, Soybean Meal, Soybean Oil), Major Grain Trading Companies (ADM, Bunge, Cargill, Louis Dreyfus), How International Sales Work, Competitiveness of U.S. Soybeans and Products, in the Export Market.

Section 10–Conclusions, Trade Flows (Soybeans, Soybean Meal, Soybean Oil), Description of the U.S. as Residual Supplier for International Market, Soybeans and Soybean Products Originated in South America are Cheaper than Those Originated in the U.S., How Can the U.S. Become the Dominant Supplier of Soybeans, Meal and Oil?

Appendix: Countries in Each Region of Trade Matrix, International Trade Flow Chart, World and U.S. Soybean Supply & Demand, 2002/03–2006/07 Tables, Major Import Regions for Global Soybean Supply, Index of Maps, Tables and Graphs.

The Introduction–History of the Soybean Trade begins: "Soybeans have been cultivated in China for over 5,000 years for food and as a source of drugs. In 2853 B.C., the Emperor Shen-nung named soybeans as one of the five sacred plants, with rice, wheat, barley and millet."

Note: What terms does the report use to discuss genetic engineering? The terms "biotechnology" and "biotech" are used a total of 5 times. The term "genetically modified" is used 3 times, but its abbreviation, GMO, is used 33 times. The terms "genetically engineered" or "genetic engineering" are not used at all. Address: Washington, DC.

607. WISHH. 2009. WISHH–World Initiative for Soy in Human Health (Website printout–part). www.wishh.org Retrieved Jan. 29.

• ***Summary:*** Contents: Home. About WISHH: Mission and vision, WISHH Committee, Our supporters / partners, Staff. Global outreach: WISHH has activities in the following countries, listed alphabetically and highlighted in green: Afghanistan, Bangladesh, Botswana, Burkina Faso, Cambodia, Ivory Coast, Ghana, Guatemala, Haiti, Honduras, India, Indonesia, Kenya, Mozambique, Pakistan, Senegal, South Africa, Uganda, Vietnam, Zimbabwe. These countries are shown on a map of the world and each program is described in considerable detail if you click on the name of that country below the map. Another group of countries in the same list, whose names are written in black, are those where WISHH presently has projects but (being very busy and active) has not yet had time to describe that project and add a color photo. They are: Angola, Democratic Republic of the Congo (DRC), Ethiopia, Malawi, Nicaragua, Nigeria, Tajikistan, Tanzania.

Media communications: Press releases, Newsletters, Annual reports, Photo gallery (very interesting). Workshops / Training: International workshops, Washington, DC, workshops, Midwest workshops, Other training. Nutrition library: Nutrition HIV/AIDS overview, WISHH presentations, WISHH papers / publications, WISHH HIV/AIDS activities, HIV/AIDS resources, SoyCow & VitaGoat, Economics of soy. Resources / Links: Soybean organizations and agencies (33), U.S. government and international organizations (13). About soy: Soy products, composition of soy, US soy production, Supplier list. Contact us: The WISHH office is co-located with the American Soybean Association office near St. Louis, Missouri.

"Global outreach: WISHH works with multiple private voluntary organizations and commercial companies in more than 28 different developing countries in Africa, Asia and Central America. Many of these groups are using U.S. high-protein soy to improve diets and health as well as encourage growth of food industries in developing countries."

Supplier list–Suppliers of soy and soy products: ADM, Bunge Milling, Cargill, Inc., CHS (Cenex Harvest States), Soya Kenya (agent for CHS in Kenya), Louis Dreyfus Corp., Nedan Oil Mills (Pty) Ltd. (Afgri Products) (Republic of South Africa), North American Millers' Association, Rab Processors Ltd. (Malawi). Seba Foods (Malawi), The Solae Co., Soy Afric (Kenya), SunOpta Food Group LLC (USA), Zeeland Farm Soya (USA).

SoyCow & VitaGoat: Both are manufactured and supplied by Malnutrition Matters (Frank Daller), 498 Rivershore Crescent, Ottawa, ON, Canada K1J 7Y7. www.malnutrition.org. Details about each low-tech machine are given.

Color photos show: (1) Jim Hershey, executive director of WISHH, with Africans interested in soyfoods in Cote d'Ivoire. (2) Ditto. (3) Handsome boy with soy in Mozambique. (4) Jim Hershey drinking soymilk in Malawi. Address: 12125 Woodcrest Executive Dr., Suite 100, St.

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Louis, Missouri 63141. Phone: (314) 576-1770.

608. Richards, Michael. 2009. Update on work with soywax and candles (Interview). *SoyaScan Notes.* July 27. Conducted by William Shurtleff of Soyinfo Center.
• ***Summary:*** SoyaWax International was established on 26 May 2006 by Michael Richards as a sole proprietorship; this is now his main business and the entity that is commercializing the ISURF license with Iowa State University (ISU).

Concerning this new license: Michael agrees that previous pillar candles were too crumbly, but Candleworks had perfected container filled candles, which were not too soft. The real potential of the new ISU soy wax is in pillar candles, where the cohesion and additional flexibility of the wax will be an advantage–so the candle does not break or crack. Michael's company is now entering into paper coating and box coating industry, where the cohesion and flexibility are very important. He is now negotiating with his first potential customer, a very large container company in California. In addition to pillar candles, and paper and box coating, the new wax will also be used for container filled candles. Michael has been able to make high-quality soy pillar candles for about 15 years, but these are not possible using the stock waxes that are coming out of Cargill. Michael has never produced this wax or these candles in any significant quantity.

Michael has decided to have his own company manufacture and commercialize this new soy wax; he will not ask Cargill to make it for him. He still derives intellectual property payments from Cargill for his earlier soy wax, and these will continue on a separate parallel track for ten more years. He will maintain the continuity of his contract with Cargill under the original Candleworks Inc. business. Soywax has not been Cargill's area of focus; they have so many other priorities. Michael has also received some financial backing to get his new business and manufacturing plant up and running; some is from the state of Iowa (received 11 Aug. 2008; it is primarily to demonstrate new technologies and stimulate private capital) and some is from private investors.

Potentially, Michael is entering into a new phase of his business career. "As a surviving entrepreneur, I have become more and more realistic over the years. I realize that nothing is done until its done. But that is the intent." It is possible that Michael's company may become a really large scale manufacturer of soy wax. "I've gone through very lean times over the past 15 or 20 years, where I've paid the entry fees for participating in this kind of thing."

A key fact is that paraffin, made from petroleum, is gradually becoming scarce. None of the new petroleum refineries make it; only the old ones. As supply decreases, the price will probably increase, opening up new markets and opportunities for soy wax.

Note: In mid-June of this year there terrible floods in Iowa and especially in Cedar Rapids–the worst in recorded history. On June 13, Cedar River crested over 31 feet high. Michael's home and business were destroyed and (like most people in the area) he had no flood insurance. The water stood 12 feet deep in downtown Cedar Rapids. 20,000 pounds of his soy wax and most copies of his latest book on Sustainable Operating Systems were washed away. It took him 18 months to recover from the flood and its utter devastation.

The U.S. wax industry uses about 10 billion pounds each year of both petroleum-based and soy-based wax. Soy is a very small part of that so far. Michael's best estimate of the total amount of soy wax made commercially in the USA is about 10 million pounds–but this is not based on a systematic survey. This soy wax accounts for about one-tenth of 1% of the total 10 billion pounds. The flip side of that number is that there is great potential for growth. "It could be a watershed in the industry if all goes well."

For more information visit www.soyawax.com. Address: Founder and owner, SoyaWax International, 1029 Third St. S.E., Cedar Rapids, Iowa 52401. Phone: 319-213-2051.

609. Wendel, Armin. comp. 2009. Soybean solvent processing plants worldwide in 2006, including those that make lecithin. Germany.
• ***Summary:*** This 4-sheet Excel spreadsheet was compiled by lecithin-expert Armin Wendel in 2009. The 5 columns are: (1) Company name. (2) Country. (3) Area (such as state in USA). (4). City. (5) Lecithin? (Yes/No).

The main companies are ADM, Bunge, Cargill, and Ag Processing Inc. Most companies do not make lecithin, except at one location.

The main countries are USA. Argentina, Brasil [Brazil]. China, Netherlands, Germany, Spain and Italy are also listed. Address: Germany.

610. *Biobased Solutions* (*United Soybean Board–Web*). 2010. Soy-based mattress foam gives petrochemicals a rest. 12(2):4. Jan. www.soynewuses.com. BiobasedSolutions.
• ***Summary:*** "You'll spend about a third of your life lying on your mattress. According to Denver Mattress, one of the largest mattress manufacturers in the United States, you could be spending that time on a mattress that offers benefits for both you and the environment.

"In the quilted top layer of nearly all of its mattresses, Denver Mattress uses between one and three inches of soy-based foam. The foam, called BioFlex™ Hybrid Foam, contains Cargill's BiOH® soy-based polyol. The United Soybean Board (USB) and soybean checkoff provided funding to Pittsburg State University in Kansas to develop the technology that led to BiOH.

"According to Bob Rensink, general manager of Denver Mattress Manufacturing, the BioFlex high-density

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foam used by Denver Mattress achieves a perfect balance between biobased content and performance. According to it's manufacturer, Flexible Foam Products, Inc., BioFlex boasts equal, if not better, performance in several standard measurements for furniture-grade foams, including support factor ratio; tensile, tear and elongation strength; height loss; and indentation force deflection, compared with petrochemical-based foams.

"'The higher the density, the longer lasting it is,' says Rensink. 'And we use a higher density than most of our competitors, giving us a product that maintains its height, strength and firmness.' BioFlex, with at least 20 percent biocontent, represents one more product in which manufacturers have replaced imported fossil fuels with renewable U.S. soy. Compared with conventional petrochemical-based foams, BioFlex requires 61 percent less nonrenewable energy, leads to 36 percent less global warming emissions and will save more than 50,000 barrels of oil per year, according to a third-party life-cycle analysis.

"'According to surveys, the American public will buy green as long as the product offers equal quality and price,' says Michael Crowell, vice president of marketing for Flexible Foam Products. 'BioFlex offers at least as high a quality as other mattresses, and we have never charged a premium for any of our soy foams.'"

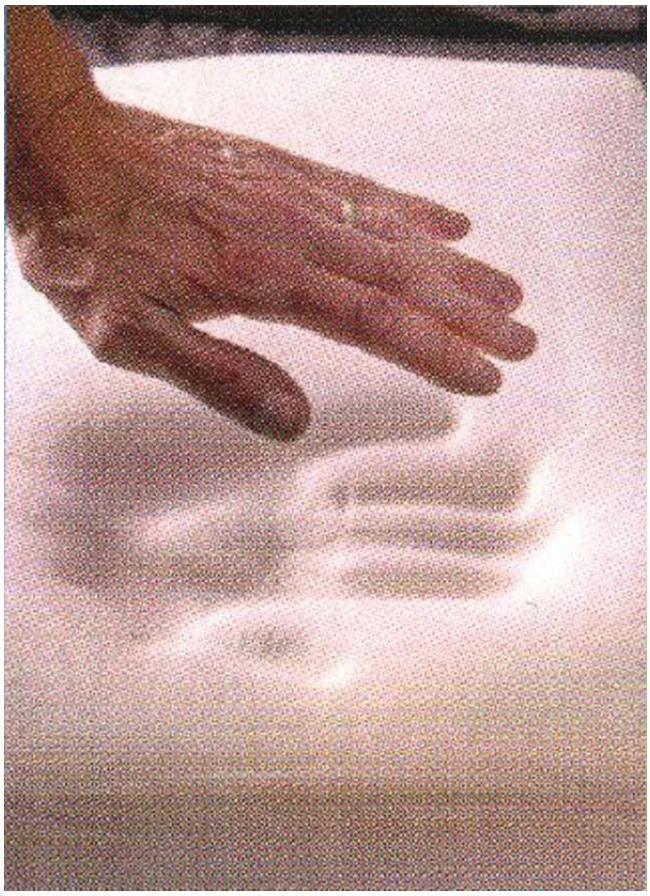
"Denver Mattress, a Furniture Row company, manufactures its mattresses in the United States and sells them directly through its nationwide chain of retail stores, which it says helps keeps prices low."

611. Bainbridge, Lewis. 2010. More than 30 nationally recognized furniture companies turn to soy-based foam: soybean oil adds green comfort to sofas, mattresses and more. *Iowa Soybean Review* (*Iowa Soybean Association, Ankeny, Iowa*) 21(5):10-12. Feb.

• ***Summary:*** Editor's introduction: "Demonstrating its commitment to developing new industrial and consumer products containing soy, the United Soybean Board (USB) recently released its annual list of soy-based products that the soybean checkoff helped introduce this year. Thanks, in part, to support from the soybean checkoff, 26 new soy-based products hit the market in 2009.

