Industry & Trade Summary

Oilseeds

USITC Publication 3576
February 2003

OFFICE OF INDUSTRIES
U.S. International Trade Commission
Washington, DC 20436

UNITED STATES INTERNATIONAL TRADE COMMISSION

COMMISSIONERS

Deanna Tanner Okun, Chairman
Jennifer A. Hillman, Vice Chairman
Lynn M. Bragg
Marcia E. Miller
Stephen Koplan

Director of Operations

Robert A. Rogowsky

Director of Industries

Vern Simpson

This report was prepared principally by

John Reeder

Agricultural Crops and Specialty Products Branch
Agriculture and Forest Products Division

Under the direction of

Cathy Jabara and Stephen Burket

Address all communications to
Secretary to the Commission
United States International Trade Commission
Washington, DC 20436

PREFACE

This summary report provides information on all commonly known oilseeds including soybeans, sunflower seed, cotton seed, flaxseed, and canola seed. Also included are products classified as oilseeds but often used for other purposes, such as sesame seed and poppy seed. All oilseeds are provided for in chapter 12 of the Harmonized Tariff Schedule of the United States (HI'S). Peanuts and vegetable oil (extracted from oilseeds) are covered in separate summary reports.

This report provides information on the structure of the U.S. and foreign oilseed farming sectors, domestic and foreign tariff and nontariff measures, and the competitive conditions in domestic and foreign oilseed markets. The information covers the period 1997-2001 or crop years 1997/98 through 2001/02 (crop year begins September 1). Listed below are the individual summary reports published to date on the agriculture and forest products sectors.

USITC publication number	***Publication date***	***Title***
2459	November 1991	Live Sheep and Meat of Sheep
2462	November 1991	Cigarettes
2477	January 1992	Dairy Produce
2478	January 1992	Oilseeds
2511	March 1992	Live Swine and Fresh, Chilled, or Frozen Pork
2520	June 1992	Poultry
2544	August 1992	Fresh or Frozen Fish
2545	November 1992	Natural Sweeteners
2551	November 1992	Newsprint
2612	March 1993	Wood Pulp and Waste Paper
2615	March 1993	Citrus Fruit
2625	April 1993	Live Cattle and Fresh, Chilled, or Frozen Beef and Veal
2631	May 1993	Animal and Vegetable Fats and Oils
2635	June 1993	Cocoa, Chocolate, and Confectionery
2636	May 1993	Olives
2639	June 1993	Wine and Certain Fermented Beverages
2693	October 1993	Printing and Writing Paper
2702	November 1993	Fur Goods
2726	January 1994	Furskins
2737	March 1994	Cut Flowers
2749	March 1994	Paper Boxes and Bags

PREFACE—*Continued*

USITC publication number	*Publication date*	*Title*
2762	April 1994	Coffee and Tea
2859	May 1995	Seeds
2865	April 1995	Malt Beverages
2875	May 1995	Certain Fresh Deciduous Fruits
2898	June 1995	Certain Miscellaneous Vegetable Substance and Products
2917	October 1995	Lumber, Flooring, and Siding
2918	August 1995	Printed Matter
2928	November 1995	Processed Vegetables
3015	February 1997	Hides, Skins, and Leather
3020	March 1997	Nonalcoholic Beverages
3022	April 1997	Industrial Papers and Paperboards
3080	January 1998	Dairy Products
3083	February 1998	Canned Fish, Except Shellfish
3095	March 1998	Milled Grains, Malts, and Starches
3096	April 1998	Millwork
3145	December 1998	Wool and Related Animal Hair
3148	December 1998	Poultry
3171	March 1999	Dried Fruits Other Than Tropical
3268	December 1999	Eggs
3275	January 2000	Animal Feeds
3350	September 2000	Grain (Cereals)
3352	September 2000	Edible Nuts
3355	September 2000	Newsprint
3373	November 2000	Distilled Spirits
3391	January 2001	Cotton
3461	October 2001	Cured Fish
3463	October 2001	Fresh or Frozen Fish
3490	February 2002	Wood Pulp and Waste Paper

CONTENTS

CONTENTS—*Continued*

CONTENTS—*Continued*

Page

Tables—*Continued*

ITC READER SATISFACTION SURVEY

Industry and Trade Summary: Oilseeds

The U.S. International Trade Commission (USITC) is interested in your voluntary comments (burden less than 10 minutes) to help assess the value and quality of our reports, and to assist in improving future products. Please **return survey by facsimile (202-205-2384) or by mail** to the USITC, or visit the USITC Internet home page (*http://reportweb.usitc.gov/reader_survey/readersurvey.html*) to electronically submit a Web version of the survey.

(Please print; r*esponses below not for attribution):*

Your name and title: _____

Organization (if applicable): _____

Which format is most useful to you? ❑ CD-ROM ❑ Hardcopy ❑ USITC Internet site

Circle your assessment of each factor below: **SA** = strongly agree, **A** = agree, **N** = no opinion, **D** = disagree, or **SD** = strongly disagree.

Value of this report:					
▶ Statistical data are useful	SA	A	N	D	SD
▶ Other non-numerical facts are useful	SA	A	N	D	SD
▶ Analysis augments statistical data/other facts	SA	A	N	D	SD
▶ Relevant topic(s)/subject matter	SA	A	N	D	SD
▶ Primary or leading source of information on this subject	SA	A	N	D	SD
Quality of this report:					
▶ Clearly written	SA	A	N	D	SD
▶ Key issues are addressed	SA	A	N	D	SD
▶ Charts and graphs aid understanding	SA	A	N	D	SD
▶ References cite pertinent sources	SA	A	N	D	SD

Other preferred source of information on this subject: _____

Specify chapters, sections, or topics in report that are most useful: _____

_____

_____

Identify any type of additional information that should have been included in report: _____

_____

_____

Suggestions for improving report: _____

_____

_____

Please update your mailing and electronic addresses below (voluntary)-

Mailing address: _____

City, state, and zip code: _____

E-mail address: _____

OMB No.: 3117-0188

FOLD

UNITED STATES
INTERNATIONAL TRADE COMMISSION
WASHINGTON, DC 20436

OFFICIAL BUSINESS
PENALTY FOR PRIVATE, USE $300

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 12840 WASHINGTON, DC

POSTAGE WILL BE PAID BY ADDRESSEE

U.S INTERNATIONAL TRADE COMMISSION
500 E STREET, SW.
WASHINGTON, DC 20277-2840

ATTN:
OFFICE OF INDUSTRIES
ITS:Oilseeds

ABSTRACT

This summary summarizes trade and industry conditions for soybeans and other oilseeds during marketing years 1997/98 to 2001/02.

- Foreign markets purchased about 40 percent of U.S. oilseed output during 1997-2001, but Brazil and Argentina successfully challenged the prior U.S. dominance in world oilseed markets. The U.S. market share of world soybean exports fell from 60 to 43 percent by marketing year 2001/02.

- U.S. exports of soybeans and other oilseeds–exceeding $5.5 billion in 2001–dropped by 25 percent ($2 billion) during 1997-2001 as the two South American competitors sharply expanded production and exports, and as U.S. farm prices fell by a third. The United States is still the single leading world producer and exporter of oilseeds.

- U.S. farmers who grow oilseed crops–overwhelmingly soybeans, but also cottonseed, sunflowerseed, flaxseed, and canola, number about 400,000, and are principally located in the Corn Belt. The number of those U.S. farmers declined by about 7 percent during 1992-97, according to the U.S. Census Bureau, most of the loss being among the small-sized or "family" farmers.

- Physical production of oilseeds rose in the United States--the harvested acreage of oilseed by 6 percent and the total output in bushels by 9 percent during 1997-2001. The lower farm price of soybeans pulled down the value of U.S. oilseed production by 27 percent ($5 billion) to $14 billion in 2001. With U.S. farm prices the lowest in 30 years, the U.S. Department of Agriculture (USDA) assistance programs for farmers cushioned these effects under the Federal Agriculture Improvement and Reform Act (the farm bill).

- The U.S. merchandise trade balance in oilseeds in 2001 was a positive $5.4 billion. U.S. exports of $5.6 billion in 2001 went primarily to the EU, China, Mexico, Japan, and other Southeast Asian countries. About half of the $216 million of U.S. oilseed imports came from Canada as canola, soybeans, sunflowerseed, and flaxseed. U.S. imports duties on oilseed imports are very minor, averaging less than1 percent ad valorem in 2001. U.S. exports of soybeans face substantial tariff and nontariff measures, particularly related to phytosanitary regulations on genetically modified (GM) soybeans.

INTRODUCTION

U.S. production of the oilseeds covered in this report amounted to about $14 billion at the farm level in 2001. Soybeans accounted for about 91 percent of such production; cottonseed, 4 percent; sunflower seed, 2 percent; and the remaining oilseeds (canola and flaxseed), 1 percent. Oilseeds are used chiefly to produce vegetable oil and oilseed meal, which in turn are used to produce food fats and oil products, as well as animal feed for poultry, hogs, and cattle. The U.S. Government price-support system provides oilseed farmers in the United States with substantial benefits (loan guarantees and direct payments), and the U.S. Government (the U.S. Department of Agriculture) operates an export credit guarantee program to assist U.S. exports of oilseeds (and other U.S. farm products).

Foreign markets are very important for U.S. oilseed products, purchasing about 38 percent of domestic output. Soybeans are the principal U.S. oilseed export. Imports account for 3 percent of consumption, and the leading U.S. imports are sesame seed (imported chiefly from Latin American and Asian countries), rapeseed (canola) (imported principally from Canada), and cottonseed.

World trade of oilseeds is substantial and involves most of the leading countries of the world either as exporters, importers, or both. In 2000 (the latest year for which world data are available), world imports in oilseeds amounted to about $16.4 billion, according to data of the Food and Agriculture Organization (FAO).[1] In 2001, U.S. oilseed exports of $5.6 billion constituted about 11 percent of the $53 billion of exports of all U.S. agricultural products.[2] The following is a brief description of the key oilseeds cited in this report.

Soybeans

The soybean is the principal source of vegetable oil for the U.S. diet; the leading supplier of protein needed to produce poultry, pork, and beef; and an important source of raw materials for the chemical industry. Soybeans are the seeds of an annual plant that requires from 75 to 175 days to mature after emergence, depending on the variety of the soybean and the growing conditions. The soybean yields on the average, by weight, 18 percent oil, 79 percent meal, and 3 percent miscellaneous byproducts including waste. Soybeans are the second leading U.S. field crop, preceded only by corn, for which the value of commercial production is greater.

Certified soybean seed (as well as other certified crop seeds) consists of quality seed of superior varieties grown and distributed to insure genetic identity and purity. In the United States, the production of such seeds is controlled largely by private seed companies. Certified seed covered in a separate summary.

[1] FAO, FAO Statistics Database, *http://appt.fao.org*, retrieved June 12, 2002.

[2] Compiled from official statistics of the U.S. Department of Commerce. See USITC, *Shifts in U.S. Merchandise Trade 2001*, USITC pub. No. 3525, July 2002, table 4-1.