"'It is certainly amazing to see the number of new soy products that come to market year after year with help from the soybean checkoff,' says USB director, Lewis Bainbridge from Ethan, South Dakota. 'The checkoff funds new uses research to increase industrial demand for U.S. soybeans. Supporting research on the next generation soy products, the checkoff's New Uses program mission is to help increase profits for U.S. soybean farmers.'

"Statistics show the checkoff's efforts to expand industrial demand for soybean oil work. By 2010, industrial use of soybean oil is expected to use between 1.15 and 1.35 billion pounds, or the oil from nearly 120 million bushels.



That's up from 80 million bushels used in 2008.

"Over the past few years, a quiet transformation has begun to take shape within the furniture industry. Most people probably don't realize the cushions in their favorite chair, sofa or ottoman, and the foam in their mattress, contain petroleum. The good news is that more and more furniture manufacturers are replacing that petroleum with the environmentally friendly alternative-foam made from soybean oil.

"In an effort to lessen reliance on foreign oil, companies are increasingly using soy-based foam in furniture cushions and mattresses. Soy-based foam provides the same quality, comfort and durability as petroleum-based foam, with the added benefits of being made from a renewable resource and better for the environment.

"Cargill and Dow, two of the primary manufacturers of soy-based polyols, supply the foam to manufacturers who produce the soy cushions. Cargill began development of its BiOH® polyols in 2003 with Hickory Springs Manufacturing Company, one of the largest foam producers in the U.S. By 2006, Hickory Springs produced the first soy-based foam (Preserve™) for furniture and bedding.

"The United Soybean Board (USB) New Uses Committee funded several years of soy polyols research at the Kansas Polymer Research Center at Pittsburg State University. Cargill licensed the research and trademarked it

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as BiOH®. USB also funded initial work with Dow, which developed RENUVA™ Renewable Resource Technology.

"The foam manufacturing process involves a reaction between petroleum-based polyols and other petro chemicals. Soy polyols can be substituted for a portion of petroleum polyols. Currently, polyols are available with soy content ranging from 30 to 50 percent. Finished products using these polyols vary in soy content depending on the type of applications.

"'According to Hickory Springs National Foam Marketing Manager Brad McNeely, the industry is working to increase that percentage and hopes to reach 100 percent use of the soy polyols or about 67 percent bio-content in finished foam in the future. The key will be to increase the soy content without compromising the products according to McNeely.'

"In 2006, Lee Industries, Inc., a family owned furniture company based in Newton, Minnesota, was one of the first furniture companies to use soy-based foam. In business since 1969, Lee was at the forefront of the environmental movement well before it became standard practice and in the early '80s made a commitment to protect the environment through the sustainable manufacture of earth-friendly products. The company now uses the foam for all of its seat cushions and arm padding. 'With this soy-based foam, we have taken steps to reduce our overall environmental footprint,' says Lee Industries Inc. Image & Branding Director, Tonya Fischer. 'The response from our dealers and customers has been extremely positive.'

"Mattress companies have also embraced soy-based foam. In the summer of 2008, Martha Stewart Living unveiled The Good Bed, which uses soy-based foam in its new line of mattresses. 'The soy-based product performs well and is more environmentally friendly,' says Dean Thompson, vice president of marketing for Martha Stewart The Good Bed. Several other mattress companies are using soy-based foam as well (see list).

"Home furnishings leader Crate & Barrel uses soy-based foam in the majority of its upholstered products. 'We have taken the important step of minimizing petroleum-based foam in many of our upholstery cushions with more energy-efficient alternatives, such as soy or plant-based foam and fibers, without sacrificing an ounce of the quality or comfort that our furnishings are known for,' says William Doherty, assistant upholstery buyer, Crate and Barrel. 'In addition, many of our upholstery frames incorporate recycled metal components and soy-based resins for bonding. And while green improvements are typically associated with higher costs, we are bringing these upgrades to our customers without added expense.'

"Industry experts point to the environmental benefits of soy-based foam and predict that its use will continue to grow. According to Cargill's preliminary life-cycle analysis, the manufacturing process of BiOH polyols results in a 61 percent reduction in non-renewable energy use and a 36 percent reduction in greenhouse gas emissions. Additionally, it found that every million pounds of petroleum-based polyols replaced with BiOH polyols, saves nearly 2,200 barrels of oil.

"Further, a life-cycle analysis conducted by Dow, which developed RENUVA™ Renewable Resource Technology, shows that its technology uses 60 percent fewer fossil fuel resources than the conventional polyols technology.

"The following is a list of furniture companies that use soy-based cushioning in one or more of their products:" The name and website of 37 companies is given.

"Companies that manufacture soy-based foam:" The name and website of 6 companies is given.

Photos show: (1) A portrait of Lewis Bainbridge. (2) Two armchairs in the foreground of a large field of green soybeans growing in neat rows. (3) A couch, pillows and armchair in a living room. (4) The impression of a hand in foam.

612. Lemke, Dan. 2010. Elsewhere in ag innovations: Comfortable soy seats. *Ag Innovation News* (*AURI–Agricultural Utilization Research Inst., Waseca, Minnesota*) 19(2):10. April/June.

• ***Summary:*** From: Biobasednews.com. Nov. 30, 2009. "Travelers visiting some of the world's largest and busiest airports may rest their weary bones on beans. Arconas, a global leader in airport seating, has started installing seats made with Cargill's soy-based polyols. Soy foam is already widely used in residential furniture, but is just being introduced in airports such as Dallas / Fort Worth [Texas], Boston's Logan [Massachusetts], and Lisbon International Airport" [Portugal].

613. Schneider, Mindi. 2011. Feeding China's pigs: implications for the environment, China's smallholder farmers and food security. https://www.iatp.org/documents/feeding-china%E2%80%99s-pigs-implications-for-the-environment-china%E2%80%99s-smallholder-farmers-and-food 6 p. May 17.

• ***Summary:*** "Executive summary: Starting in 1979, pork became the most produced and consumed meat in the world. The reason for its ascent to the top of the global meat heap is simple: China. In 2010 alone, farmers and companies in China produced more than 50 million metric tons of pork, virtually all of which was sold and consumed domestically. This Chinese pork boom, which today accounts for half of all the pork in the world, is the result of a set of policies and trade agreements that liberalized and industrialized Chinese agriculture and enabled enormous production increases.

"In the quest to feed 21 percent of the world's population on nine percent of its arable land, Chinese central authorities prioritize ensuring a steady supply of low-priced pork as an important component of food security (China

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maintains a strategic pork reserve, the only one of its kind in the world)..."

"Soybean imports are keeping the swine industry in China afloat. In order to overcome the limitations of domestic production for feeding millions of pigs, authorities enacted a series of measures to liberalize China's soy trade, including those required by World Trade Organization (WTO) accession protocols, starting in the early 1990s. Imports quickly overtook both soy exports and domestic production, and today, China is the world's leading soybean importer. In 2010, more than 50 million metric tons of soybeans came into China, mostly from the United States and Brazil. These imported beans accounted for 73 percent of soy consumption in China, and were used exclusively in the production of soybean meal for livestock feed and soy oil for cooking (meal and oil are coproducts in the soy crushing process). In stark contrast to the pork industry, which a handful of domestic companies dominate, transnational agribusiness firms including Archer Daniels Midland, Bunge, Cargill, Louis Dreyfus (together, ABCD) and Wilmar own about 70 percent of the soybean crushing industry in China. In recent years, China has enacted measures to cool the dominance of foreign firms in support of domestic operations. Whether or not these moves will be effective remains to be seen.

"Soy is particularly important in commercial pig feed mixes, but for smallholder and specialized household farmers, corn is the most used feedstuff..." Address: Minneapolis.

614. INTSOY. 2012. 2012 INTSOY Processing and marketing soybeans for meat, dairy, baking and snack applications, June 3-8: A unique opportunity to gain hands-on experience & practical knowledge about soybeans (Leaflet). Urbana, Illinois. 9 panels. Each panel: 28. Single sided. Black and white.

• ***Summary:*** This printout of an e-mail announces a 5-day course ($1,500 for 1 attendee). The program now has 26 corporate sponsors (listed alphabetically with the logo of each): ADM, Clarkson Grain, Clextral Group, Crown, Devansoy, French [Oil Mill Machinery Co.], General Mills, Harvest Innovations, House Foods America Corporation, Illinois Soybean Association, Insta-Pro, NEI–Natural Enrichment Industries, NPI–Natural Products, Inc. ProSoya. SavInd (formerly Bar N.A.). Silk, The Solae Co., Soyatech, Soyfoods Association of North America. Soyjoy. SunOpta. United Soybean Board. USSEC. Wenger. WISHH. World Soy Foundation.

Course highlights. Who should attend? Course schedule (preliminary agenda). Sponsors. Address: National Soybean Research Lab. (NSRL), 1101 W. Peabody Dr., Urbana, Illinois 61801. Phone: (217) 244-1706.

615. Shurtleff, William. 2012. The global value chain for soybeans (Editorial). *SoyaScan Notes.* June 12.

• ***Summary:*** "The value chain is a concept from business management that was first described and popularized by Michael Porter in his 1985 best-seller, *Competitive Advantage: Creating and Sustaining Superior Performance."* The value chain concept can be applied at various levels of activity, such as a worldwide level, an industry-wide level in a particular country, or at the level of a particular company operating in a specific industry. The key links in a value chain are those points at which value is added to products. Quantitative data are necessary to analyze the amount of value added (Source: Wikipedia at value chain, June 2012).

In the global soybean chain we have identified four major links or points: (1) Soybean production: This is highly fragmented, with hundreds of thousands of farmers, both large and small, growing soybeans. However some of those farmers are organized into groups, often cooperatives (such as AGP in the United States).

(2) Crushing and other soybean processing. Crushing soybeans to make crude soy oil and defatted soybean meal is the main way that soybeans are processed. However in East Asia, whole soybeans are also processed into human foods, such as tofu, miso, soymilk, tempeh, etc. Large soybean crushers which operate worldwide include Cargill, ADM, Bunge, AGP, Sanbra (Brazil), etc. Defatted soybean meal is further processed to make animal feeds, soy sauce, etc. Crude soy oil is further refined to make edible vegetable oil biodiesel, etc.

(3) Transportation / distribution of soybeans and/or soybean products. Major firms (which are vertically integrated) include Cargill, ADM, Bunge, Dreyfus, the Noble Group of Hong Kong, etc.

(4) End use / retail: The main end uses for soybeans are: From whole soybeans–human foods, often divided into four types: (a) Traditional East Asian fermented soyfoods, such as miso, tempeh, natto and its relatives. The largest makers are miso makers and natto makers in Japan. (b) Traditional East Asian non-fermented soyfoods, such as tofu, soymilk, edamame, roasted soy flour, yuba. The largest makers are tofu makers and soymilk makers in Japan, Hong Kong, and USA. From defatted soybean meal: animal feeds, soy sauce, modern Western soy protein ingredients: textured soy flour / textured vegetable protein (TVP in ad ADM trademark), soy protein concentrates, textured soy protein concentrates, soy protein isolates, and textured soy protein isolates. The largest makers of animal feeds are the same as the major soybean crushers: Cargill, ADM, Bunge, etc. From crude soybean oil: Refined soybean oil and biodiesel. The largest refiners of soybean oil are the major soybean crushers. From refined soybean oil: Edible vegetable oil, salad dressings, margarine, etc. Address: Founder and owner, Soyinfo Center, Lafayette, California. Phone: 925-283-2991.

616. Saunders, David. 2012. What ever happened to the

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Soy Protein Council? (Interview). *SoyaScan Notes.* Dec. 13. Conducted by William Shurtleff of Soyinfo Center.
• ***Summary:*** The Soy Protein Council (established in 1971 as the Food Protein Council) dissolved in the first quarter of 2003 after one of the three member companies stopped paying their dues / management fees it owed. The three member companies at the start of 2006 were ADM, Cargill, and Central Soya (which later became Solait). Hauck & Associates had managed the company from Sept. 1975 until it dissolved. He has no articles about the dissolution; all of their records are gone. The same thing happened to the auto industry when one of its three members left.

Note: Hauck & Associates is an Association Management Company (AMC), established in 1974, with headquarters at Headquarters: 1025 Thomas Jefferson Street, NW, Suite 500 East, Washington, DC 20007. Address: Former President, Soy Protein Council, Hauck & Associates, Inc., Washington, DC. Phone: 202-452-8100.

617. INTSOY. 2013. 2013 INTSOY Short Course: Processing and marketing soybeans for meat, dairy, baking and snack applications, June 2-7: A unique opportunity to gain hands-on experience & practical knowledge about soybeans (Leaflet). Urbana, Illinois. 8 panels + 1 panel insert Each panel: 23 x 15.1 cm. Front and back. Glossy color.
• ***Summary:*** Announces a 5-day course ($1,500 for 1 attendee). The program now has 24 corporate sponsors (listed alphabetically with the logo of each): ADM, Clarkson Grain, Clextral Group, Crown, Devansoy, French [Oil Mill Machinery Co.], Harvest Innovations, House Foods America Corporation, Illinois Soybean Association, Insta-Pro, Kays Naturals, NEI–Natural Enrichment Industries, NPI–Natural Products, Inc. ProSoya. SavInd (formerly Bar N.A.). The Solae Co., Soyatech, Soyfoods Association of North America. SunOpta. United Soybean Board. USSEC. Wenger. WISHH. World Soy Foundation.

Course highlights. Who should attend? Course schedule (preliminary agenda). Sponsors. Address: National Soybean Research Lab. (NSRL), 1101 W. Peabody Dr., Urbana, Illinois 61801. Phone: (217) 244-1706.

618. NSRL. 2014. 2014 NSRL INTSOY Short Course: Processing and marketing soybeans for meat, dairy, baking and snack applications, June 1-6. 2014: A unique opportunity to gain hands-on experience & practical knowledge about soybeans (Leaflet). Urbana, Illinois. 8 panels + 1 panel insert Each panel: 23 x 15.1 cm. Front and back. Glossy color.
• ***Summary:*** See next page. Announces a 5-day course ($1,800 for 1 attendee). The program now has 21 corporate sponsors (listed alphabetically with the logo of each): ADM, Clarkson Grain, Clextral Group, Crown, Devansoy, DuPont, Harvest Innovations, House Foods America Corporation, Illinois Soybean Association, Insta-Pro, Kays Naturals, Monsanto, NPI–Natural Products, Inc. ProSoya, Soyfoods Association of North America. SunOpta. TechnoChem, United Soybean Board. USSEC. Wenger. WISHH, World Soy Foundation.

Course highlights. Who should attend? Course schedule (preliminary agenda). Sponsors. Address: National Soybean Research Lab. (NSRL), 1101 W. Peabody Dr., Urbana, Illinois 61801. Phone: (217) 244-1706 www.nsrl.illinois.edu.

619. African Center for Economic Transformation (ACET). 2014. The soybean agri-processing opportunity in Africa. Accra, Ghana: ACET. 42 p. 28 cm. http://www.tropicalsoybean.com/sites/default/files/The%20Soybean%20Agri-Processing%20Opportunity%20in%20Africa_ACET.pdf [21 ref]
• ***Summary:*** Contents: "1. Executive Summary: Overview of the Soybean Value Chain and Africa's Positioning, Opportunities and Challenges for Developing the African Soybean Sector, Implications and Next Steps for Policy-Makers

"2. Overview of the Soybean Value Chain: The Value Chain–From Soybean to the Final Consumer Product, The Structure of the Soybean Industry, A Review of Selected Key Players (ADM, Cargill, Bunge, Louis Dreyfus).

"3. The International Soybean Market: Soybean Production, Soybean Processing, Prices, Outlook for the Soybean Market.

"4. The African Market: The Structure of the African Market Nigeria: Africa's Leading Soybean Producer, Zambia: a 'Mid-Sized' Soybean Producer and Processor, Senegal: An Example Cake Consumption Market.

"5. The Value Capture Opportunity: Challenges and Barriers, Key Opportunities for Value Capture for African Countries.

"6. Brazil: a Case Study of the Key Success Factors for Value Capture in the Soybean Industry. Background: Converting Soybean into Poultry Exports, Implications: Key Success Factors for Value Capture.

"7. Positioning of African Countries for Successful Value Capture.

"8. Considerations and Steps Required to Develop Policy:

"A–Identify and Prioritize Opportunities for Value Capture,

"B–Identify Current Policy Bottlenecks,

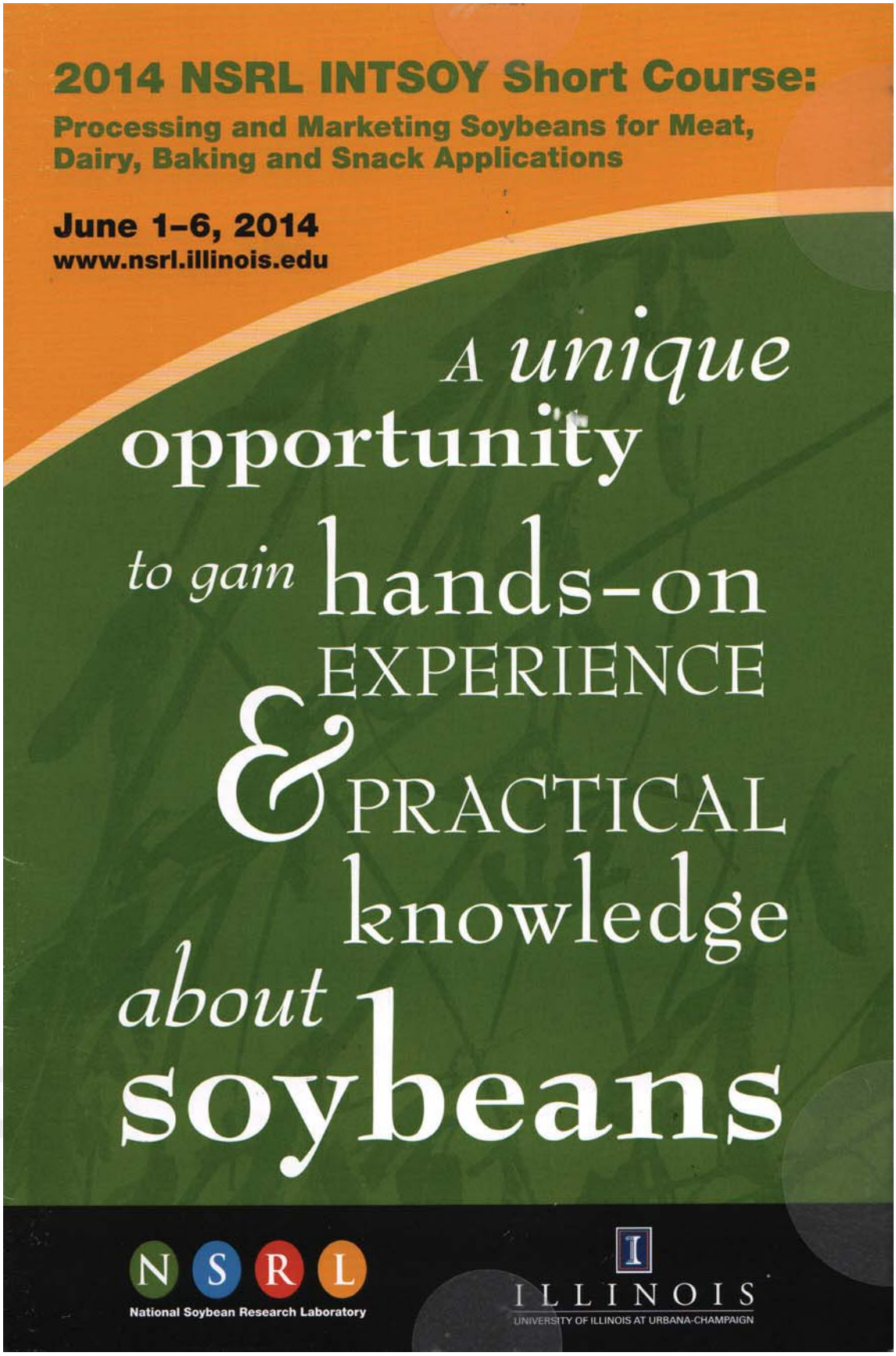
"C–Develop Key Enabling Interventions,

"D–Address Potential Policy Trade-offs.

Table of 24 figures.

Pages 9-10: Archer Daniels Midland (ADM): ADM is a conglomerate headquartered in the US with interests across a broad portfolio of agriculture and agro-processing sectors, and activities including producing, procuring, transporting, storing, processing, and merchandising agricultural commodities and products. It operates more than 270 plants in 60 countries across its portfolio of agricultural

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commodities world-wide and generated $61.7bn in revenues in 2010.

"the US, ADM is responsible for 31% of total soybean processing volumes. It has 23 crushing facilities and 13 oilseed refineries in the country. In 2006 ADM's plants accounted for 30% of US soybean oil production capacity. In Brazil, ADM is the 3rd largest producer of soybeans accounting for 7% of the total produce. Currently ADM's Africa activities focus on cocoa processing in Cameroon, Côte d'Ivoire and Ghana and the company lacks any significant soybean production or processing assets in the region.

"Across the value chain, ADM activities include production, processing and trading of soybean and its products, through its "Oilseeds Processing" and "Agricultural Services" divisions.

"Oilseeds Processing: Includes activities related to the production, crushing and further processing of soybeans. The processed products are then produced and marketed as ingredients for the food, feed and energy industry. It has made substantial investments in technology, and ADM currently claims to operate the most modern soy processing system in the US, capable of leaving only 1% oil in the soy meal with the rest being extracted and available for further refining

"Agricultural Services: The company has an extensive grain elevator and transportation network, used for buying, storing and transporting soybean and other agricultural commodities and their resale as food and feed ingredients and raw materials for the agricultural processing industry. ADM operates 330 silos in the US, South Africa, Canada, Brazil and other major agricultural regions.

"Beyond core soybean products, ADM operates one of the world's largest `soy isoflavone' facilities under the brand name of Novasoy. Isoflavones are a unique group of compounds found in soybeans, which share some of the physiological properties of the hormone estrogen, and are used as a dietary supplement.

"Key recent investments include a 50% share in Edible Oils Limited of the UK to procure, package, and sell edible oils in the UK. It also has a 50% share in Stratas Foods in Memphis, US to procure, package and sell edible oils in North America. It has an 80% interest in Toepfer in Germany, which is a global merchandiser of agricultural commodities and processed products.

"Cargill: Cargill is a multinational corporation based in Minnesota in the USA, and is an international producer and marketer of food, agricultural, financial and industrial products and services. Cargill's overall business operations include purchasing, processing and distributing grain and agricultural commodities, the manufacture and sale of livestock feed and ingredients for processed foods and pharmaceuticals. Founded in 1865 it has operations in 65 countries today and recorded revenue of $107.9 billion in 2010. It is responsible for 25% of all US grain exports.

"Cargill is a global purchaser, producer and trader of soybean. The company has evolved from trading soybeans, to processing them into meal and oil, to producing high-value natural vitamin E from a soybean byproduct. Cargill has a substantial footprint in the key soybean production markets of the US, Brazil and Argentina. In the US Cargill processes 21% of the available soybean on the market, and accounted for 22% and 13% of soybean oil production in the US and Argentina respectively in 2006, and accounted for 7% of the total soybean crush in Argentina. In Brazil, Cargill has 11% share of total soybean production. Cargill also has substantial presence in some smaller production markets: for example, Cargill has approximately 40% share of total soybean production in Paraguay.

"Although Cargill has a substantial presence in Africa that covers 12 countries including Ghana, Kenya, South Africa, Tanzania and Zambia, these activities do not currently include soybean production or processing.

"It has partnered with the Bill & Melinda Gates Foundation for the South African Soy Value Chain Program being conducted in Zambia and Mozambique. This program will target smallholder farmers and facilitate their access to agricultural inputs and new technologies, facilitate market access, and assist in infrastructure development. This will introduce soya production to 37,000 farmers across the two countries.

"Key recent investments include a $20 million port terminal in Santarem in Brazil's northern state of Para in 2003, with the capacity to store 60,000 metric tons of soybeans, and expected throughput of 800,000 metric tons per year. In 2006, Cargill made a significant entry into the Chinese processing sector through a $60 million investment in a soybean crushing plant with a 5,000 ton per day capacity. More recently, in 2010 Cargill invested $112 million in an 18MW co-generation plant and a soybean biodiesel production plant with a processing capacity of 240,000 tons per year in Argentina.

Bunge: Founded in 1818 in the Netherlands, Bunge is a leading multinational agribusiness and food company with operations in 30 countries, and net sales of $41.9bn in 2009. It is a leading grain producer and is also involved in processing and grain trading. Bunge is the world's largest oilseed producer, with operations across the entire value chain from oilseed cultivation to distribution to retailers and farmers.

"It has three business segments involved at different points across the value chain:

"Grain and Oilseed origination: Sources soybeans, stores and blends them and sells the final product to commodity customers. Bunge trades the resulting aggregated soybeans to over 80 countries.

"Oilseed processing: Produces soybean meal, soybean crude oil, soybean hulls and hull pellets, and is capable of

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producing GM-free soy products to cater to markets like the EU. It operates over 50 processing facilities across North America, South America, Europe and Asia. Bunge is a major supplier to the Caribbean, Asia, North Africa and the Middle East.

"International marketing: Focused on the sale of soybean and its processed products to worldwide customers, management of logistics and price risk.

"Bunge has soybean production and processing activities in all the major producer markets: in the US it accounts for 14% of soybean processing, and 15% of production, in Argentina, for 7% of processing and 9% of production, and is the leading producer of soybean in Brazil, with 18% share of volumes.