The principal uses of soybeans are for reduction into meal and oil ("crushing"), for use as a planting seed, for direct use in animal feed, or for human consumption. In 2001/02 (the latest full year for which data are available), 91 percent of the domestic consumption of 1,861 million bushels of soybeans was crushed to produce soybean meal and soybean oil; the remaining 9 percent was used for seed, directly for animal feed, for food, or for other uses.[3] In recent years, about 64 percent of the value of processed soybeans products attributed to the sale of soybean meal and 36 percent from that of soybean oil.[4]

Cottonseed

Cottonseed is a byproduct of cotton ginning. About one-half (48 percent) of domestic output of cottonseed was used to produce vegetable oil during 1997/98 to 2001/02; the other one-half (52 percent) was used largely for cattle feed.[5] Cottonseed yields 16 to 17 percent of its weight as cottonseed oil; the remainder consists of oilcake, linters, and hulls. In 2000, about 44 percent of the reported U.S. consumption of cottonseed oil was to make salad or cooking oil, 24 percent for baking and frying fats, and the remaining 32 percent mostly for other edible food products.[6] Since cottonseed is bulky and perishable, most of the crop is processed as quickly as possible after harvest. Because of its bulk and perishability, little cottonseed enters international commerce.

Since 1998/99, more cottonseed in the United States has been used as cattle feed than crushed for vegetable oil. Cottonseed is particularly well suited for direct feeding to cattle because of its palatability and high protein and energy content. In Texas and California, the two-leading producing States, most of the cottonseed produced is fed to cattle.

Sunflower Seed

Sunflower seed, one of the world's major oil-bearing seeds, is obtained from the sunflower, a hardy drought-resistant plant well suited to the colder or arid areas where many other oilseed crops cannot be grown. Although primarily used as a source of vegetable oil, sunflower seed also is eaten as an edible snack nut and used in bird feed mixtures. The varieties of sunflower seeds grown in the United States for bird feed and human food have a larger kernel than those grown for oil.

[3] USDA, ERS, *Oil Crops Situation and Outlook Yearbook*, Oct. 2001, p. 47.

[4] Ibid., table 23, p. 54.

[5] Ibid., table 26, p. 56.

[6] U.S. Bureau of the Census. *Current Industrial Reports: Fats and Oils, Production, Consumption, and Stocks, Crop Year*, 2000, issued Aug. 2001, retrieved from *www.census.gov/cir/www/811/m311k.html*, June 12, 2002.

Typical sunflower seed yields oil equivalent to about 40 percent of the weight of the kernel and hull. In 2000, most U.S. consumption of sunflower seed oil was used primarily for salad and cooking oil and secondly for frying and baking fats (shortening). About 2 percent of sunflower seed oil consumption was for making resins and plastics, according to the U.S. Bureau of the Census.[7]

There are two distinct types of sunflower seed—oil stock and confectionery—which go into separate uses. The oil–stock sunflower seed used to produce oil and meal ("crushed") accounted for about 61 percent of apparent U.S. consumption during 1997/98 to 2001/02.[8] Confectionery sunflower seed accounted for 39 percent of apparent U.S. consumption over the past 5 years. Demand for confectionery sunflower seed has grown sharply over the past several years, and roasted, shelled sunflower seeds are frequently found in retail stores as alternatives to peanuts or other snack foods.

Flaxseed

Virtually all domestic flaxseed produced in the United States (except that used for seeding) is used for extracting linseed oil. Flax grown for fiber is a different type, and is not suitable for oil production, owing to its low seed yield. In the United States, little or no flax is grown specifically for fiber. Flaxseed yields about 36 percent of its weight in linseed oil, with the residual linseed cake or meal used for feeding livestock. The value of linseed oil obtained from flaxseed represents three-quarters of the combined value of the linseed oil and the linseed meal. Linseed oil can be used only for inedible purposes in the United States; in 2000, the most important uses were in the production of resins and plastics (40 percent of reported U.S. consumption), and paint and varnish (39 percent).[9]

Canola (rapeseed)

Rapeseed is the seed obtained from several species of the genus *Brassica,* which also includes mustard, turnips, and cabbage. Traditional rapeseed, when pressed, typically yields about 40 percent of its weight in inedible rapeseed oil, which is noted for its high content of erucic acid, a known carcinogen. The edible variety of rapeseed that has very low or no erucic acid is called "canola." In 2000, three-quarters of reported U.S. consumption all types of rapeseed oil was in the form of salad and cooking oils, 20 percent in the form of baking and frying fats and margarine, and about 5 percent in industrial products.[10]

[7] Ibid.
[8] USDA, ERS, *Oil Crops*, and table B-4.
[9] U.S. Bureau of the Census, *Current Industrial Reports: Fats and Oils*.
[10] Ibid.

Other Minor Oilseeds

Sesame seed is grown chiefly in tropical countries; none is grown domestically. Sesame can be used whole, or it can be crushed for oil and meal. In the United States, the whole seed is used primarily as a topping for bakery products, principally in competition with poppy seed, and as a filling in pastries and candy. Some low-grade sesame seed is also used for birdseed. When crushed, sesame seed yields an exceptionally high proportion of superior quality oil (about 47 percent of the weight of the seed).

Safflower seed, an annual crop, is grown principally in the United States, Mexico, India, and the Middle East. In the United States, virtually all safflower seed grown is reduced into vegetable oil and meal. This oilseed contains about 32 to 40 percent vegetable oil. The meal, is generally fed to livestock as a protein feed supplement. U.S. farmers often grow safflower seed under irrigation in a rotation pattern with grains or other crops.

The other leading oilseeds grown in the world—copra, castor beans, and poppy seed—are not produced in significant commercial quantities in the United States. Copra is the dried meat kernel of the coconut, from which coconut oil is expressed, with the average oil yield of about 64 percent of the weight of the copra. Castor beans are the seed of the castor plant, a perennial crop in the tropics and subtropics and an annual crop in temperate areas, and are utilized almost entirely to make castor oil. Castor oil constitutes about 45 percent of the weight of the beans and is an inedible oil used chiefly in industrial applications, with minor amounts used in pharmaceuticals. Poppy seeds are used chiefly as a bakery topping, in competition with sesame seed.

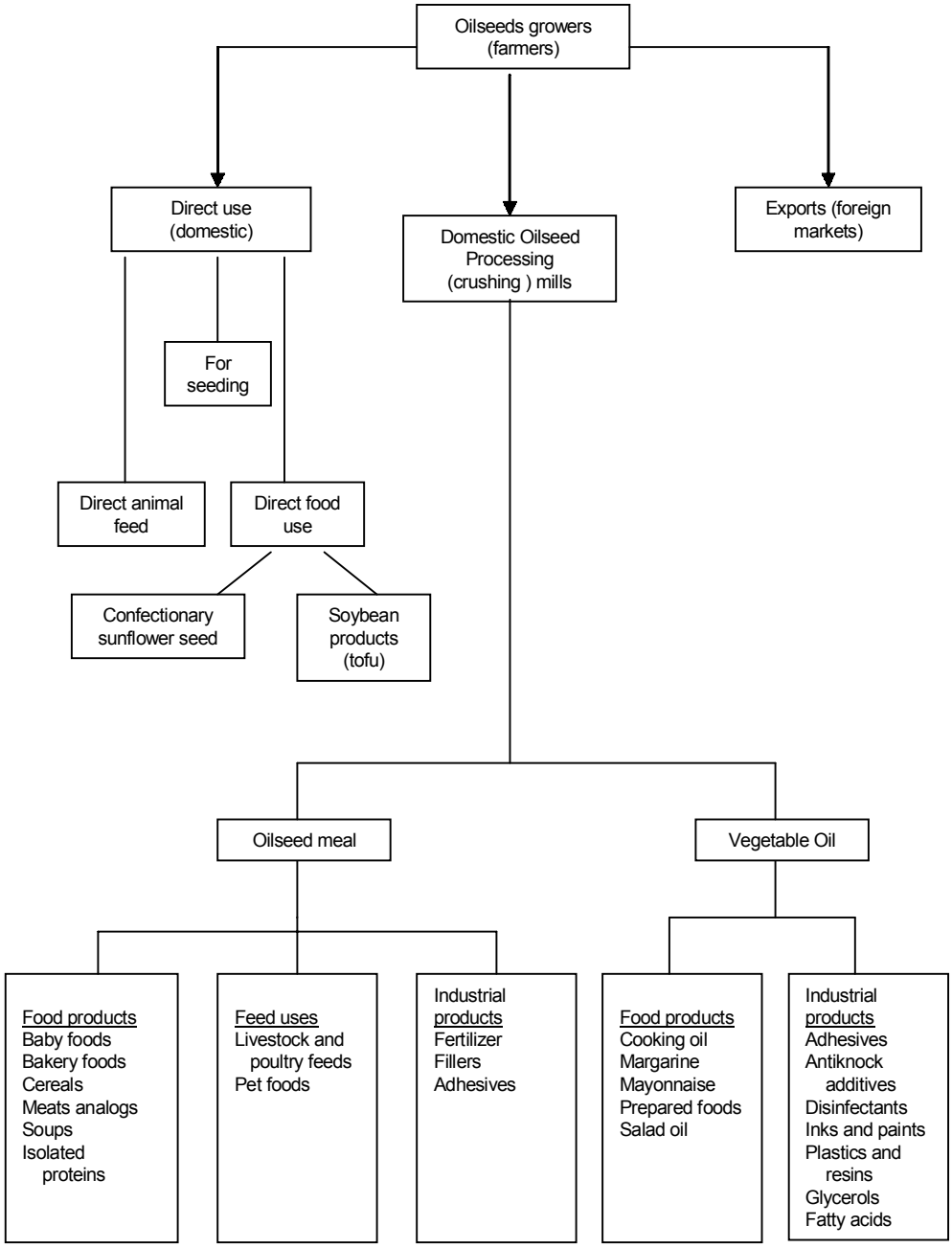
The other oilseeds classified in chapter 12 of the HTS include shea nuts, palm nuts and kernels, apricot and peach kernels, and oilseeds and oleaginous fruits, not elsewhere classified. None of these oilseeds are traded in significant volumes either domestically or internationally. None is grown domestically.

U.S. INDUSTRY PROFILE

Industry Structure

The structure of the U.S. oilseed industry is illustrated in figure 1. The North American Industrial Classification System (NAICS) categories applicable to the industry are 11111, soybean farming; 11112, oilseed (except soybean) farming; and 11119, “other grain” farming.

Figure 1
Oilseeds: Structure of U.S. industry



Source: Compiled from industry sources.

The number of U.S. oilseed farms declined by 7 percent from about 430,000 in 1992 to about 402,000 in 1997 (table B-2).[11] Of the oilseed farms existing in 1997, 355,000 were soybean farms (88 percent of the total); 31,000 were cotton farms (9 percent); 11,000 were sunflower seed farms (2 percent); 3,000 were canola farms (1 percent); and 1,000 were safflower seed and flaxseed farms (less than 0.3 percent).

The soybean farm sector is the key component of the domestic oilseed industry. In 1997, the average U.S. soybean farmer grew 186 acres of soybeans.[12] Large farms increasingly dominate soybean growing. In 1997, there were 56,000 farms (each having at least 1,000 acres of soybeans) that accounted for nearly half (47 percent) of U.S. production,[13] up from a 32-percent share in 1987. By comparison, the 145,000 small farms (each with less than 260 acres) produced less than 11 percent of U.S. output in 1997.