"In 2009, Bunge built a new $76m soy processing plant in Brazil with crushing capacity of 1.3 million tons a year. Bunge has also made significant investments in Vietnam, including $100m toward an integrated soybean processing plant with 3000 tons per day capacity, scheduled to start production in 2011. Bunge also has a 50% stake in a Vietnamese port operator of Phu My Port.

"To date, Bunge does not have a significant presence in the Sub-Saharan Africa oilseeds sector, but in April 2011 it announced a joint venture with Senwes, a South African agribusiness company, to develop grains and oilseed operations in the country as a base for trading in the Sub-Saharan Africa region." Address: Accra, Ghana.

620. Markets and Markets, 2014. Lecithin market worth 1.11 billion U.S. dollars by 2020 (News release). Pune, Maharashtra 411013, India. 162 p.

• ***Summary:*** "The report 'Lecithin and Phospholipids Market by Lecithin Type, by Source (Soy, Sunflower, Egg and Others), by Application (Food, Nutrition & Supplements, Feed, Pharmaceuticals and Others) & Region–Global Trends and Forecasts to 2020', analyzes the lecithin & phospholipids market, which is segmented based on the type, application, source, and region. The lecithin & phospholipids market, based on source, includes soy, sunflower, egg, and others. The market, based on application, is segmented into food, nutrition & supplements, feed, pharmaceuticals, and others. The report includes the driving and restraining factors of the market with detailed analyses of opportunities and challenges. The market has been segmented on the basis of the key regions–North America, Europe, Asia-Pacific, and the Rest of the World (RoW). The size of the markets in the key countries has also been covered and projected for each region.

"Browse 65 market data Tables and 62 Figures spread through 162 Pages and in-depth TOC [Table of Contents] on 'Lecithin and Phospholipids Market by Lecithin Type, by Source (Soy, Sunflower, Egg and Others), by Application (Food, Nutrition & Supplements, Feed, Pharmaceuticals and Others) & Region–Global Trends and Forecasts to 2020.'

A link is given.

"The lecithin market was valued at USD 784.5 Million in 2014 and is projected to grow at a CAGR [compound annual growth rate] of 5.9% from 2015 to 2020. The food segment in the lecithin market is projected to reach a value of 177.37 million tons by 2020. The nutrition & supplement segment dominated the phospholipids market. The driving factors of the lecithin & phospholipids market are increase in the applications of lecithin & phospholipids such as animal feed, pharmaceuticals, and food; growing demand for natural sources of ingredients; increasing consumer awareness and health concerns; and rise in consumption of convenience foods.

"With the increase in per capita income, the expenditure on convenience foods and healthcare products has increased, which has resulted in an increase in the demand for lecithin & phospholipids. These factors provide opportunities for emerging market players. Fluctuating prices of raw materials is the major restraining factor for the market.

"The global lecithin & phospholipids market is segmented on basis of application. The applications considered for this research are food, nutrition & supplements, feed, pharmaceuticals, and others. Sources of lecithin & phospholipids are also classified in the segmentation. By source, the soy segment in the phospholipids market accounted for a share of 73.6% in 2014 and is projected to reach a volume of 3536.2 KT [kilotons = 1,000 tons]. The market for lecithin is projected to reach USD 1.11 billion by 2020 at a CAGR of 5.9% from 2015 to 2020, in terms of value. The Asia-Pacific region is estimated to be the largest market for lecithin & phospholipids, in terms of both, value and volume, in 2015. In the lecithin market, the Asia-Pacific region is projected to be the fastest-growing market at a CAGR of 5.9%, in terms of value, during the review period. This growth is mainly driven by the growing food, feed, and healthcare industries, particularly in developing countries such as India, China, and Latin American countries. The key players of the lecithin & phospholipids market are undertaking strategic decisions of new product developments, expansions, and investments to maintain their position in the market. They are involved in the research & development of various innovative enzyme products to attain a majority market share. The key players in this market are Cargill Incorporated (U.S.), Archer Daniels Midland Company (U.S.), Lipoid GmbH (Germany), E.I. duPont de Nemours Company (U.S.), and Stern-Wywiol Gruppe Pvt. Ltd. (India)."

"About MarketsandMarkets: MarketsandMarkets is the world's No. 2 firm in terms of annually published premium market research reports. Serving 1700 global fortune enterprises with more than 1200 premium studies in a year."

Note: This study costs $4,650. Since few public statistics are kept on lecithin production and value, market studies generally have to rely on what data is available. Moreover

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they tend to have a poor understanding of specialized industries. Address: India.

621. Langton, Diane. 2015. Cargill Inc.: 150 years. From Conover to Minneapolis, company got its start in rural Iowa. *Cedar Rapids Gazette* (*Iowa*). Jan. 11. p. M4. Sunday.
• ***Summary:*** This long, excellent article begins: "*Forbes* lists Cargill. Inc. as the largest private company in the United States. It was valued at $134.9 billion in October and employed 143,000.

"The company will mark its 150th anniversary this year.

The number of Cargill facilities in Iowa rivals that of any other state, possibly because William W. Cargill began his company in the small village of Conover in Winneshiek County."

"Will married in 1868 and moved with his bride, Ellen Stowell, to his new company headquarters in Austin, Minnesota."

"Cargill's impact on Cedar Rapids began with the purchase of Iowa Milling Company in 1942. The grain milling plant at 411 Sixth Street NE caught fire in October 1944. Lawrence Hoskins, manager of the plant, said there were no [soy] beans or oil in the mill or in the huge concrete storage tanks. Old stock was gone and the new bean crop had not yet come in, but the facility was gutted...

Cargill brought several of its major facilities to Cedar Rapids in 1945; a vegetable oil processing plant, a Cargill-Nutrena feed mill and a grain merchandising office.

"Another Cedar Rapids Cargill facility caught fire in April 1951. There was an explosion at the processing plant at 850 10th Street SW at about 1 a.m. Only the office building was lost. The feed and soybean processing plant had been built by Honeymead in 1937 and purchased by Cargill in 1945 for an estimated $2.5 million. The fire-damaged plant was back in operation in October.

William Cargill died in 1909 at age 64. His company was run by his descendants until 1960 when John MacMillan Jr. died. Erwin Kelm became company president.

"The giant company is still family owned."

Photos show: (1) "The Cargill facility along Otis Road SE near downtown Cedar Rapids on May 30, 2011, showing the Cedar River in upper right corner in northeast Cedar Rapids." (2) "Trucks carrying soybeans... lined up near the Cargill West facility at 1010 10th Ave. SW on Sept. 30, 1980."

622. Wendel, Armin. 2015. Re: The largest soybean crushers in Europe who sell their own lecithin. Letter (e-mail) to William Shurtleff at Soyinfo Center, Sept. 13–in reply to questions. 1 p.
• ***Summary:*** In the European market, soy lecithin is no longer as popular as it was because of GMO [genetically engineered soybeans] and allergy to soy.

The main oilseed crushers in Europe are ADM, Bunge and Cargill.

The food industry in Europe now prefers rape- and sunflower lecithin. Therefore the big oil mills (ADM, Bunge and Cargill) are crushing non-GMO soybeans (mostly coming from South America or India), rapeseeds and sunflower seeds (from Eastern Europe).

Companies modifying or fractionating lecithin are mostly importing lecithin from USA, South America and India.

ADM sells lecithin under the trademarks Yelkin®, Beakin®, Performix™, Thermolec®, Ultralec®, and Adlec™.

ADM sells deoiled lecithin under the trademark Ultralec®.

Bunge sells their lecithin mostly through DuPont (Danisco, Solae, former Central Soya) under the trademark Solec® (liquid and deoiled lecithin).

To explain: Cereol bought Central Soya (CSY) many years ago.

In July 2002 Bunge bought Cereol of France.

In 2003 Bunge, together with DuPont, integrated the business of Cereol into the new company, Solae.

DuPont bought Danisco and integrated the Solae business into Danisco.

Cargill (which purchased Lucas Meyer, Degussa) (fluid lecithin, deoiled lecithin, lecithin fractions): Topcithin, Lecigran, Epikuron, Metarin, Emulfluid, Emulpur, Emultop, Chocotop, Lecisoy, Lecimulthin.

To explain: In July 1999 Lucas Meyer (which sold mostly lecithin) was acquired by the nature products division of SKW Trostberg (a specialty chemical company). In 1998 Lucas Meyer has almost 250 employees, 140 of them in Germany, and generated sales of DM160 million ($83.5 million). The business was then integrated into Degussa–a large German company with a long history. Degussa sold the business to Cargill. Cargill bought the lecithin business from Riceland.

Monsanto, with their introduction of GMO soybeans, has had a very negative influence in the lecithin business and industry. Address: Germany.

623. Richards, Michael. 2015. Patent history, intellectual property agreement timeline with Cargill and Elevance Renewable Sciences. Iowa City, Iowa: Published by the author. 2 p.
• ***Summary:*** "Key facts;

"a. Michael L. Richards invented his C-1 soy wax product in 1991. This was the first soy wax candle in the global market.

"b. Richards established the initial market for soy wax candles in 1993 with an international retail chain; The Body Shop Stores, based in the United Kingdom. During the next few years, Richards expanded the market for soy wax candles with other noted retail companies such as Urban

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Outfitters and other key customers such as Clairol and Estee Lauder.

"d. Richards tiled for patent protection in 1998. **Michael L. Richards,** sole patent applicant

"e. Cargill then negotiated an intellectual property agreement with Richards in 2000.

"f. Richards was under a **'non-compete' clause** in this agreement for the first five years. **There has been no non-complete obligation since 2006...** in fact, the Contract with Cargill, and then subsequently with Elevance Renewable Sciences specifically states that 'Richards has the right to develop other products either alone or in collaboration with others'.

It will be important however to determine how any patents in place would affect the development of new soy wax products jointly with Vippy Soya/India.

"g. Cargill filed a series of patents on the C-1 soy wax product that Richards originally developed.

"h. Cargill then filed a series of patents to protect the original Soyawax product process and formula originated by Richards. Cargill added the names of 3 Cargill employees to the patent application, *along with Richards:* Timothy A. Murphy, Melinda Kae Doucette, Nathaniel C. House

"Patents filed by Cargill;

"1. Timothy A Murphy, Melinda Kae Doucette, Nathaniel C House, Michael L Richards: Triacylglycerol-based alternative to paraffin wax. Oct. 31 2002: US20020157303

"2. Timothy A Murphy, Melinda Kae Doucette, Nathaniel C House III, Michael L Richards: Triacylglycerol-based alternative to paraffin wax. Cargill. Nov. 11 2003: US6645261 (B2)

"3. 6. Timothy A Murphy, Melinda Kae Doucette, Nathaniel C House III, Michael L Richards: Triacylglycerol-based alternative to paraffin wax. Cargill. Nov. 11 2003: US6645261 (B2)

"4. Timothy A. Murphy, Melinda Kae Doucette, Nathaniel C. House, Michael L Richards: Triacylglycerol-based alternative to paraffin wax. Cargill. Dec. 6 2007: US20070282000

"i. Cargill and Richards, by mutual agreement transferred the original Richards/Cargill intellectual property agreement to a new company established by Cargill, Dow Chemical and other partners; Elevance Renewable Sciences. The Richards family established Prometheus, Inc. a new Iowa Corporation to manage this intellectual property contract. This transfer took place in 2007.

"J. Elevance then filed subsequent patents on this product;

"Patents filed by Elevance Renewable Sciences:

"1. Timothy A Murphy, Melinda Kae Doucette, Nathaniel C House III, Michael L Richards: Triacylglycerol-based alternative to paraffin wax. Elevance Renewable Sciences. June 19, 2012: US8202329 (B2)

"2. Timothy A Murphy, Melinda Kae Doucette, Nathaniel C House III, Michael L Richards: Triacyglycerol-based alternative to paraffin wax. Elevance Renewable Sciences. Sept. 6, 2012: US20120225944

"3. Timothy A Murphy, Melinda Kae Doucette, Nathaniel C House 111, Michael L Richards: Triacyglycerol-based alternative to paraffin wax. Elevance Renewable Sciences. 9/10/2013: US20138529924

"In 2016, Elevevance Renewable Sciences transferred the intellectual property contract with the Richards family corporation Prometheus, Inc. back to Cargill.

"The intellectual property contract between the Richards family corporation Prometheus, Inc. and Cargill remains active currently.

Note: Michael writes (7 Nov. 2017): "This timeline was prepared on September 15, 2015 for a meeting that I had scheduled that week with the Praneet Mutha, CEO of Vippy Soya of India. The meeting took place in Minneapolis, Minnesota during that week of September 2015." "Thus far, there has been no business relationship that has developed." Address: Cedar Rapids, Iowa.

624. Wendel, Armin. 2016. Re: History of Lucas Meyer. Letter (e-mail) to William Shurtleff at Soyinfo Center, June 14. 1 p.