In 2001, soybeans were grown in commercial quantities in 29 States; however, 7 States (Illinois, Iowa, Indiana, Minnesota, Nebraska, Ohio, and Missouri) accounted for 63 percent of the 2000 crop, according to the U.S. Department of Agriculture.[14] The so-called "Corn Belt States," including Illinois (16 percent of the 2000 crop), Iowa (16 percent), Indiana (10 percent), Minnesota (9 percent),and Ohio (7 percent) dominate the production of soybeans. Corn-Belt States have consistently had the lowest cost of production of all U.S. soybean regions, in part a reflection of their favorable rainfall and climate, and excellent soils.[15]

Soybeans in the Corn-Belt States are planted in a crop rotation pattern complementing corn, wheat, and other grain and forage crops. Soybeans are often planted in lieu of corn and other grain when adverse weather conditions delay spring planting of the grain crops. Typical rotation patterns are corn-soybeans-corn or occasionally corn-soybeans-soybeans-corn. In southern areas, soybeans are frequently planted in the same growing season after winter wheat ("double-cropping"). Double-cropping consists of growing two usually different crops consecutively in the same field during a single growing season, planting schedules differ slightly.

U.S. cottonseed is produced in commercial quantities in 17 States, mostly in the Southeast or Southwest.[16] Six States produced about 84 percent of U.S. cotton output in 2000; Texas accounted for about 25 percent of U.S. cotton output, followed by California (14 percent), Mississippi (10 percent), and Georgia, Arkansas, and North Carolina (8 percent each).

Sunflower seeds are grown in 39 States, but 92 percent of U.S. output is grown in North Dakota, South Dakota, Kansas, and Minnesota. North Dakota was the leading producing State, with a 52 percent share of 1997 U.S. sunflower seed production;[17] South Dakota was

---

[11] USDA, NASS, *1997 Census of Agriculture*, Vol. 1, 1999.

[12] Ibid., table 49.

[13] Ibid.

[14] USDA, *Crop Production*, Nov. 2001, *http://usda.mannlib.cornell.edu/reports/nasser/field/pcp-bb/2001*, retrieved June 21, 2002.

[15] See later discussion on soybean costs of production.

[16] USDA, *Annual Crop Production*, Jan. 2001, *http://usda.mannlib.cornell.edu/reports/nasser/field/pcp-bb/2001*, retrieved June 21, 2002.

[17] USDA, NASS, *Census of Agriculture*, table 26.

the second-leading State with a 33 percent share. Kansas and Minnesota were minor producers, with 4 percent and 3 percent shares of U.S. sunflower seed output, respectively.

Most of the other minor oilseeds are grown in the Northern Tier States and in California. North Dakota, South Dakota, Montana and Minnesota account for all U.S. production of flaxseed. North Dakota produced 87 percent of U.S. flaxseed in 1997; South Dakota, 7 percent; and Minnesota, 4 percent. Safflower seed, another minor oilseed, is grown in 10 States, according to USDA, but California and Montana, with 84 percent and 6 percent of total U.S. output in 1997, respectively accounted for all but a small fraction of U.S. safflower seed production. Three Northern Tier States grew 98 percent of U.S. rapeseed or canola: North Dakota (67 percent of 1997 U.S. output), Minnesota (27 percent), and Montana (4 percent).

Employment

Data on employment in the U.S. oilseed industry are not available separately because the farm labor used to produce oilseeds typically is used to produce a variety of other field crops or livestock. A considerable amount of actual farm labor is "unpaid" farm labor of the farmer and family members. As indicated above, there were a reported 402,000 oilseed farms (generally with at least one farmer each) in 1997. In addition to their own labor, farmers also employ hired labor, either seasonally or full time, to produce oilseeds. Hired labor is used relatively infrequently in sunflower seed and soybean production, but is more important in cotton farming. Hired labor costs have accounted for about 9 percent of total costs of cotton production.[18] Farmers may also contract for fertilizer or pesticide application by outside companies instead of doing these chores themselves.

Most employment in the farming sector is seasonal. Soybeans generally are planted in May and June, cultivated during July and August, and harvested between September and mid-November.[19] Cottonseed, canola, sunflower seed, safflower seed, and flaxseed follow slightly different crop patterns.

[18] Based on hired labor costs of $30 per planted acre out of total costs of $325 per acre in Texas, the leading cotton producer in 1989. Source: USDA, ERS, *State Level Costs of Production*, found at *http://usda.mannlib.cornell.edu/*, retrieved Oct. 31, 2002.

[19] James Schaub, and others, *The U.S. Soybean Industry*, USDA, May 1988, p. 1.

Labor Intensity, Skill Levels, Level of Automation, and Productivity

Farm labor involves a multitude of mechanical, horticultural, and managerial skills. For most oilseed farmers, economic returns from growing oilseeds can be attributed to their own labor, managerial abilities, and returns on capital (such as machinery and land), and risk taking. The growing of oilseed crops is a relatively land-intensive and capital-intensive activity that over the past several decades has become a highly mechanized operation on increasingly larger farms in the United States. Most oilseed farmers operate as sole proprietors, owning the land they farm. In recent years, about 84 percent of soybean farms were owner operated or sole proprietorships, 13 percent were owned by partnerships, and 3 percent were run by corporations.[20]

The commonly accepted measure of productivity in farming is the crop yield. In the United States, oilseed yields increased from an average of 28.1 bushels per acre in the 1970s, to 30.3 bushels per acre in the 1980s, because of better cultivating and harvesting practices and improved plant varieties.[21] Soybean yields during 1997-2001 fluctuated between 37 and 40 bushels per acre, and averaged 38.3 bushels per acre.[22] Annual crop yields vary widely since weather is a key factor in production. For example, fewer than 4 percent of soybean farmers irrigate their crops; thus, crops are sensitive to variable rainfall.

Since the early 1990s, U.S. soybean farmers have increasingly adopted tillage practices called "conservation tillage," to reduce production costs and mitigate soil erosion and environmental runoff of farm chemicals.[23] USDA farm support requirements in farm legislation after 1985 spurred such conservation measures.[24] Nearly 45 percent of U.S. soybean acreage was conservation tilled in 2001, according to USDA data. Higher yields from less mechanical tillage (plowing of the soil) occur from improved soil moisture retention and decreased soil compaction, but with less tillage, weed control has shifted to more intensive herbicide application. As a result, more herbicides are applied to soybeans than any other crop except corn.[25] Generally less than 40 percent of soybean acreage received fertilizer in recent years, unlike corn and cotton where virtually the entire crops did, according to USDA.

Moreover, U.S. farmers have increasingly used genetically modified (GM) oilseeds to combat crop losses because of insects and needs. This is discussed below under "research and development."

---

[20] James Schaub, and others, *The U.S. Soybean Industry*, USDA, May 1988, p. 8.

[21] USDA, ERS, *Oil Crops*, table 2.

[22] Ibid.

[23] Conservation tillage are planting practices designed specifically to reduce soil erosion and related run off of farm chemicals such as fertilizers and herbicides.

[24] Mark Ash, ERS, USDA, Soybean: *Background and Issues for Farm Legislation*, Electronic Outlook Report from the ERS, *www.ers.usda.gov*, July 2001, p. 2.

[25] Ibid.

Vertical and Horizontal Integration

Oilseed farmers, as indicated above, are numerous and decentralized, with the majority of farmers either full or part owners of a single farm. There has been increasing concentration of soybean production among the larger farms.

The declining number of individual farms in the United States has resulted in larger farms. In 1992, the average U.S. soybean farm harvested 148 acres, whereas in 1997 each farm had 187 acres of soybeans.[26] Larger soybean farms (those having 500 acres or more each) grew 70 percent of U.S. production of soybeans in 1992 and 75 percent in 1997. The number of these large farms meanwhile grew from 21,000 in 1992 to 31,000 in 1997, according to USDA data. The number of small farms with less than 250 acres fell by 42,000 farms from 314,000 in 1992 to 272,000 in 1997.

Part of the reason for the increasing concentration among oilseed farms relates to greater mechanization and to higher specialization of farms into fewer crops and little or no livestock on the farm, and thus less need for labor. With less livestock and fewer crops on which to use farm labor, larger farms have become more profitable and small ones less so.

Marketing and Pricing Practices

Farmers either market their crops to export markets or sell to U.S. oilseed crushing mills. Because soybeans are a largely homogeneous, fungible commodity, price is often an overriding factor in the purchaser's decision. Within U.S. regions, prices differ by the cost of transport (mostly by rail or river barge) to common market areas, such as an export terminal (the "basis").[27] Rail is the dominant mode of transportation for oilseeds from primary grain and oilseed elevators to end users; there were seven major railroads (so-called "Class I") carrying grain and oilseeds in the United States in 1999.[28]

As a bulk product, U.S. soybean prices are heavily dependent on the transportation and oilseed trading sector. Because transportation is relatively costly and time-consuming, farmers generally sell within a limited geographic area surrounding their farms, usually to a country elevator or to adjacent oilseed mills, although farmers located near a river, rail, or port elevator sometimes bypass the county elevator and ship directly to an export terminal

[26] USDA, NASS, *Census of Agriculture*, table 49.

[27] For further elaboration, see Robert Oehrtman and L.D. Schnake, "Marketing Channels and Storage," *Grain Marketing* (Gail Cramer and Eric Wailes, editors), 1993, pp. 61-120.

[28] Data of the Assoc. of American Railroads, and the Interstate Commerce Commission, quoted in, "BNSF-CN Deal Brings Rail Merger Front and Center," *Feedstuffs*, Mar. 18, 2000, p. 1.

or subterminal.[29] Farmers market their crops to competitive grain elevators located within a "draw area."[30]

Grain and oilseed trading is concentrated among a relatively small number of companies in the United States and abroad. The merger of Cargill and Continental Grain Co.'s grain operations in 1999 created the largest U.S. grain trading company, with nearly 15.5 million tons of licensed storage capacity in 318 U.S. locations.[31] The storage capacity of the 10 largest U.S. grain elevator, milling and processing companies in 1999, of which Cargill/Continental had a 29-percent share, and the second largest company, ADM, had a 28-percent share.[32] Three farm cooperatives, Farmland Grain Division, Cenex Harvest State Cooperative, and Riceland Foods, together accounted for about 19 percent of this storage capacity in 1999. With regard to the concentration of U.S. grain export sales in 1999, the four-leading firms accounted for 65 percent of U.S. soybean exports, according to USDA data.[33]

Farmers have three basic price strategies available to them: a forward cash contract, in which quantity and price arrangements are made prior to delivery from the field or storage facility; a cash market under which a given quantity is sold for immediate delivery at the current market price; and a price-later contract, which provides for immediate delivery but at a price to be determined at a later date. In 1996, 60 percent of U.S. producers with sales of $250,000 or more used forward contracts, according to a USDA survey.[34]

Prices for future delivery of soybeans may be based either on the current cash-market or futures-market price quoted by the Chicago Board of Trade, depending on the particular arrangement. Most U.S. farmers typically deliver slightly over one-half of their crop immediately after harvest to an off-farm location, such as a grain elevator or mill, and store the remaining crop on-farm for marketing during the following winter or spring.

---

[29] See United States of America (U.S. Department of Justice (DOJ)), Plaintiff, v. Cargill, Incorporated and Continental Grain Company, defendants, *Competitive Impact Statement*, Case No. 1:99CV01875, July 23, 1999, found at *www.usdoj.gov/atr/cases/f2500/2584.htm*, retrieved Aug. 9, 1999, p. 3.