• ***Summary:*** Lucas Meyer never crushed soybeans. They got their lecithin, soy flour and soy proteins from soybean crushers.

"Sometimes company history is very complex. At the time (July 15, 1999) when SKW acquired Lucas Meyer–SKW belonged to VIAG.

"In 2000 VIAG merged with VEBA to become EON–and SKW together with Degusssa-Huels became the new Degussa AG.

"The food business didn't fit the company any more, therefore Degussa (a VIAG company) sold the food business (which included the former Lucas Meyer business) to Cargill (9 September 2005). Cargill was interested in expanding their food business.

"Edelsoja–according to my files (at least in 1974)–Edelsoja was the 50:50 joint venture of ADM and Lucas Meyer. ADM was the producer and Lucas Meyer was selling the material."

Here are some basic facts about Lucas Meyer:

Address: Edelsoja GmbH–Ausschläger Elbdeich 21 Hamburg

Share Capital: Deutsche Mark (German Mark) 1 Million

GF (*Geschäftsführer*) = Managing director: Arnd von Wissel, Jens Heiser

Ges. (*Gesellschafter*) = Partner: Ges.: Oelmühle Hamburg AG (500TDM), Lucas Meyer (500TDM)

Prok. (*Prokura*) = Authorized officer: Karl Otto Tielker

Umsatz = Sales 1989: Deutsche Mark 30 Million. Employees: 36

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Gegründet = Founded December 18, 1959

April 4th, 1974 Hamburg HRB (Handelsregister B) Commercial register 16400 (This is the source of this information!)

Former Lucas Meyer employees established their own business:

Dr Herbert Rebmann = 1977 Lipoid GmbH http://www.lipoid.com/en

Volkmar Wywiol = 1980 Stern Wywiol Gruppe http://www.stern-wywiol-gruppe.de

Dr. Kuno Strauss = 1981 Extrakta Strauss www.extrata.de

Jens Heiser = 2005 Lecico http://www.lecico.de

Dr. Michael Schneider = Lecithos http://www.lecithos.de

Peter Fismer = Fismer Lecithin http://www.fismer-lecithin.com

Pierre Labourd = 2006 Novastell http://www.novastell.com

The founder of Lucas Meyer, his son and grandson are:

1–Herman Heinrich Meyer *1893 +1978 (in the company 1923-1945)

2–Lucas Heinrich Gustav Meyer *1924 +1980 (in the company 1945-1980)

3–Lucas C.H. Meyer *1949 (in the company 1977-2006). Address: near Heidelberg, Germany.

625. Cargill; Bunge Ltd. 2016. Cargill to sell two oilseed processing plants to Bunge (News release). 2 p. Aug. 16.
• ***Summary:*** "In the Netherlands, the transaction includes the soybean and rapeseed crush and soybean oil refining facility in the Port of Amsterdam as well as part of the bulk port terminal assets dedicated to supporting discharge and storage of raw materials for the crush plant. In France, it includes the soybean and rapeseed crush facility located in the Port of Brest. The aggregate annual processing capacity at the two locations is approximately two million tons.

"The assets are highly complementary to Bunge's existing soy processing operations in Europe, and will allow Bunge to further expand its global oilseed processing footprint into key Northern European destinations, grow its presence in Europe's protein market, and further optimize global flows and logistics to serve customers. Industrial operations and business activities will be integrated within Bunge's Europe, Middle East and Africa (EMEA) regional operations and global soy crush platform, and Bunge is looking forward to welcoming the experienced and skilled employees of the two sites.

"Cargill will retain its two other soybean processing facilities in Western Europe, in the ports of Barcelona in Spain and Liverpool in the United Kingdom,..."

Cargill has 150 years of experience plus 149,000 employees in 70 countries.

Bunge Ltd. has approximately 35,000 employees in 40 countries.

626. Schneider, Keith; Slotnik, Daniel E. 2016. Dwayne O. Andreas, who turned Archer Daniels Midland into food giant, dies at 98. *New York Times.* Nov. 16. p. B16.
• ***Summary:*** Dwayne Andreas died on 16 Nov. 2016 in Decatur, Illinois. This excellent biography covers his success in building ADM, several ADM scandals, and his skillful use of the levers of power with friends such as Mikhail S. Gorbachev.

Dwayne Andreas was born into a Mennonite family on 4 March 1918 in Worthington, Minnesota–the 5th of 6 children of Reuben and Lydia Andreas. "His father moved the family to Lisbon, Iowa, where he purchased a grain elevator and raised livestock on a small farm." Dwayne began working at the elevator at age 9.

In 1936 the family changed the name of the business from Reuben & Sons to Honeymead Products. In 1939 they moved it to Cedar Rapids, Iowa, where they built a soybean crushing plant, mainly to manufacture soybean meal for feed. "By this time Mr. Andreas had briefly attended Wheaton College in Illinois, and his younger brother Lowell had become active" in the family business. (Lowell Andreas, who spent his entire life in the soybean and grain business and was later president of ADM, died in 2009).

Honeymead became one of America's major soybean processors. In 1945, after Reuben Andreas suffered several strokes, the family sold the Cedar Rapids plant, but not the Honeymead name, to Cargill.

Dwayne went to work for Cargill and rapidly rose in the ranks. He "met and befriended Hubert Humphrey, who had just been elected mayor Minneapolis. Humphrey became a political mentor to Mr. Andreas and the godfather of his son, Michael; Mr. Andreas became a major donor to Humphrey's Senate and presidential campaigns.

In 1947. Dwayne and Lowell Andreas purchased a soybean crushing plant in Mankato, Minnesota, and named it Honeymead Products Company. That same year, Dwayne married Dorothy Inez, a single mother of a little girl."

By 1952 Dwayne had resigned from Cargill to help his brother, Lowell, run Honeymead. They turned it into one of the largest soybean processors in the USA.

In 1960 Farmers Union Grain Terminal Association, a larger company, bought out the Andreas brothers for a sum large enough to enable them to start a bank, which became National City Bank. "Farmers Union then hired Dwayne as executive vice president, while Lowell managed the banking business."

In 1966 Dwayne (age 48) was already a well-known Minnesota grain merchant when the Archer and Daniels families asked him and his brother, Lowell, to become executives and minority shareholders in their midsize farm products company. In 1967 Lowell became president. In 1970 Dwayne became chief executive (CEO) and then

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chairman of the board. In 1997 he stepped down as chief executive and in 1999 he also stepped down as chairman, succeeded by his nephew, G. Allen Andreas.

Dwayne's wife, Dorothy, died a few years ago. Dwayne is survived by his son, Michael, two daughters, Terry Andreas and Sandra McMurtrie; nine grandchildren; and 23 great-grandchildren.

In 1970 when Andreas was named chairman and chief executive of ADM, the company's soybean exports totaled $1.5 billion. In 1999 when he retired as chairman, the export number had risen to $7 billion and ADM was the biggest processor in the industry. ADM employed more than 23,000 people and operated in 50 countries.

The company was originally founded in 1902 by George A. Archer as a linseed crushing business in Minneapolis, Minnesota.

"Mr. Andreas often said that the central objective of his life was to provide food for the world's hungry. In the 1950s he pressed members of Congress to support the Food for Peace grain-export program; President John F. Kennedy appointed him to the American Food for Peace Council."

Personal friends of Dwayne Andreas were Presidents Richard M. Nixon, Ronald Reagan, Jimmy Carter and Bill Clinton. In 1985 he helped arrange the first meeting between Reagan and Gorbachev. "He was particularly close to president Nixon who opened China's markets to ADM's grain." He worked with all of them to expand export markets, especially for soybeans. "He was largely responsible for making soybeans a top American agricultural export."

Mr. Andreas was known for his lavish campaign spending–which almost always returned to ADM more than it cost; he gave equally to both parties. ADM made billions off of federal ethanol programs, sponsored by Senator Bob Dole, a Kansas Republican.

"Fred Wertheimer, the former director of Common Cause, the public interest advocacy group, called Mr. Andreas's political activities 'a classic example of how the corporate welfare game in Washington works.'

"'He provides huge amounts of political influence money,' Mr. Wertheimer told The Washington Post in 1995, 'and his company receives huge economic benefits, courtesy of the American taxpayer.' The Justice Department investigated him and ADM four times in the 1970s and again in 1974. He was acquitted each time.

In 1984, while seeking re-election, Ronald Reagan visited ADM's headquarters in Decatur, Illinois. "Mr. Andreas commissioned a seven-foot bronze statue to commemorate the event."

Several members of the Andreas family control nearly 8% of ADM's publicly traded stock, making them one of the wealthiest families in the United States.

Although much of Mr. Andreas's access to power came from his hefty political contributions, another source of power was Bal Harbour, Florida, where, in the early 1950s, he helped found the Sea View Hotel, a cooperative. First he bought an apartment there then recruited other powerful politicians to do the same.

Note: A version of this article also appears in print on Nov. 17, 2016, in the New York edition on page B16.

627. Zionsville Candle Company LLC. 2017. A brief history of candles (Website printout). www.zionsvillecandlecompany.com/soycandlehistory.html 1 p. Retrieved Sept. 26.

• ***Summary:*** "No one can say for certain when the first candle was invented. It is known that ancient Egyptians used torches that were similar to a candle (without the wick.) Rather, it is the Romans who are credited with lighting the night with wicked candles.

"It was not until the middle ages that beeswax candles were first introduced, which were a welcomed alternative to the rancid-smelling candles made by the Romans. The only problem? The beeswax candles were expensive to produce, thus leaving the populace seeking yet a cheaper effective alternative.

"Fast forward to the industrial revolution.

"In 1834, Joseph Morgan introduced an automated piece of equipment that created pillar candles. The machine 'ejected' the candles as they solidified.

"In the 1850`s, paraffin wax was invented. A by-product from petroleum, paraffin wax, combined with mass production, finally made candles affordable and cleaner burning.

"With the invention of the light bulb, the demand for candles decreased (as a utility product,) however, a resurgence in its popularity has gained strength throughout the 20th century, as the candle has become a symbol of celebration and for creating moods, as well as for adding fragrance to the home.

"The Soy Wax Candle.

"Soy wax is a fairly new type of candle wax. It was invented in 1991 by Michael Richards, who was looking for a cheaper alternative to beeswax. There was demand for natural wax products, but bees wax was an incredibly expensive alternative. By 1996, as he experimented with different types of vegetable waxes, he finally discovered a method of using soy beans to produce an affordable, natural wax product.

"The Body Shop was the first national chain store to offer soy candles for sale.

"Several studies have been conducted on the benefits of soy wax, and The Indiana Soybean Board patented a special soy wax product, Harvest Lights, in 1998. Cargill purchased Michael's patent in 2001 and now controls production of soy wax used by various soy candle producers."

"Did you know that soy candles have a memory?

"This is very important to know. When you light our

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candle for the first time it remembers how far across the surface it melted. For best results and longest enjoyment of your candle let your candle surface completely liquefy before extinguishing it. This will result in a longer lasting candle without the occurrence of tunneling down the center. Remember, keep your wicks trimmed to ¼ inch." Address: 209 Augusta Dr., Hopewell Jct., NY 12533. Phone: 866-279-4257 (866-27WICKS).

628. Richards, Michael. 2017. Update on life and work (Interview). *SoyaScan Notes.* Oct. 2. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** Michael is living in Cedar Rapids, Iowa. Everything is going very well. His main focus in life is his children and grandchildren. He continues to receive his patent royalties through Cargill; they sold the NatureWax business off to a startup named Elevance Renewable Sciences, and for 7 years Michael's checks came from Elevance. Then two years ago, Cargill brought the brand back from Elevance. The amount of the checks has continues to grow. "It doesn't create what people refer to as 'wealth' but it's definite financial independence." Although Cargill tried to gradually phase out Michael's original formula, the small customers kept bringing Cargill back to Michael's original formula. "If it were not for customers loyal to our original product, Cargill and/or Elevance would have accomplished their deed."

Village Chandlers grew to the point that Michael was working with up to about 300 small candle producers. As the industry consolidated, about 90% of them did not survive, however that is how the business really developed and grew over the first ten years. Now some very large producers use Michael's original formula, and they have made it more difficult for some of the small producers to keep competing. Michael estimates that about 80% of the volume of wax shipped out from Cargill goes to an international chain of stores named Bath and Body Works; they have about 2,000 retail stores worldwide. The other 20% goes to other small candle makers. For ten or so years, Michael sold his formula wax to the Village Chandlers. Cargill would not ship directly to them because Cargill's minimum shipment was one pallet. The Wexner Group (now L Brands) got involved by creating a new brand and company named Bath and Body Works LLC, founded in 1990. and for 3-4 years time tried to imitate The Body Shop but, after a fairly major lawsuit, was forced to significantly reduce the amount of imitation.

Wikipedia says: "In 1997, it was the largest bath shop chain in the United States. It specializes in shower gels, lotions, fragrance mists, perfumes, candles, and home fragrances."