[30] The U.S. Department of Justice, in a 1999 antitrust case involving the merger of two of the largest U.S. grain-trading companies, defined four separate U.S. geographic regions as "draw" areas. See United States of America (U.S. Department of Justice (DOJ)), Plaintiff, v. Cargill, Incorporated and Continental Grain Company, defendants, *Competitive Impact Statement*, Case No. 1:99CV01875, July 23, 1999, found at *www.usdoj.gov/atr/cases/f2500/2584.htm*, retrieved Aug. 9, 1999, p. 3.

[31] "Merging Two Grain Giants," *World Grain*, Jan. 1999, p. 30; and Marvin Hayenga and Robert Wisner, "Study Evaluated Cargill's Purchase of Continental Grain's Grain Business," *Feedstuffs*, Feb. 8, 1999, p. 1.

[32] Ibid., table 2.

[33] Ibid., table 4.

[34] Joy Harwood and Craig Jagger, "Agriculture's Safety Net," *Choices*, 4th qtr. 1999, p. 59; USDA, ERS, and Joy Harwood, et al., *Managing Risk in Farming*, ERS Ag. Econ. Rep. 774, Mar. 1999.

U.S. Government Programs

U.S. farm programs are extensive and complex. This section summarizes the key provisions of the support program and highlights those provisions influencing U.S. oilseed production and trade. The oilseeds covered are soybeans, sunflower seed, canola (rapeseed), safflower, mustard seed, and flaxseed.

In May 2002, the President signed into law the new "farm bill" (a term applying to U.S. farm support programs), the Farm Security and Rural Investment Act of 2002 (FSRI Act), which amended the previous legislation, the Federal Agriculture Improvement and Reform Act (FAIR) of 1996.[35] The FAIR Act affected crops during the 5 year period 1996-2001, while the FSRI Act will affect crops planted and marketed during 2002-07.

The major changes from the FAIR Act to the FSRI Act for oilseed crops were the addition of direct payments for oilseed crops, and of a target price for counter-cyclical payments. Under the FAIR Act, oilseed farmers were eligible to participate in the USDA loan program but were not eligible for direct payments (unlike grain and cotton farmers). Under the FSRI Act, income support is provided for oilseed through three programs-marketing loans, direct payments (DP), and counter-cyclical payments (CCP).

During 1998-2001, in addition to the FAIR Act support for oilseed crops, Congress provided annual ad hoc emergency assistance, also called "market loss assistance payments," under several acts.[36] In fiscal year 2000 for example, the emergency assistance paid on all crops eligible under farm legislation was $2.8 billion.[37] During 1998-2001, most of the federal government support came from provisions of the FAIR Act under the Marketing Assistance Loan Program, Production Flexibility Contract Payments, and Conservation Payments.

Market Loans

U.S. oilseed farmers have the option of offering their oilseed crops as collateral for USDA loans, called nonrecourse loans, which can be redeemed by the farmer prior to maturity with funds from the market sale of the product. Loan rates for oilseeds are as follows:[38]

[35] USDA, ERS, "2002 Farm Bill," Title I–Commodity Programs, found at *www.ers.usda.gov/features/farmbill*, retrieved June 19, 2002.

[36] These included emergency supplemental appropriations in Oct. 1998, Oct. 1999, 2000, the Crop Year 2001 Agricultural Economic Assistance Act, and the fiscal year 2002 agricultural appropriations legislation Mitchell Morehart et al., USDA, ERS, "U.S. Farm Income Decline in 2000 to be Tempered by Government Payments," *Agricultural Outlook*, Jan.-Feb. 2000, p. 6; and USDA, Office of the Chief Economist, *USDA Agricultural Baseline Projections to 2011*, Feb. 2002, p. 33.

[37] Morehart, *Agricultural Outlook*.

[38] USDA, ERS, "2002 Farm Bill."

	Period		
	1996-2001	2002-03	2004-07
Soybeans	$5.26/bushel	$5.00/bushel	$5.00/bushel
Other oilseeds[1]	$0.093/pound	$0.096/pound	$0.093/pound

[1] Sunflower seed, canola (rapeseed), safflower seed, mustard seed, and flaxseed.

If market prices are below the loan repayment rate, the farmer may default on the loan obligation and forfeit the product (which then becomes Government property), or repay the loan at the prevailing market price. If the market price exceeds the loan rate, a farmer can sell the product, pay off the loan and interest, and retain the difference. The farmer may also agree not to exercise the loan option and receive a "loan deficiency payment (LDP)," the difference between the current market price and the USDA fixed loan rate.

Farmers may repay the nonrecourse loan plus interest anytime prior to maturity of the loan and then sell the pledge crop or forfeit the collateral to the government as full payment within the 9-month loan period.[39] The loan repayment rate is lower than the loan rate plus interest when the posted country price (PCP) is below the loan rate. When a farmer repays the loan rate at this lower rate, the difference between the original loan rate and the repayment is called a "marketing loan gain" (any accrued interest is waived). The loan program thereby provides a price floor at the loan rate for farmers eligible to place their crops under loan, but does not establish a floor for actual market prices since grain can enter the market at prices below the loan rate.

In those cases when the PCP or prevailing world market price is below the loan rate, eligible producers may opt to receive a LDP and not take out a nonrecourse loan.[40] The LDP is the difference between the PCP and the loan rate. Once the LDP is paid, the crop cannot later go under the loan program. A producer may immediately sell the crop and receive the LDP, effectively receiving the equivalent revenue of the loan rate.

In 1998/99, market prices fell below the loan rates, triggering the LDPs for most farmers. The LDP essentially functions as the so-called "deficiency payment" previously paid under the 1990 FACT Act, supporting farm income but not the market price.[41] LDPs and marketing loan gains became important income support for U.S. soybean growers. In 1999/2000 and 2000/01, soybean producers received $2.3 billion and $2.4 billion, respectively, for LDPs and marketing loan gains.[42]

[39] USDA, Economic Research Service (ERS), *Provisions of the Federal Agriculture Improvement and Reform Act (FAIR) of 1996*, Bulletin No. 729, Sept. 1996, pp. 9-12 and USDA, ERS, "2002 Farm Bill."

[40] USDA, ERS, *Provisions of the Federal Agriculture Improvement and Reform Act*.

[41] Morehart, *Agricultural Outlook*.

[42] Ash, *Soybeans*.

Direct Payments

Beginning in 2002, oilseed farmers receive direct payments (DP) that grain and cotton farmers received during 1996-2001 under the FAIR Act as "Production Flexibility Contract Payments." DP rates for 2002-07 are as follows:

Soybeans	$0.44/bushel
Other oilseeds	$0.008/pounds

Land eligible for payments and loans ("base acreage") is established for each individual farm based on a formula of planted acreage. In 2002, the new formula for "base acres" set under the FSRI Act is generally the 4-year average of the actual planted acres (plus "prevented from planting acres").

Counter-Cyclical Payments

Under the FSRI Act of 2002, a counter-cyclical payment (CCP) is made to oilseed farmers whenever the "effective price" is less than the specified target price. The effective price is the sum of (1) the higher of the national average farm price for the entire marketing year or the national loan rate for oilseed, and (2) the DP rate for oilseed. The payment amount is the payment rate multiplied by the payment yield per acre. The current and near future target prices for oilseeds are:

	Period	
	2002-03	**2004-07**
Soybeans	$5.80/bushel	$5.80/bushel
Other oilseeds	$0.098/pounds	$0.101/pounds

The payment yield is established for each individual farm based on a 1998-2001 average yield formula for each covered crop.

Uruguay Round Compliance

The Uruguay Round Agreement on Agriculture set a maximum on trade-distorting domestic farm support programs under the aggregate measure of support (AMS) for the United States of $19.1 billion after 1999.[43] Under the FSRI Act, if the Secretary of Agriculture determines that the AMS ceiling will be exceeded, the Secretary must adjust expenditures to avoid exceeding that level.

[43] These AMS expenditures includes all U.S. agricultural crops and programs including dairy; USDA, ERS, "2002 Farm Bill.

In 1998 (the latest year for which data were reported), the United States notified the WTO that its total spending for agricultural products, including oilseeds, grain, cotton and dairy for non-exempt (so-called "amber box") support, was $10.39 billion.[44] The total amount of AMS was $24.2 billion, but $13.85 billion was exempt because it was non-trade distorting.

Conservation Reserve Program

The 1996 FAIR Act provided (and continued in the 2002 FSRI Act) a wide range of environmental and conservation programs for U.S. oilseed producers, the two most important provisions being the Conservation Reserve Program (CRP) and the Environmental Quality Incentives Program (EQIP). Farmers must meet soil conservation requirements on land enrolled to prevent erosion and farm chemical run off, among other things. During 1996-2001 the CRP provided for a maximum of 36.4 million acres of environmentally sensitive land to be withdrawn from production, under a voluntary agreement between the land owners and USDA for a 5-year period, during which payments are provided to land owners. Under the FSRI, a maximum of 39.2 million acres during 2002-07 may be enrolled under the CRP.[45] In crop-year 1999/2000, a total of 31.1 million acres was enrolled under the CRP. The EQIP provides for technical, education, and cost-share assistance and payments to crop and livestock producers to protect soil and water resources, with one-half of the $1.3 billion fund going to crop producers and one-half to livestock producers.

Export Credit Guarantee Program

USDA also provides a guarantee of private credit used to finance the purchase of U.S. oilseed and other eligible agriculture products.[46] The GSM-102 (Export Credit Guarantee Program) provides credit for loans of up to 3 years, and the GSM-103 (Intermediate Export Credit Guarantee Program) provides credit for loans of 3 to 10 years. Credit guarantee programs focus on maintaining U.S. sales levels abroad by assisting U.S. exporters with sales in countries with foreign exchange constraints.[47]

In 2001, Mexico, Indonesia, South Korea, and Turkey were the leading markets for U.S. soybean exports under the credit guarantee program, accounting for 88 percent of the $626 million in exports under the program.[48] In fiscal year 2001, the export credit guarantee program covered $5.5 billion of U.S. agricultural, fishery and forest product exports, of which $626 million were soybeans, according to USDA data. With U.S. soybean exports of about $5 billion in 2001, U.S. exports under the GSM programs thus accounted for about 11 percent of all soybean exports in FY 2001.

---

[44] Frederick J. Nelson, USDA, ERS, "Aligning U.S. Farm Policy with World Trade Commitments, *Agricultural Outlook*, Jan.-Feb. 2002, p. 14.

[45] USDA, ERS, "2002 Farm Bill."

[46] Under Section 416 (b) of the 1949 Agriculture Act.

[47] ERS, USDA, *Provisions of the FAIR Act*.

[48] FAS, USDA, "Soybean/Sunflower Seed Exports," fax received July 2, 2002; and USDA, ERS, *Outlook for U.S. Agricultural Trade*, Nov. 30, 2001, p. 5, found at *http://usda.mannilb.cornell.edu*, retrieved July 3, 2002.

Research and Development

Since the latter part of the 1990s, a significant change in research and development affecting oilseeds has been the development of genetically modified or engineered (GM) crops with input traits for pest management. USDA defines "genetic engineering" as "the genetic modification of organisms by recombinant DNA techniques."[49]

Herbicide-tolerant soybeans were among the first bio-engineered crops to achieve commercial importance. Since their general commercial introduction in 1996, herbicide-tolerant soybean varieties have gained rapid acceptance among U.S. farmers seeking reduced costs and a simpler method of pest management. In 2001, these varieties accounted for 68 percent of U.S. soybean planted acreage.[50] Farm acreage surveys indicate that soybeans account for most biotech crop acres, followed by corn and cotton. Some rapeseed (canola) varieties are also GM crops.