Michael, as a entrepreneur, has purchased a cluster of properties on the outskirts of Cedar Rapids, which he is developing into a cafe and music venue named The Bohemian. During the 2008 flood, ten square miles of Cedar Rapids was under water; he was able to buy these properties as distressed properties after they had been under water. Address: Founder and owner, Candleworks, Inc., 1029 Third St. S.E., Cedar Rapids, Iowa 52401. Phone: 319-363-1774.

629. Roseboro, Ken. 2018. New GMO technologies represent major challenges to non-GMO supply chain, certification: next generation GMOs are entering the food chain, claiming to be "non-transgenetic." *Organic and Non-GMO Report* (*The*) (*Fairfield, Iowa*) No. 184. Nov/Dec. p. 6-8.

• ***Summary:*** On the top half of the first page is a large color photo showing a hand holding a pair of tweezers holding half of a strand of DNA.

"New genetic engineering technologies such as CRISPR gene editing, RNA interference (RNAi), and synthetic biology are presenting major challenges to the non-GMO supply chain and certifiers, as some products developed using those technologies are entering the market claiming to be 'non-transgenic' or even non-GMO.

"Cibus used oligonucleotide mutagenesis (ODM), a gene editing process, to develop a canola variety that the company claims is non-transgenic. Conagen developed a 'next-generation natural preservative' using synthetic biology and claims it is non-GMO. Calyxt developed a gene-edited high-oleic soybean that was grown this year, and the harvested crop will be processed at two non-GMO and organic processing facilities in Iowa, American Natural Processors and KemX Global. While Calyxt doesn't claim that its soybean is non-GMO, the company issued a press release saying it had 'received a letter from the U.S. Department of Agriculture confirming that the Company's high-oleic soybean variety is non-regulated, as the product contains no foreign DNA.' A synthetic biology sweetener, EverSweet, developed by Cargill, was even certified non-GMO by NSF's True North non-GMO program.

"'Being misrepresented to the supply chain as non-GMO': One of the biggest concerns is that these products are being represented to the supply chain as non-GMO. These companies are really taking advantage of the fact that these products are not transgenic and equating that with being non-GMO," says Megan Westgate, executive director of the Non-GMO Project. 'But they have been developed using genetic engineering techniques and they are GMOs.'

"This muddying the waters of what is non-GMO creates challenges for food manufacturers who may not be aware that some ingredients were developed using new genetic engineering techniques.

"'The lack of transparency coming from purveyors of these new techniques has put food companies in a vulnerable position. Getting out in front of this new dynamic has also created a strategic challenge for us,' Westgate says. 'How do we help protect the supply chain so that people are not misled?'

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"To prevent misrepresentations of new GMOs as non-GMO, the Non-GMO Project requires that suppliers fill out affidavits that include a list of techniques that are prohibited in non-GMO verification. These include gene editing, synthetic biology, and RNAi.

"'We are not just looking for them to say it is non-GMO,' Westgate says. 'We are looking for someone with sufficient knowledge of the supply chain to attest that none of these techniques have been used.' Westgate emphasizes that these so-called 'GMO 2.0' technologies are genetic engineering. 'Gene editing still involves transgenics. They still use soil bacteria, to get the DNA into the nucleus of the host plant. It's just that it is not there in the finished product. They have used genetic engineering to develop them. There is no possible way they can be non-GMO.'

"The European Union Court of Justice has also ruled that products developed using gene editing should be subject to GMO regulations.

"NSF's True North non-GMO standard also prohibits gene editing and other new GMO technologies. 'Gene editing and synthetic biology meet the definition of genetic engineering' under NSF's Non-GMO protocol and are therefore not allowed, except in limited circumstances such as when enzymes are used as processing aids and are not present in the finished product,' says Steve Taormina, business unit manager for NSF International's Consumer Values Verified Program.

"The Non-GMO Project does not allow such exceptions, considering products such as enzymes made using GMO microorganisms as GMO even if they are not found in the final product. This led to the Non-GMO Project objecting to NSF's non-GMO certification of Cargill's EverSweet sweetener made using a GMO yeast.

"'If something is created using a fermentation microorganism, and if that microorganism is genetically engineered, then the product that it makes is genetically engineered,' Westgate says.

"Taormina says NSF welcomes input on its non-GMO standard. 'As with all standards, NSF's Non-GMO True North certification program continues to evolve with science and technology. This certification program is currently under review and we welcome additional key stakeholders-users, regulators, industry, and academia–to participate and provide their perspectives as part of the stakeholder review group.'

"'Trying to distance themselves from consumer rejection of GMOs'

"New GMO companies don't want their products called GMO or genetically engineered because of negative consumer perceptions of the technology.

"'We definitely see a huge trend of these new GMO companies trying to distance themselves from the consumer rejection of GMOs by basically saying that their products are not GMO,' Westgate says.

"One of the challenges with products made from new GMO techniques is that they aren't regulated by the government. As with Calyxt gene-edited soybean, the USDA considers these products 'unregulated' so they can enter the market much faster than older GMOs, which must go through a regulatory process that can take several years.

"To track all the products being developed using these new technologies, the Non-GMO Project employs a full-time research team. A research analyst says there are some 80 products she monitors along with 250 companies involved in genetic engineering, from 'older' transgenic technologies to the newer techniques.

"The research analyst finds new companies and products all the time, and this is likely to continue. 'We can expect a significant increase in the quantity and range of biotechnology products over the next 5 to 10 years,' the analyst says.

"But while new GMOs are entering the market, they still represent just a small segment of the GMO industry. 'In the big picture, it is still the case that almost all GMOs are transgenic crops that are developed to be herbicide tolerant,' Westgate says.

"Education is another key to dealing with threats posed by new GMO technologies to the non-GMO supply chain, particularly for the food industry and consumers.

"'It is important to get that baseline understanding established, especially in the food industry, for people to understand how dishonest and unscientific it is when companies say that these things are not GMO,' Westgate says.

"One of the biggest challenges is the fact that there are no tests to detect new GMO products developed using gene editing and synthetic biology. But that will change soon.

"'There is really good progress being made with developments in being able to test for these things. We do expect that within the next couple of years most of these new GMOs will be testable, and as soon as there are quantitative tests for them we will be requiring those,' Westgate says."

Note: "NSF" used to stand for National Sanitation Foundation, but the company has changed its mission since it was established in the 1940s and now the three letters stand for nothing. Address: Editor.

630. Reuters. 2019. Global commodity traders to monitor deforestation in Brazil's savannah (Web article). https://uk.reuters.com/article/us-brazil-environment-cerrado-idUKKCN1Q42D8

• ***Summary:*** "Brasilia (Reuters)–Six major commodities traders, including Cargill Inc and Bunge Ltd, have agreed to a common mechanism to monitor soybean supply chains for deforestation in Brazil's vast Cerrado savannah."

"Companies belonging to the Soft Commodities Forum network that signed onto the agreement to monitor their soy supply chains in the Cerrado include Archer Daniels Midland Co, COFCO International, Glencore Plc's agriculture

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unit and Louis Dreyfus Company, according to a Forum statement."

"While many other trading firms have committed to reaching zero net deforestation in their supply chains globally by certain dates, they have yet to make specific pledges to end destruction in the Brazilian savannah."

631. National Oilseed Processors Association (NOPA). 2019. Members (Website printout–part). www.nopa.org/about-us/members/ Retrieved April 30.

• ***Summary:***

"Ag Processing Inc.
"Archer Daniels Midland Company
"Bunge North America, Inc.
"Cargill, Inc.
"CHS Inc.
"Consolidated Grain & Barge Company
"Express Grain Terminals, LLC
"Incobrasa Industries, Ltd.
"Louis Dreyfus Company LLC
"Owensboro Grain Company, LLC
"Perdue Grain and Oilseed, LLC
"Riceland Foods, Inc.
"Zeeland Farm Soya."
"Associate Members:
"Commodity Specialists Company
"Feed Energy Company
"J.M. Smucker Company
"Land O'Lakes Feed
"Pilgrim's
"Smithfield Foods Inc.
"Tyson Foods, Inc.
"U.S. Commodities, LLC" Address: 1300 L Street, NW, Suite 1020, Washington, DC 20005. Phone: 202.842.9126.

632. Cargill, Inc. 2019. Annual report–2019: Higher reach. P.O. Box 9300, Minneapolis, Minnesota. 14 p. www.cargill.com https://www.cargill.com/doc/1432144962450/2019-annual-report.pdf

• ***Summary:*** Our year: Performance: $2.82 billion in adjusted operated earnings. $113.5 billion in revenue [income]. $5.19 billion in cash flow. $2.81 billion invested in strategic acquisitions, joint ventures, and new and existing facilities.

Transparency: "Introduced a South America Sustainable Soy Policy and corresponding action plan to protect forests and native vegetation in the region."

Letter to stakeholders: Every day, as a global team, we challenge ourselves to reach higher. Dave McClennan, Chairman and Chief Executive Officer. David Dines: Chief Financial Officer.

$61.3 million–Total charitable contributions provided across 56 countries.

"Another crucial dimension of sustainable development is combating climate change, one of the most significant issues of our time and one that directly impacts food and agriculture." There follows a long statement of what Cargill is doing to combat climate change. Address: Minneapolis, Minnesota.

633. Cargill, Inc. 2020. South American soy: Progress report, mid-year update. Minneapolis, Minnesota: Cargill, Inc. 17 p. June 30. [Eng]

• ***Summary:*** Page 2: Contents:

"Our approach to soy sustainability:
4 Letter to stakeholders.
5 About Cargill
6 Our commitments and action plan
Progress on our action plan:
9 Understand supply chain risks
12 Engage supplier partners
13 Deploy action levers
14 Advance transformational partnerships

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16 Monitor, verify and report

Page 3: "Our approach to soy sustainability." The background photo shows plastic bags filled with whole dry soybeans.

Page 5: Letter to stakeholders, by John Hartmann, Global Sustainability Leader for Agricultural Supply Chains. This letter begins: "The world has changed dramatically since we published our first progress report just six months ago. And yet, although communities and organizations everywhere have been focused on responding to the COVID-19 crisis, we at Cargill know that sustainability cannot wait. During the first half of this year, we have continued to steadily pursue our objective of building deforestation-free supply chains. We have not wavered in our deep commitment to protecting forests and native vegetation in South America, or in our belief that this can be done in ways that are economically viable for farmers and local communities." To the right are listed: Key achievements so far this year

"For the first time, we calculated the estimated share of our soy in Brazil grown on land that is deforestation- and conversion free (DCF), using 2008 as a reference point

"We completed mapping of our Brazil supply chain with georeferenced single points six months ahead of schedule

"We expanded our direct engagement with farmers in Brazil, including the launch of a new partnership with the largest farmer association in the state of Bahia

"We continued to grow our Sustainably Sourced and Supplied (Triple S) certification program in Brazil and Paraguay, providing a larger market for soybeans grown through verified sustainable methods."

Page 5: "About Cargill: Our purpose is to nourish the world in a safe, responsible and sustainable way.

"160,000 employees. Working in 70 countries. With more than 150 years of experience. Delivering for customers in more than 125 countries. Supporting communities with 350 Cargill Cares Councils. We aim to be the most trusted partner for food, agricultural, financial and industrial partners."

"Our business: Every day, we connect farmers with markets, customers with ingredients, and people and animals with the food they need to thrive.

"We provide insights to our partners.

"We transform raw materials into finished goods.

"We move products around the world.

"Our Guiding Principles:

"Doing business ethically is key to our longterm strategy and relationships. Our seven Guiding Principles make up the core of our Code of Conduct. We require all employees and contractors to follow them, and expect our suppliers to do the same.

"1. We obey the law.

"2. We conduct our business with integrity.

"3. We keep accurate and honest records.



"4. We honor our business obligations.

"5. We treat people with dignity and respect.

"6. We protect Cargill's information, assets and interests.

"7. We are committed to being a responsible global citizen."

Page 6: "Our commitments and action plan:

"We have made four commitments to do our part for sustainable soy from South America:

"Transforming our supply chain to be deforestation-free while protecting native vegetation beyond forests

"Promoting responsible production, which benefits farmers and surrounding communities

"Respecting and upholding the rights of workers, indigenous peoples and communities

"Upholding the high standards of transparency through reporting of key metrics, progress and grievances.

Page 7: "We are doing our part to help lead the soy sector forward to a sustainable future. Broad partnerships are needed to create the transformation we all want to see..."

"The six elements of our action plan:

"Assess and plan implementation

"Understand supply chain risks

"Engage supplier partners

"Deploy action levers

"Advance transformational partnerships

"Monitor, verify and report.

Page 8: Progress on our action plan. A large photo shows two men walking on a dirt road beside a field of soybeans.

Page 9: "Understand supply chain risks: We are committed to building a deforestation- and conversion-free supply chain. To do this, we must map where our soy comes from and analyze what portion of it was grown on land that may have been converted from native vegetation in recent years...