The crop yields of farmers planting GM soybeans in 1997 were estimated to be about 3 percent higher than those planting non-GM varieties, according to USDA research.[51] Moreover, the use of GM soybeans lowered farm weed control costs by about 11 percent (or $3.50 per acre); the combination of the slightly higher yields and the lower weed control costs boosted U.S. soybean farmers' economic returns by $60 million in that year.[52] This higher profitability encouraged farmers to increase the share of planted U.S. soybean acreage with GM seed from 20 percent in 1997 to 68 percent in 2001.

The introduction of GM soybeans has affected resource use, marketing, and international trade. USDA indicates that U.S. farmers adopting herbicide-tolerant varieties of soybeans reduced the number of per-acre herbicide treatments and began using herbicides with less toxicity.[53] Bioengineering of oilseed crops largely improved production attributes such as lower pest control costs, however, the development of GM soybeans or GM canola with enhanced functional characteristics—such as healthier oil attributes, improved animal nutrition, and more palatable food quality—is still progressing.

Additional use of GM seed depends on both domestic and foreign markets. The European Union and Japan require labeling of foods containing biotech ingredients, and other countries are considering similar labeling policies.[54] There is also some debate regarding how to

[49] 7 CFR 340: 340.1. See USDA, ERS, "Agricultural Biotechnology Concepts and Definitions," and "Genetically Engineered Crops for Pest Management," found at *www.econ.ag.gov/whatsnew/issues/gmo/terms.htm*, retrieved Nov. 24, 1999.

[50] Ash, *Soybeans*.

[51] William Lin, Gregory Price, and Jorge Fernandez-Cornejo. "Estimated Farm-Level Effect of Adopting Herbicide-Tolerant Soybeans, ERS, USDA, *Oil Crops Situation and Outlook Yearbook*, Oct. 2001, p. 25.

[52] Ibid.

[53] Ash, *Soybeans*.

[54] See a PEW Initiative on Food and Biotech, "Dispute over Labeling of GM Foods Threatens Billions in Trade," *Issue Brief*, June 4, 2002, found at *http://pewabiotech.org*, retrieved June 20, 2002.

segregate biotech and non-biotech crops in the marketing chain. Segregation of non-biotech soybeans would add to producers' and grain handlers' costs, but consumers' willingness to pay premiums necessary to cover these costs is uncertain.[55]

The safety of GM crops has been affirmed by the U.S. Department of Agriculture and the Food and Drug Administration, but GM crops have been questioned by European Governments, U.S. consumer groups, and members of Congress. A National Academy of Sciences panel concluded in April 2000 that there is no scientific evidence that GM crops are unsafe to eat. However the panel found there are unresolved scientific issues of potential risks arising from substances inadvertently transferred into biotech crops that can cause allergic reactions, and the threat to the environment that may be posed by the flow of spliced genes to other plant species.[56]

U.S. MARKET

Consumer Characteristics and Factors Affecting Demand

Characteristics of Consumers or Users

By far, the principal use of oilseeds is to produce vegetable oil and its co-product, oilseed meal. Some oilseeds, such as cottonseed, are fed directly to livestock, while smaller amounts are used directly in food products, such as confectionery sunflower seed or sesame seed, after being roasted or cleaned. All oilseeds are used for planting as well (see figure 1).

Oilseed processors, also known as "crushers" or "vegetable oil mills" are located mostly in the leading growing regions or, in some cases, adjacent to areas with sizable livestock production with high demand for oilseed meal. The U.S. Census of Manufactures indicated that in 1997 there were 44 companies with 93 establishments classified as soybean oil mills; 32 companies with 35 establishments classified as cottonseed oil mills in the United States; and 19 establishments classified as miscellaneous vegetable oil mills.[57] Soybean oil mills located in the Corn Belt States produced the majority of shipments of soybean products; all

[55] European buyers in 2002 were reluctant to pay the additional marketing costs associated with non-GMO soybeans and soybean meal. In 2002 for example, strict certification on non-GMO soybean meal from India cost a reported $12-20 per metric ton additional (6 to 10 percent of the price of soybean meal) or for Brazilian soybean meal marketed as non-GMO but without a strict certificate an additional $4-6 per ton (1-3 percent of the price). Source: "Europe Deterred by Cost on Non-GMO Meal," *WTO Watch*, July 1, 2002, p. 14.

[56] Marc Kaufman, "Biotech Crops Appear Safe, Panel Says," *Washington Post*, Apr. 6, 2000, p. B-10; and Paul Raeburn, "Biotech Foods Aren't Out of the Woods Yet," *Business Week*, Apr. 17, 2000, p. 56.

[57] U.S. Bureau of the Census, *1997 Economic Census Manufacturing Industry Series: Soybean Processing and Other Oilseed Processing*, Oct. 1999, table 1.

of the cottonseed oil mills were located in Arkansas, California, Mississippi, and Texas, the leading cotton-producing States.

Oilseeds tend to be a homogeneous commodity within their particular subgroup or for an established grade; therefore, price is the principal factor influencing sales, although transportation costs (reflected in the "price basis") are also important. Soybeans used for oilseed crushing are classified under several grades established by USDA, but are primarily sold under grade Number 1 yellow. Food-grade oilseeds are generally sold under private contract terms and require much more stringent qualities with regard to cleanliness, specific colors, and other factors.

Factors Influencing the Demand for Oilseeds

The leading market for oilseeds is the oilseed crushing industry that produces two coproducts, meal and oil, that are sold in separate and independent markets. For soybeans, soybean meal supplied two-thirds of the value of sales of these two byproducts during 1996/97 to 2001/02, and soybean oil supplied about one-third of the value.[58]

Oilseed meal is used principally by the livestock industry, because it is a feedstuff with a large number of grain or protein complements. Consumer demand for meat, poultry, and dairy products creates the intermediate demand for oilseed meal and for its grain or feed substitutes. The primary factors affecting consumer demand for meat and dairy products are consumers' incomes, population growth, retail prices, and changes in food preferences.

Vegetable oil derived from oilseeds is sold mainly in the food fats and oils market to be used in the production of cooking oils, margarine, and baking fats. Consumer demand for fats and oils responds mainly to changes in population growth, changes in food preferences (related to demographic changes), and income growth.

The leading factors affecting world or foreign demand for oilseeds are virtually the same as those for domestic demand, with at least two added variables, namely foreign exchange effects and the relatively low per capita consumption levels of these products in most countries of the world.[59] The dynamic markets in the world for oilseed products tend to be the developing countries and non-market-economy countries where low per capita consumption levels occur and where population growth is higher than in the developed-country markets such as United States, the EU, or Japan.

[58] USDA, ERS, *Oil Crops*, table 23.

[59] See Cecil Davison and other, "Box-Cox Estimation of U.S. Soybean Exports," *American Journal of Agricultural Economics*, summer 1990, Vol. 41, No. 3, p. 8; and Margot Anderson, *U.S. Soybean Trade and Exchange Rate Volatility*, USDA, Oct. 1988.

Consumption

Apparent U.S. consumption of oilseeds dropped by 28 percent from $11.5 billion to $8.4 billion during 1997-2001 (table B-3). The import-penetration level averaged 3 percent annually over the 5-year period. The decline in the value of consumption resulted from a decline in prices of oilseeds over the period.

On a volume basis, U.S. consumption of the leading oilseed, soybeans, rose 7 percent to 1.9 billion bushels during crop-years 1997/98 to 2001/02 (table B-4). Domestic processors (crushers) accounted for 90 percent of the domestic consumption of soybeans, crushing soybeans into soybean oil and soybean meal.

The consumption trends of the other leading oilseeds (sunflower seed, flaxseed, cottonseed, and canola seed) varied, with consumption of sunflower seed dropping slightly and consumption of the remaining varieties rising. During the 5 year period, U.S. consumption of sunflower seed averaged 1.7 MMT annually; about 60 percent of consumption went for crushing to produce sunflower seed oil, and the remainder went largely into confectionery (edible nut) use (table B-5). Domestic consumption of flaxseed averaged 13 million bushels annually; with a sharp recovery in U.S. flaxseed production, the import-penetration ratio for flaxseed fell from 86 percent to 23 percent, during this period (table B-6).

Cottonseed consumption similarly was largely flat during the 5 year period, rising irregularly from 6.8 million short tons to about 7.3 million short tons in 2001/02 (table B-6). Domestic consumption of cottonseed by domestic oilseed crushers to make vegetable oil fell from 3.9 million short tons in 1997/98 to 3.3 million short tons in 2001/02,[60] while the quantity of cottonseed fed directly to livestock rose from 3.0 million to 4.0 million short tons.[61] Low prices of cottonseed oil increased the attractiveness of using cottonseed for cattle feed rather than crushing it into vegetable oil.

U.S. consumption of canola seed rose steadily from 1.3 billion pounds in 1997/98 to 1.9 billion pounds in 2001/02 (table B-8). Domestic plantings of canola increased sharply during the period. Canola-crushing mills responded to buoyant consumption of canola oil. As the domestic canola crop rose, U.S. imports declined from 59 percent to 9 percent of U.S. consumption during the 5-year period (table B-8).

[60] USDA, ERS, *Oil Crops*, table 26.
[61] Ibid.

Production

The value of U.S. production of oilseeds fell by $5.0 billion (27 percent) to $13.8 billion during 1997-2001 (table B-3). The volume of U.S. oilseed production rose by 9 percent to 90 million MT (table B-9). U.S. production fluctuated largely because of weather-induced changes to crop yields and higher acreage planted. After the decline in prices in 1997 (a year with near record high prices), the value of U.S. oilseed production stabilized at around $14 billion annually during 1998-2001 (table B-9).

The harvested acreage in oilseeds rose 6 percent (over 5 million acres) during the 5-year period (table B-10). Crop yields remained largely unchanged (table B-10), except for 1999, when adverse growing conditions reduced yields by 5 percent or more from the prior year. The harvested acreage in sunflower seed generally remained unchanged, whereas harvested flaxseed acreage nearly tripled (table B-10). Canola seed acreage nearly doubled from 1997 to 2001 to 1.5 million acres. During 1997-2001, harvested soybean acreage rose by about 4 million acres or 6 percent, while cottonseed acreage rose by 3 percent (400,000 acres).

Prices received by U.S. farmers for oilseeds during this period fell continuously. Prices received by soybean farmers fell by 33 percent from $6.47 to $4.35 per bushel in 2001 (table B-11). Price levels were effectively supported by the USDA price support programs after 1997, when market prices fell below the USDA loan price of $5.26 per bushel.