"95.68% of our soy volumes in Brazil for the 2018-19 crop year were deforestation- and conversion-free (DCF), based on this analysis. A color-coded map shows each of the states in Brazil from which Cargill sources soybeans. On each state is written the percentage of soybeans that are DCF. Two states are 100%. Six states are 97-99%. Four states (all in the northeast) are 59% to 88%.

Page 10: Mapping our supply chains. A large color-coded map shows Brazil, Paraguay, Bolivia, and Argentina. Single points for individual suppliers are shown.

In Brazil industrywide soy production is 122.3 million tons. Cargill suppliers supply (by volume) 69% direct and 31% indirect. 100% of Cargill suppliers have been single-

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point mapped.

In Argentina industrywide soy production is 55.0 million tons. Cargill suppliers supply (by volume) 52% direct and 48% indirect. 80% of Cargill suppliers have been single-point mapped.

In Bolivia industrywide soy production is 2.4 million tons. Cargill suppliers supply (by volume) 84% direct and 16% indirect. 36% of Cargill suppliers have been single-point mapped.

In Paraguay industrywide soy production is 11.0 million tons. Cargill suppliers supply (by volume) 48% direct and 52% indirect. 72% of Cargill suppliers have been single-point mapped.

Note: It is unclear why no statistics are given for Uruguay, where the color coding shows that Cargill has customers.

Page 11: South America's major biomes. These biomes cut across several countries. In order to understand them in the context of our supply chain mapping, it's important to recognize that they are vastly different in terms of their natural characteristics and the local communities that depend on them. The Amazon is the world's biggest tropical forest, home to an immense amount of biodiversity as well as indigenous [human] cultures. Soy farming occurs mainly around its edges. Meanwhile, the Cerrado is a savannah that stretches across Brazil's agricultural heartland. Farming activity here serves as the backbone for local economies and 46 million inhabitants (1). The Gran Chaco spreads across parts of Argentina, Bolivia and Paraguay. It is the continent's second-largest forest, home to important biodiversity and many different communities as well.

The Amazon: 83% of native vegetation is still intact. <2% of soy planted today is on land that was native vegetation in 2008, none of which enters Cargill's supply chain (3).

The Cerrado: 52% of native vegetation is still intact (4). 7% of areas cleared of native vegetation between 2014 and 2019 had soy on them for the 2018-18 crop (5)

The Gran Chaco: 77% of native vegetation is still intact (6). <1% of areas cleared of native vegetation between 2014 and 2019 had soy on them for the 2018-18 crop (6)

Sources: (1) EMBRAPA; (2) Brazil's Ministry of the Environment; (3) ABIOVE; (4) Funcate; (5) ABIOVE; (6) FAO and UNEP; (7) Global Forest Watch

"Page 12: Engage supplier partners. Working with farmer organizations. Expanding supply of sustainable soy. Fuel to the world (soy-based biodiesel). Meeting customers' sustainability needs.

"Cargill is devoting serious investment in Paraguay to achieve sustainability goals and reduce the business carbon footprint. The Triple S project has a great impact on the soy value chain because it tackles all the pillars that we need to focus on in order to walk towards a sustainable path."

"Alma Acosta, program manager for Solidaridad Paraguay." (Continued).

634. Cargill, Inc. 2020. South American soy: Progress report, mid-year update (Continued–Document part II). Minneapolis, Minnesota: Cargill, Inc. 17 p. June 30. [Eng]
• ***Summary:*** (Continued). Page 13:

"Deploy action levers. Accelerating climate solutions: The $30 million fund that we announced in 2019 is now establishing partnerships to develop solutions that help protect forests across South America. To administer the fund, we selected Chemonics International, a trusted international development organization with experience in more than 150 countries and a strong track record operating in complex environments..." Effective Enforcement: To make sure that soy does not enter our supply chains from farming operations accused of illegal deforestation or slave labor in Brazil, we have built a robust system of controls. On a daily basis, this system consults government lists of embargoed farms and blocks them so they are not eligible to sell soy to us. Our system also consults lists of non-compliant farms managed by the Soy Working Group (GTS) based on the Amazon Soy Moratorium (see page 16), as well as voluntary programs managed by the state of Pará such as the Green Grain Protocol."

In the first half of 2020 419 farms were blocked. 139 additional operations were analyzed to avoid rerouting of embargoed soy."

Page 14: "Advance transformational partnerships: Continuing to share expertise. Collaborating on progress in Argentina. In Bolivia, a new agreement.

Page 15: Partnering in restoration. Creating data-driven transparency. Soja Plus: Organized by ABIOVE and funded in part by Cargill, this free and voluntary educational program helps farmers comply with federal regulations. By continuously improving how they manage the economic, social and environmental aspects of their operations, these farmers contribute to the resilience and long-term sustainability of the soy sector. Technical experts visit participating farms to monitor performance and provide coaching. This year, our funding helped expand Soja Plus to the state of Maranhao in partnership with ABIOVE and Viçosa Federal University.

Target for farms in Brazil trained through Soja Plus with funding from Cargill. 50 in Maranhao. 50 in Goiás. 70 in Minas Gerais. A large map shows the states in Brazil where Soja Plus is operating.

Page 16: "Monitor, verify and report: Communicating our process for grievances. Continuing to protect the Amazon. Sharing your feedback.

"58 soy-related grievances were reported in our system during the first half of 2020. 72% of these were unrelated to our supply chain or operations." A large color photo shows a man walking in a field of soybeans.

Page 17: Thrive.

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635. Cargill, Inc. 2020. Cargill timeline. Minneapolis, Minnesota: Cargill Inc. 12 p. https://www.cargill.com/about/cargill-timeline

• ***Summary:*** 1865-1940s: The early years:

1865–William Wallace (W. W.) Cargill becomes the proprietor of a grain warehouse in Conover, Iowa, at the end of the McGregor & Western Railroad line. A photo shows Mr. Cargill.

1870–Founder W.W. Cargill establishes his headquarters in Albert Lea, Minnesota, taking advantage of the Southern Minnesota Railroad's expansion.

1880–After moving his operations to La Crosse, Wisconsin, in 1875, W.W. Cargill expands his business beyond grain, handling commodities like coal, flour, feed, lumber and seeds, as well as investing in railroads, land, water irrigation and farms.

1885 W.W. Cargill and his two brothers own or control over 100 grain storage structures across Minnesota and the Dakotas, amounting to a total grain capacity of over 1.6 million bushels.

1895–Edna Clara, W.W. Cargill's daughter, marries childhood neighbor John MacMillan in La Crosse, Wisconsin, formally joining the two families. Their first son, John MacMillan, Jr., is born in December.

1912 Following W.W. Cargill's passing in 1909, John MacMillan, Sr., assumes leadership of his late father-in-law's company. Now located in Minneapolis, Minnesota, the company's operations are consolidated under a new name: Cargill Elevator Company.

1923–Cargill acquires Taylor & Bournique Company, a grain merchandising firm with offices along the East Coast and a private wire communication system. Acquiring the new technology gives Cargill a significant competitive advantage.

1930–Cargill incorporates and assumes its present name. The corporation sets its sights on global expansion, establishing small offices in Winnipeg, Canada; Rotterdam, Holland; and Buenos Aires, Argentina, which later closes due to World War II.

1932–Economic conditions prompt Cargill to implement a company-wide pay cut of 20%. Due to his father's ailing health, John MacMillan, Jr., becomes general manager of Cargill operations.

1945–After World War II, the company diversifies, growing its feed business with the acquisition of Nutrena Mills. Cargill also purchases a soybean meal and oilseed processing plant.

1947–With the war behind them, Cargill executives choose to reopen their South American offices. In Argentina, the company launches its hybrid seed business.

1950s-1980s: Global expansion.

1953–To conduct business in Europe, Cargill establishes a separate company known as TRADAX. To explore similar expansion into Asian markets, the company acquires Kerr Gifford, a US grain dealer based on the Pacific Coast.

1955–Cargill scientist Julius Hendel introduces scientific methods into the company's businesses, leading to the development of a centralized Research Department. At the division's Research Farm, electronic computing revolutionizes feed development.

1960–Following the death of John MacMillan, Jr., the family's next generation commits to appointing the best possible leadership. Erwin Kelm becomes the first president appointed outside the Cargill and MacMillan families.

1977–Whitney MacMillan becomes CEO of Cargill, ultimately overseeing continued global growth, increased public interaction, the company's initial steps into the developing world, and the creation of its formal statement of conduct.

1988–Cargill's portfolio of products and services expands significantly. Alongside grain, feed, seeds, oilseeds and corn milling, businesses include chemicals, cocoa, coffee, cotton, eggs, fertilizer, financial services, flour, juices, malt, meat, molasses, peanuts, petroleum, pork, poultry, rubber, salt, steel, turkey and wool.

1990s-present: New opportunities.

1999–Cargill establishes an official Strategic Intent and revises its company architecture, reorganizing its traditional divisions into 102 business units focused on its customers, innovation and performance.

2003–For the first time in history, Cargill's earnings surpass US $1 billion.

2008–Cargill introduces Truvia™ (pronounced Tru-VEE-a) natural sweetener, a great-tasting, zero-calorie sweetener made from rebiana, the best-tasting part of the stevia leaf.

2011–Cargill significantly grows its global animal nutrition business by acquiring Netherlands-based Provimi, adding premixes and additives to its portfolio of products.

2015–Cargill celebrates 150 years of helping people and organizations thrive.

636. Wikipedia, the free encyclopedia. 2020. Cargill, Inc. (Web article). https://en.wikipedia.org/wiki/Cargill. 15 p. Accessed July 13.

• ***Summary:*** The introduction begins: "Cargill, Incorporated is an American privately held global food corporation based in Minnetonka, Minnesota, and incorporated in Wilmington, Delaware. [2][3][4] Founded in 1865, it is the largest privately held corporation in the United States in terms of revenue. [5] If it were a public company, it would rank, as of 2015, number 15 on the Fortune 500, behind McKesson and ahead of AT&T. [6] Cargill has frequently been the subject of criticism related to the environment, human rights, finance, and other ethical considerations."

"A color photo shows: "The Cargill Lake Office, occupying the former Rufus Rand mansion on the main corporate campus in Minnetonka, formerly housed the

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company's top executives." [9]

The section titled "Criticism" has these contents:

5.1 Human rights abuses
5.2 Land grabbing
5.3 Food contamination
5.4 Deforestation
5.4.1 Soy
5.4.2 Palm oil
5.4.3 Cocoa
5.5 Air pollution
5.6 Tax evasion.

Concerning Soy, we read: "In 2003, Cargill completed a port for processing soya in Santarém in the Amazon region of Brazil, dramatically increasing soya production in the area and, according to Greenpeace, speeding up deforestation of local rain forest. [69] In February 2006, the federal courts in Brazil gave Cargill six months to complete an environmental assessment (EA). Initially supported by job-seeking locals, public opinion turned against the port as jobs have not appeared. In July 2006, the federal prosecutor indicated they were close to shutting down the port. [70]

"Greenpeace took its campaign to major food retailers and quickly won agreement from McDonald's along with UK-retailers Asda, Waitrose, and Marks & Spencer to stop buying meat raised on Amazonian soya. These retailers have, in turn, put pressure on Cargill, Archer Daniels Midland, Bunge, André Maggi Group, and Dreyfus to prove their soya was not grown on recently deforested land in the Amazon. In July 2006, Cargill reportedly joined other soy businesses in Brazil in a two-year moratorium on the purchase of soybeans from newly deforested land. [71][72]

"In 2019 the six largest agricultural commodity traders, ADM, Bunge, Cargill, LDC, COFCO Int. and Glencore Agri, committed themselves to monitoring their soy supply chains in Brazil's Cerrado. [73]

Note: Details of that agreement are included in this book, under the date June 2020. Cargill appears to be sincere about following the terms of the agreement.

637. Cargill, Inc. 2020. Cargill at a glance (Web article). https://www.cargill.com/about/cargill-at-a-glance 1 p. Accessed July 15.

• ***Summary:*** "160,000 employees. Working in 70 countries. More than 150 years experience."

"Our purpose is to nourish the world in a safe, responsible and sustainable way. Every day, we connect farmers with markets, customers with ingredients, and people and animals with the food they need to thrive. We combine our experience with new technologies and insights to serve as a trusted partner for food, agriculture, financial and industrial customers in more than 125 countries."

638. Cargill, Inc. 2020. Cargill sustainable soy (Web article). https://www.cargill.com/sustainability/sustainable-soy. 1 p. Accessed July 15.

• ***Summary:*** "Collaborating to end deforestation and sustainability across soy supply chains. Cargill has been working to end deforestation related to soy production since 2001. We promote sustainable practices to meet the world's growing demand for soy in food, animal feed and biofuels driven by increasing nutritional needs, changing dietary habits and desire for fossil-fuel alternatives."