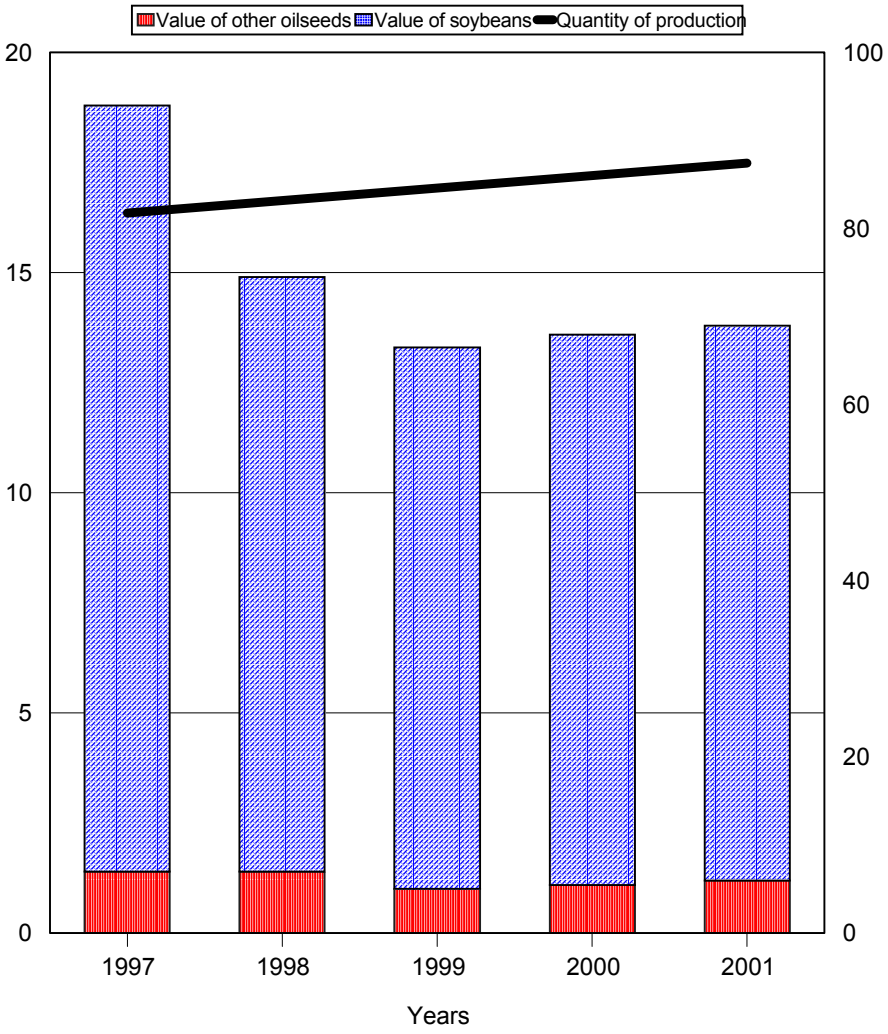
The sharp price drop is explained mainly by abrupt changes in world supply and demand conditions. Strong world demand for and the reduced production of oilseed had resulted in higher prices during 1994/95 to 1997/98.[62] This period of short world supplies and buoyant demand for oilseeds (and grain) was brief as higher world production (in the United States and abroad), and very weak demand in key Asian markets led to much lower world prices for oilseeds by 1998/99. Key factors related to this dramatic turn around in prices were the Asian financial crisis, the sharp decline in Chinese grain and oilseed imports, and the rapid rise in South American soybean production.[63]

While prices fell, the costs of production for the average-sized U.S. soybean farm rose during this period, resulting in generally lower economic returns to U.S. growers. Operating cash costs were generally flat, but overhead costs of machinery and land rent rose. The U.S. Department of Agriculture reported that total operating (cash) costs of producing an acre of soybeans in the United States were $78 per acre in 2001; total costs of production (which include land charges and returns to unpaid labor) were $260 per acre in 2001 (table B-11). On a per-bushel basis, in 2001, the total costs of producing soybeans in the United States amounted to about $6.04 per bushel, which exceeded the harvest-period price of $4.30 and resulted in a loss for soybean farmers. Operating (cash) costs per bushel were $1.81 per bushel in 2001.

[62] See USDA, ERS, *Oil Crops Yearbook*, October 1996, pp. 4-7; and Oct. 1997, pp. 5-7.

[63] See the Office of Chief Economist, USDA, *USDA Agricultural Baseline Projections to 2008,* Feb. 1999, pp. 84-87; and William Coyle, et al., "The Asian Financial Crisis–Impact on U.S. Agriculture," *Choices*, Fourth Quarter 1998, pp. 28-33.

Figure 2
Oilseeds: U.S. production, 1997-2001



Source: Compiled from official statistics of the U.S. Department of Agriculture.

U.S. TRADE

Overview

During 1997-2001, the U.S. trade surplus in oilseeds declined by nearly $2 billion, from about $7.2 billion to $5.4 billion as the effects of the price drop from 1997 took effect (table B-15). The U.S. share of world oilseed markets declined during this period while the global market shares of the Brazil and Argentina increased. The $1.1 billion decline in the U.S. trade surplus with the EU was responsible for about half of the smaller U.S. trade surplus in the oilseed sector. Counter balanced against the value decline, however, the volume of the U.S. oilseed exports was up nearly 10 percent during 1997-2001. Thus, despite the negative effects of foreign exchange rates and record low prices, the volume of U.S. exports rose.

U.S. Imports

Principal Suppliers and Import Levels

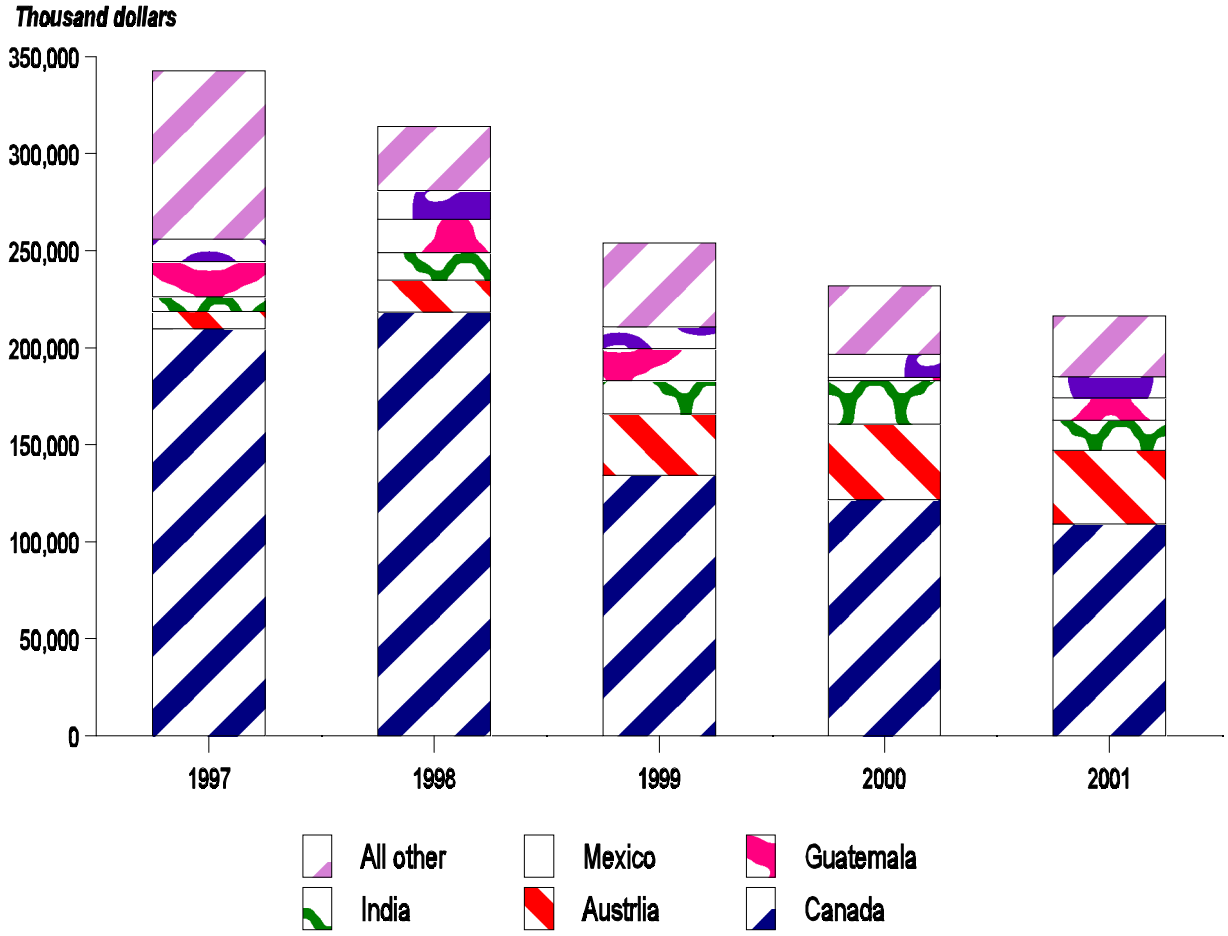
The value of U.S. imports of oilseed during 1997-2001 averaged $275 million annually (table B-12). The composition of imports changed significantly during the period, as shown in the following tabulation (in percent):

Items	1997	2001
Sesame seed	13	26
Rapeseed (canola)	28	20
Cottonseed	2	16
Soybeans	23	11
Sunflower seed	2	8
Flaxseed	19	6
All others	13	13
Total	100	100

The importance of soybean, canola, and flaxseed imports declined sharply, whereas those of sesame seed, cottonseed, and sunflower seed increased.

During 1997-2001, U.S. imports of oilseeds fell by $126 million or 37 percent to $216 million. The 10-percent decline in the volume of imports to about 905,000 metric tons was magnified by the much lower oilseed prices. During the period, the value of soybean imports fell by $54 million, canola seed imports by $53 million, and flaxseed imports by $51 million. Canada accounted for nearly all U.S. imports of these three types (figure 3). There was a $28 million increase in cottonseed imports, nearly all of which came from Australia, to be used in cattle feed.

Figure 3
Oilseeds: U.S. imports, by five leading sources, 1997-2001



Source: Compiled from official statistics of the U.S. Department of Commerce.

The sharp decline in domestic soybean and other oilseed prices during the period, coupled with a recovery in domestic production of soybeans, canola, and flaxseed, reduced imports of these oilseeds. The much lower prices for cottonseed oil reduced demand for cottonseed for crushing both domestically and internationally, making cottonseed more available for direct feeding to livestock, particularly in the Southwest United States where large, confined livestock operations are located, and where there is a regional shortage of feedstuffs. Australia accounted for nearly all U.S. imports of cottonseed, most destined for these livestock operations.

Canada has been the leading U.S. oilseed supplier for many years, although its share slipped from 61 percent in 1997 to 51 percent in 2001 (table B-12). Australia became a significant supplier to the U.S. market during this time, with its share of imports rising from 3 percent to 18 percent. As indicated earlier, Australia exports mostly cottonseed to the United States.

Since imported oilseeds are chiefly raw agricultural products that need considerable processing or are inputs used to produce other consumer goods, importers tend to be large oilseed crushers or food processors. Domestic oilseed crushers tend to purchase rapeseed (canola) and flaxseed as raw materials to obtain vegetable oil. Sesame seed is imported raw, and then roasted or otherwise processed before reaching bakeries or other food processors.

U.S. Trade Measures

Table B-1[64] shows the column 1 rates of duty as of January 1, 2002 (including both general and special pre-Uruguay Round rates of duty) and 2001 exports and imports for the articles included in this summary. The aggregate trade-weighted average U.S. rate of duty for all products covered in this summary, based on 2001 imports, was 0.7 percent ad valorem equivalent; the average trade-weighted rate of duty for the dutiable products was 3.9 percent ad valorem equivalent. About 82 percent of the imports included here, mostly sesame seed and soybeans, are free of duty under column 1.