"As a leading purchaser, processor and transporter of soybeans in major supply chains around the world, Cargill is committed to sustainable soy production, including protection of sensitive environments, reduction of greenhouse gas emissions and promotion of responsible working conditions. Cargill's role in the soy supply chain comes with significant responsibility, and we are keenly aware of the need to deliver customer solutions in a safe, responsible and sustainable way.

"We worked together with trusted advisors and local stakeholders to develop a Policy on South American Soy, which captures our commitment to a transparent and sustainable South American soy supply chain.

"In summary:

"Cargill will transform our supply chain to be deforestation free while protecting native vegetation

"Cargill will promote responsible production, which benefits farmers and surrounding communities

"Cargill respect and uphold the rights of workers, indigenous peoples and communities

"Cargill will uphold high standards of transparency through reporting of key metrics, progress and grievances

"Cargill Policy on Sustainable Soy–South American Origins

"Soy Action Plan

"Our Soy Action Plan, in support of our Sustainable Soy Policy, is an important component of the comprehensive actions we are taking across our supply chains to increase transparency and advance our sustainability commitments.

"The actions outlined in the plan are designed around three core concepts:

"Complete a comprehensive risk assessment of our soy supply chains direct and indirect suppliers. See our Risk Assessment Methodology.

"Prioritize resources where we can have the greatest impact.

"Focus on long-term, sector- and landscape-wide transformation to ensure both sustainability values and agricultural development simultaneously thrive.

"Cargill Soy Action Plan–South America Origins

"Our Progress

"We have been working with farmers, industry partners, communities, governments and NGOs to reduce deforestation and improve the sustainability of soy production for more than 15 years. This work started in the Brazilian Amazon with the Soy Moratorium, which has been

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extended indefinitely.

"Soy Progress Report–2019

"Soy Progress Report–2020 mid-year update–English, French, Portuguese, Spanish."

639. National Oilseed Processors Association (NOPA). 2020. States with where NOPA members have processing plants (Web article). https://www.nopa.org/oilseed-processing/nopa-plant-locations/

• ***Summary:*** Cargill, Inc. has soybean processing plants in the following cities and states (listed alphabetically by state):

Alabama: Guntersville.
Georgia: Gainesville
Illinois: Bloomington
Indiana: Lafayette
Iowa: Cedar Rapids East, Cedar Rapids West, Iowa Falls, Sioux City
Kansas: Wichita
Missouri: Kansas City
North Carolina: Fayetteville, Raleigh
Ohio: Sidney

640. Spots at front of book: Cargill, Inc. 2020.

















• ***Summary:***

(a) 1865–1 employee–1 country
(b) 1930–400 employees–4 countries.
(c) 1945–3320 employees–4 countries.
(d) 1953–4108 employees–6 countries.
(e) 1955–4390 employees–11 countries.
(f) 1960–4646 employees–17 countries. Orange logo.
(g) 1977–23,535 employees–5 countries. Green circle.
(h) 2003–99181 employees–58 countries. Thrive logo.
(i) 2015–143,000 employees–67 countries. Thrive logo.

Source: www.cargill.com/about/cargill-timeline.

641. *SoyaScan Notes.* 2020. Chronology of the Sinaiko family's work with soybeans. Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** 1891 March 4–Born Joseph Morris Sinaiko in Minsk, western Russia, the eldest of eight children of Alex and Rachel Sinaiko.

1904–The family immigrates to the United States,

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settling in Madison, Wisconsin, with relatives. Joseph enters school in the 5th grade. Later he completes two years at the University of Wisconsin, Madison, then leaves to work in his father's milling company.

1921–Joe moves to Cedar Rapids, Iowa. A year or so later he buys the six-story old Jackson Milling Co. building (it is dilapidated and not operating), changes the name to Iowa Milling Co., and starts his own business milling grains.

1922–Joe Sinaiko and Max Albert are both employed at the Iowa Milling Co., located at 602 Dewey Ave., according to the 1922 *McCoy's Cedar Rapids city directory.*

1928 spring–Iowa Milling Co. starts crushing soybeans to make oil and meal. This is the first company to crush soybeans west of the Mississippi River or in Iowa. The first years are difficult because soybeans are still a relatively new and unknown crop in America. Not long after he started came the stock market crash of 1929 and the Great Depression. Yet, surprisingly, soybean production and processing thrived during the 1930s, and so (eventually) did Iowa Milling Co.

1935 fall–Processing starts at the Illinois Soy Products Co. in Springfield, Illinois–run by I.D. "Ike" Sinaiko, with three expellers.

1936–The Andreas family moves their family milling company (named R.P. Andreas & Sons) to Cedar Rapids, Iowa (from Lisbon, Iowa), and renames it Honeymead Products Co. Dwayne Andreas (one of the sons) and Joe Sinaiko soon become close friends. Joe, whose is 27 years older than Dwayne, also becomes Dwayne's mentor in the milling and soybean businesses.

1939 fall–Quincy Soybean Co. begins operations at Quincy, Illinois, run by Irving J. Rosen (who married Marcella Sinaiko, Joe's younger sister).

1938–Max and Anna (Sinaiko) Albert organize the Galesburg Soy Products Co. in Galesburg, Illinois, and operate it as a family partnership.

1939 Nov. 1–The Decatur Soy Products Co. (the former Hight Co. elevator) starts operating in Decatur, Illinois. The officers are: I.D. "Ike" Sinaiko of Springfield, Illinois (president). Joe Sinaiko of Cedar Rapids, Iowa (vice-president). Jasper Di Giovanna of Decatur (manager).

1940 Feb. 14–A fire destroys the Illinois Soy Products Co. in Springfield, Illinois. It is quickly rebuilt as a modern plant with five expellers.

1942 Aug. A full-page ad in *Soybean Digest* titled "Feed more protein" is sponsored by the following five companies: (1) Decatur Soy Products Company (Decatur, Illinois), (2) Quincy Soybean Products Company (Quincy, Illinois), (3) Illinois Soy Products Company (Springfield, Illinois); (4) Galesburg Soy Products Company (Galesburg, Illinois), and (5) Iowa Milling Company (Cedar Rapids, Iowa). Each company is a small soybean crusher and all are owned (or were once owned) and run by members of the Sinaiko family.

1943 Jan.–Cargill purchases the Iowa Milling Co., a soybean crushing plant and feed mill, in Cedar Rapids, Iowa for $300,000. The initial push came from Julius Hendel of Cargill.

Joe Sinaiko, former owner of the Iowa Milling company, buys a 160-acre farm located 5½ miles northeast of Marion, in Linn County, Iowa. He will take possession in July.

1943 Sept. 5-7–The American Soybean Association holds its annual convention in Cedar Rapids, Iowa.

1943 Oct. 26–Ike Sinaiko sells the Illinois Soy Products Company in Springfield, Illinois, to Cargill, Inc. of Minneapolis, Minnesota. Cargill has been buying other Mid-West Soybean mills to assure itself of an adequate supply of soybean meal during the war years.

1943 Nov.–An article in *Soybean Digest* states (p. 13): "Joseph Sinaiko, well known soybean processor of the Middle West, has purchased the plant of Mid-Continent Vegetable Oil Co., Galesburg, Missouri. The plant, previously owned by a firm in Kansas City, is in an interior town without railroad facilities, but it is near Carthage, Missouri, in the center of a rich feeding belt. Joe is also installing equipment for a soybean processing plant at Fairfield, Iowa. He was a pioneer in Iowa soybean processing..."

1944 March–An ad in *Soybean Digest* states (p. 24) that Cargill now has soybean processing plants in Springfield, Illinois, and Cedar Rapids, Iowa.

1944 June 27–Cargill officially takes over Joe Sinaiko's soybean processing plant in Cedar Rapids, Iowa–according to Cargill employment records.

1944 Sept.–An article in *Soybean Digest* titled "Some early processors" states (p. 18-19): "First soybeans processed west of the Mississippi River were at Cedar Rapids, Iowa, by Iowa Milling Co., it is claimed. Joe Sinaiko and Max Albert, partners in the venture, installed the equipment consisting of two expellers, in the fall of 1927 and operations began the next spring. Albert later established the Galesburg Soy Products Co., while Sinaiko operated Iowa Milling until he sold to Cargill in 1943." Note: Max Albert was Joe's brother-in-law; he married Joe's younger sister, Anna Sinaiko.

1944 Oct. 11–The Cargill soybean processing plant in Cedar Rapids burns to the ground. An article in *Soybean Digest* (Nov., p. 13) states: "The plant was the first soybean processing plant to be established west of the Mississippi. It was first operated in 1927 by Joe Sinaiko and Max Albert."

1945 June–Dwayne Andreas' draft classification is changed to 1A. In anticipation of his being called into the military, the Andreas family sells 60% of its Honeymead plant (in Cedar Rapids, Iowa) to Cargill, Inc. Dwayne Andreas resigns as vice president of Honeymead and goes to work for Cargill as general manager of their Cedar Rapids plant.

1945 Oct.–Cargill purchases (for $1.6 million) the entire capital stock of Nutrena Mills Inc., a leading Midwest feed

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manufacturer with three mills.

1945 Dec.–Joe Sinaiko, Cedar Rapids, buys the new Washington, Iowa, soybean processing plant of Honeymead Products Co.

1946 Oct.–An article in *Soybean Digest* states (p. 22): "Cargill, Inc., announces the purchase of the solvent process soybean plant at Washington, Iowa, from Joseph M. Sinaiko, pioneer Iowa processor. The firm announces at the same time the sale of its Cedar Rapids, Iowa, expeller plant to Sinaiko. The latter was former owner of the Cedar Rapids plant under the name of Iowa Milling Co."

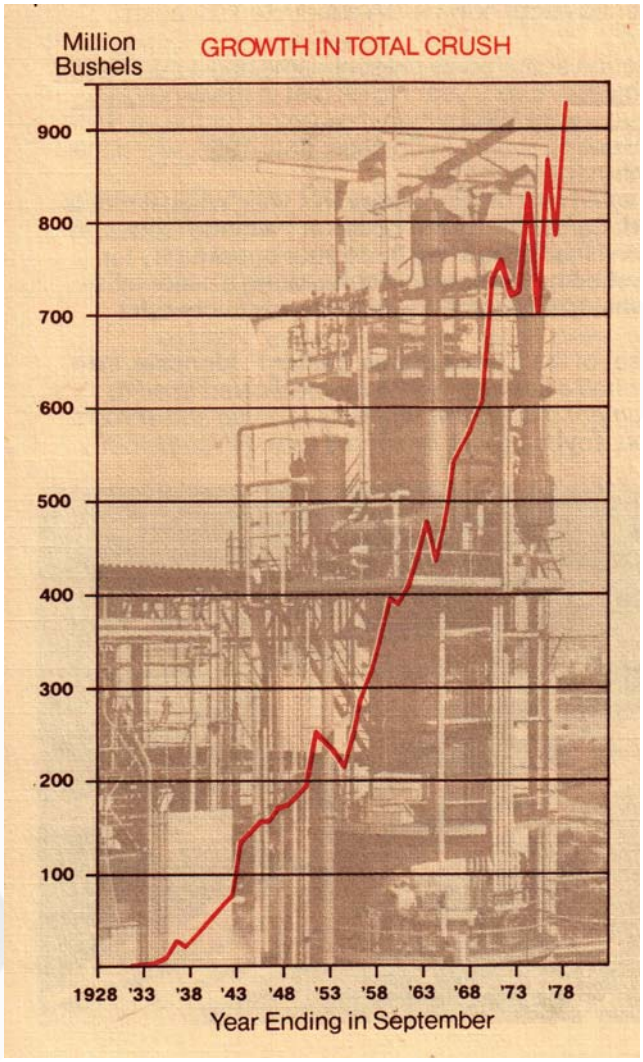
Joe Sinaiko enters the very competitive field of corn processing as his Corn Starch and Syrup Co. begins operation near Cedar Rapids. His plant turned out to be more efficient than those of his competitors. 1965 Nov.–Archer Daniels Midland Co. (ADM) purchases the Galesburg Soy Products Co. (Galesburg, Illinois), formerly owned by the Max Albert family.

1966 June 1–Cargill signs the papers by which they purchase the Iowa Milling Co. (for the second time) from Joe Sinaiko. The transition took one year, and was completed on 1 June 1967.

1970 May–Joe (now age 79) announces the groundbreaking for Corn Sweeteners Inc. near Cedar Rapids.

1971–Joe sells his interest in Corn Sweeteners to Archer Daniels Midland Co., which uses the plant to enter the corn processing industry.

1986–Joe Sinaiko's second wife, Janet Burnstein, dies in Cedar Rapids, Iowa.



An asterisk (*) at the end of the record means that SOYINFO CENTER does not own that document. A plus after eng (eng+) means that SOYINFO CENTER has done a partial or complete translation into English of that document. An asterisk in a listing of number of references [23* ref] means that most of these references are not about soybeans or soyfoods.

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