There have been no statutory trade investigations filed concerning U.S. imports of oilseeds over the past decade. Further, there are few nontariff measures (NTMs) or health and sanitary regulations that affect U.S. imports of oilseeds. The leading exception is the restriction on entry of cottonseed into the United States from Mexico because of the presence of the pink bollworm. This quarantine is maintained by the U.S. Department of Agriculture. Because Mexico exports little cottonseed due to other factors, the quarantine has had little effect.

U.S. Exports

Principal Markets and Export Levels

During 1997-2001, key competitive factors in oilseed trade and production–namely price, transportation and infrastructure costs, and foreign exchange rates–disadvantaged U.S. oilseed exporters, who have continuously lost world market share since the early 1980s. Without U.S. Government intervention, U.S. oilseed production and trade would have been much more adversely affected.[65] Increased South American production also contributed to the low international commodity prices of recent years.[66]

The United States once supplied over 70 percent of world soybean production and exports, but by the late 1990s its share had slipped below 50 percent as explained further below.[67] During the most recent five years, the U.S. share of world production of soybeans declined

[64] Statistical tables are in appendix B. An explanation of tariff and trade agreement terms is shown in appendix A.

[65] See for example, Morehart, *Agricultural Outlook*; and Office of the Chief Economist, USDA, *USDA Agricultural Baseline Projections to 2011*, Feb. 2002, pp. 6-8.

[66] Schnepf, Dohlman, and Bolling, *Agriculture in Brazil and Argentina*.

[67] Ash, *Soybeans*, p. 5.

from about 46 percent to 43 percent (figure 4). The U.S. share of world exports of soybeans similarly slipped from 60 percent in 1997/98 to 49 percent in 2001/02 (figure 5). The decline registered in the U.S. share of soybean oil and soybean meal exports is much larger, although some U.S. soybean meal previously exported now contributes as an input of the much larger volume of U.S. poultry and pork exports.[68]

U.S. exports of oilseeds consist primarily of soybeans, with smaller amounts of sunflower seed, rapeseed, and cottonseed. In 2001, soybeans accounted for 96 percent of the $5.6 billion in U.S. oilseed exports, sunflower seed for about 2 percent, and rapeseed and cottonseed for 1 percent each.

During 1997-2001, U.S. exports of oilseeds fell irregularly from $7.6 billion to $5.6 billion (table B-13), or by 26 percent (figure 6). Exports of soybeans fell from $7.4 billion to $5.4 billion, but the soybean export volume rose by 11 percent to 29 MMT in 2001 (table B-14).

U.S. exports of soybeans were equivalent to one-third of domestic output during 1997-2001 (table B-4). When export sales of soybean oil and soybean meal are included, the share of soybean or soybean-derived products sold abroad exceeds 50 percent of domestic output of soybeans.

Domestic sunflower seed growers are also dependent on exports; the share of sunflower seeds sold abroad averaged 11 percent annually during 1997/98 to 2001/02 (table B-5). Export sales of sunflower seed oil were equivalent to about 32 percent of domestic output during this same period.[69]

The five leading destinations for U.S. oilseed exports were the EU, China, Mexico, Japan, and Taiwan, which together purchased 74 percent of U.S. oilseed exports during 2001 (figure 6). China became the second-leading U.S. market for oilseeds, in 2000. Among world oilseed markets, only the EU was a larger U.S. export market than China in 2001.

Foreign Trade Measures

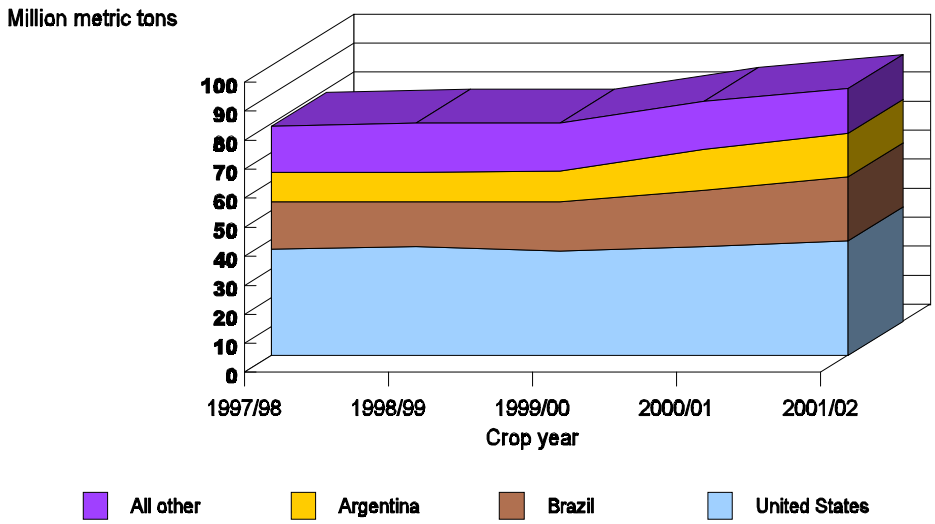
Tariff measures

The EU, China, Mexico, Japan, and Taiwan are by far the leading foreign markets for U.S. oilseeds, together purchasing about three-quarters of U.S. exports in 2001. Other leading foreign markets are Indonesia, South Korea, and Canada. The duty on soybeans imported into the EU was bound duty-free under the WTO; all of the other leading oilseeds imported

[68] Soybean meal constitutes about 17 percent of poultry and hog feed, the remainder being largely corn or grain. Ash, Soybeans, p. 5.

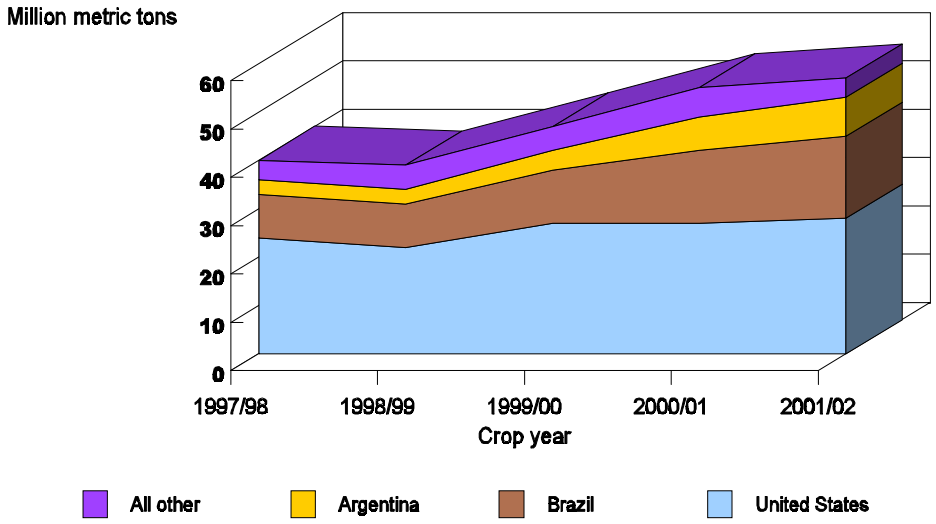
[69] USDA, ERS, *Oil Crops*, table 36.

Figure 4
World soybean production, by leading producers, crop years 1997/98 to 2001/02



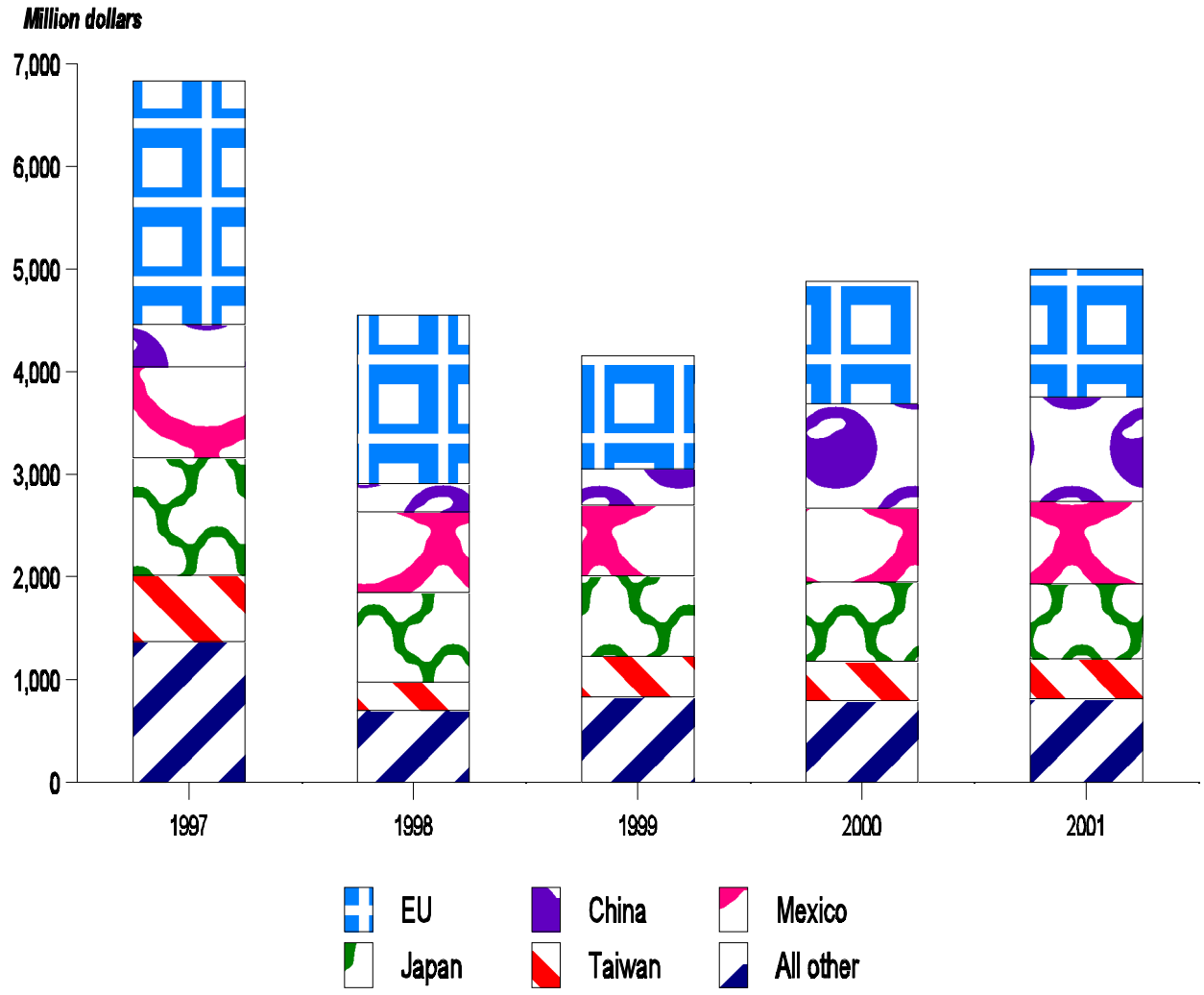
Source: USDA, FAS, Oilseeds: *World Markets and Trade,* May 2002, table 5.

Figure 5
World soybean exports, by leading exporters, crop years 1997/98 to 2001/02



Source: USDA, FAS, Oilseeds: *World Markets and Trade,* May 2002, table 5.

Figure 6
Oilseeds: U.S. exports, by five leading markets, 1997-2001



Source: Compiled from official statistics of the U.S. Department of Commerce.

into the EU are also free of duty. Japan similarly imposes no duties on its imports of leading oilseeds. Canada and Mexico impose no duties on U.S. oilseed exports under the NAFTA.

China imposed a 3-percent ad valorem tariff on imports of soybeans, and upon joining the WTO in 2001, agreed to eliminate its announced but never implemented tariff-rate quota on soybean imports.[70] Indonesia applied no duty on U.S. soybeans in 2001; South Korea applied

[70] See USITC, *Assessment of the Economic Effects on the United States of China's Accession to the WTO*, Inv. No. 332-403, pub. No. 3229, Sept. 1999, pp. 4-11 to 4-15.

a duty of 1 percent AVE for imports of soybeans under a TRQ.[71] Some important or potential markets for U.S. soybeans where duties in 2001 were significant are Venezuela (an applied duty of 15 percent), Colombia (applied duty of 15 percent), and India (40-percent bound rate).

Although world trade in oilseeds is generally characterized by low to moderate tariffs, "bound" tariff rates–the maximum rate allowed under the WTO–are frequently quite high, particularly in developing countries.[72] For example, Colombia applied a 15-percent duty to its imports of soybeans in 2001, but has a bound duty of 125 percent under the WTO.

Tariff rates on vegetable oil and oilseed meal tend to be much higher than those on oilseeds, and are designed to protect domestic oilseed crushing and vegetable oil refineries. The EU, for example, applied a tariff on soybean oil of 30 percent ad valorem, and has a bound tariff of 45 percent.[73] For soybean meal, the EU applied a tariff of 5 percent (with a bound tariff of 10 percent).[74]

Nontariff measures

The primary NTM affecting oilseeds abroad are rules and laws governing products from genetically modified organisms (GMOs), particularly GM soybeans, under sanitary/phytosanitary measures (SPS).[75] With about 70 percent of U.S. soybeans being planted to a GM variety, the imposition of GM restrictions in a number of major consuming countries, particularly the EU, but also Japan, South Korea, China, and Thailand may have affected U.S. exports. In the EU and Japan, GM soybeans may be imported, but those soybeans sold directly to consumers must be labeled as GM soybeans; other countries having GM labeling policies in place in 2002 are South Korea, Canada, Switzerland, Russia, and Argentina.[76]

Unlike the case of several varieties of GM corn, there is only one variety of GM soybeans planted in the United States, and that variety has also been approved in the EU. Thus, as a practical matter U.S. soybean exports to the EU have not suffered significantly as a result of the EU regulations on GM food labeling, according to some studies.[77] However, since the EU is the largest single soybean market in the world, U.S., soybean growers are reluctant to introduce new GM soybean varieties until the EU has approved them for use within the EU.

---

[71] The Korean over-quota duty was 5 percent or 487 percent or 956 wong/kilogram, whichever is greater. Source: WTO.

[72] Linwood Hoffman, Erik Dohlman, and Mark Ash, ERS, USDA, "Upcoming World Trade Organization Negotiations: Issues for the U.S. Oilseed Sector," *Oil Crops Situation and Outlook Yearbook*, Oct. 1999, p. 22.

[73] Ibid., p. 32.

[74] Trade barriers against U.S. vegetable oil exports are described further in USITC, *Processed Foods and Beverages*, USITC pub. No. 3455, Oct. 2001, chapter 5, Vol. 1.

[75] Hoffman, Dohlman, and Ash, "Upcoming World Trade Organization Negotiations."

[76] Emily Wilson, "GMO Guidance," *World Grain*, June 2002, p. 33; and GAO, *Concerns Over Biotechnology Challenge U.S. Agricultural Exports*, Report #GAO-01-727, June 2001, pp. 7-9.

[77] PEW Initiative on Food and Biotechnology. U.S. soybean exports to the EU remained largely unchanged during 1998-2001 at about 6.4 million metric tons, annually according to data of the U.S. Department of Commerce (table B-14, appendix B).

In 2001, China proposed SPS regulations on GM products that affected U.S. soybean exports to China, and potentially U.S. GM corn and GM cotton exports as well.[78] The effect of the proposals was to halt temporarily U.S. soybean exports to China. In February 2002, the U.S. Trade Representative (USTR) and USDA indicated that China did not present any scientific evidence to support these regulations and, "failed to provide a transparent and predictable framework for exporters and importers."[79] By March 2002, an inter-agency team from USTR, USDA, and the State Department had met with Chinese Government officials, and the Chinese Government developed an interim arrangement to reduce trade disruption relating to GMO approval, market access, and labeling.[80] However, Chinese imports of U.S. soybeans were halted again during March-June 2002.[81] Imports then resumed in July 2002 under temporary licenses.[82]

FOREIGN INDUSTRY PROFILE

Overview

In most years, about one-quarter of world production of oilseeds enters international commerce, with three-quarters being consumed or crushed within the producing country. During 1997/98 to 2001/02, total world imports of major oilseeds rose by 33 percent to 71 MMT in 2001/02, according to USDA.[83]

The EU, China, Japan, Mexico, and Taiwan purchased about two-thirds of world imports of oilseeds in 2001/02, according to data of the USDA. About 80 percent of world imports of oilseeds consisted of soybeans; 11 percent of rapeseed; and the remaining 9 percent consisted of all other types of oilseeds (including sunflower seed).

In 2001/02, the EU imported about 20 MMT of oilseeds, accounting for 28 percent of the total world imports of all oilseeds. China in 2001/02 imported 12 MMT of oilseeds, 17 percent of world imports of oilseeds. Japan was the third leading market with a 7-percent share in 2001/02.

---

[78] USDA, FAS, *China, Peoples Republic of , Oilseeds and Products Update 2002*, May 16, 2002, GAIN Report #CH2022, pp. 1-2.

[79] USDA, "Joint Statement of U.S. Agriculture Secretary Ann M. Veneman and U.S. Trade Representative Robert B. Zoellick Regarding China's Biotechnology Regulations," *USDA Statement* , Feb. 7, 2002, press release no. 0039.02., found at *www.usda.gov/news/releases/2002/02/0039.htm,* retrieved Feb. 13, 2002.

[80] USTR, "Veneman and Zoellick Pleased with Efforts to Keep American Biotech Farm Product Trade Moving," *USTR Press Release* , Feb. 7, 2002, press release no. 0039.02, *www.ustr.gov*.

[81] USDA, FAS, GAIN Report #CH2022, pp. 1-2.

[82] USDA, FAS, *China, Peoples Republic of, Food and Agricultural Import Regulation and Standards*, Oct. 15, 2002, GAIN Report #CH2051.

[83] USDA, FAS, *World Oilseed Situation*, June 2002, table 1.

The share of the world soybean import market supplied by the United States declined from 59 percent in 1997/98 to 49 percent in 2001/02. Two factors contributed to this decline in U.S. trade performance:[84]

- much higher output of Brazilian and Argentine soybeans, soybean meal, and soybean oil; and
- the appreciation of the dollar in foreign exchange markets, particularly vis-a-vis the Brazilian and Argentine currencies.

Major World Producers

In crop year 2001/02, the United States was the leading producer of oilseeds in the world, accounting for about 28 percent of the 323 million metric tons (MMT) of the leading oilseeds, soybeans, cottonseed, sunflower seed, rapeseed, and flaxseed grown throughout the world, according to the USDA.[85]

World production of these leading oilseeds rose by 3 percent annually from 284 million MMT in crop year 1997/98. The factors affecting world supply and the increased world production of oilseeds include increasing acreage and/or crop yields, prices, and government support programs.

Soybeans are by far the leading oilseed product grown and traded worldwide, accounting in 2001/02 for about 57 percent of world production and 81 percent of world exports of oilseeds, according to data of the USDA. World production of soybeans is largely concentrated in four countries–the United States, Brazil, Argentina, and China, but only the first three producers play a role in world export trade. China's soybean production is largely consumed domestically, and China is the second largest world importer of soybeans.

Over the past two decades, Brazil and Argentina have planted more and more land into soybeans, in part shifting from wheat and in part planting uncultivated land. Argentine and Brazilian costs of production are sharply below those of the United States, particularly when the costs of land and GM soybean seed are considered.[86] Soybean yields in U.S. Corn-Belt States of 45 bushels per acre in 2000/01 were about the same as those in Brazil's rapidly expanding center-west producing region (the State of Mato Grosso), but below the 51 bushels per acre in Argentina.[87] About 80 percent of Argentine soybeans were planted in

[84] Ash, *Soybeans*.

[85] USDA, Foreign Agricultural Service (FAS), *World Oilseed Situation and Outlook*, May 2002, tables 1 and 10.

[86] Schnepf, Dohlman, and Bolling, Agriculture in Brazil and Argentina; and, GAO, *Biotechnology: Information on Prices of Genetically Modified Seeds in the United States and Argentina*, Report No. GAO/T-RCED/NSIAD-00-228, June 29, 2000.

[87] Andre S.M. Pessoa, and Marcos S. Jank, *Grain markets: A South-American Perspective*, paper presented at the Grains and Oilseed Outlook of the USDA Agricultural Outlook Forum 2002, Feb. 22, 2002, p. 24.

GM varieties in 2000.[88] However, U.S. farmers pay significantly higher prices for GM soybean seed than Argentine farmers who do not pay a technology fee imposed on U.S. farmers.[89] This gives a significant cost advantage to Argentine farmers.

In Brazil, GM soybean seed is not authorized to be planted at the present time, nevertheless a substantial amount of Brazilian soybean acreage is planted in GM seed (for which no technology fee is paid).[90] However, a substantial amount of Brazilian soybeans are non-GM seed, and are exported as such to the EU (at higher prices than GM soybeans).[91] This gives these non-GM Brazilian soybeans a marketing advantage within the EU over U.S. and Argentine soybeans.

Some trade analysts expect South American soybean production to exceed U.S. production for the first time in 2002/2003.[92] Untilled land in the Brazilian center-west region has been planted in soybeans, and Argentina has upgraded its grain handling and crushing mills close to Atlantic ocean ports. As a result, Brazil and Argentina together produced and exported in 2001/02 nearly as much soybeans as the United States. Brazilian and Argentine soybean meal and soybean oil exports have greatly exceeded those of the United States.

Compared with Brazil, the United States has a more efficient transportation and marketing network, which translates into lower freight costs for shipping soybeans to the leading foreign market, the EU. Brazil relies mainly on trucks to move soybeans over 1,000 kilometers from its center-west producing area to ocean ports.[93] In Brazil, the lack of rail and barge capacity has restricted the ability of farmers to expand production in remote soybean areas in the western part of the country, although Brazil has created a partial river barge system and is expanding its rail system in its center-west region.

Brazil and Argentina face potential bottlenecks to increasing their soybean production, namely the effects of their large public and foreign debt, unstable currencies, and lack of public infrastructure that would be needed to build efficient rail systems.[94] Further complicating their public infrastructure problems, the foreign exchange and economic collapse of Argentina in late 2001 and into 2002 have made foreign trade problematic for Argentina soybean exporters.

---

[88] Source: GAO, *Information on Prices of Genetically Modified Seeds*, p. 2.

[89] In 2000, Argentine farmers paid $12 per 50-pound bag of GM soybean seed less than did U.S. farmers, giving the Argentine growers a cost advantage of over $12 per acre or 27 cents per bushel. See GAO, *Ibid*; and Pessoa and Jank, *Grain Markets*, p. 22.

[90] An estimated 70 percent of the soybeans in the Brazilian state of Rio Grande do Sul (which accounts for 20 percent of total Brazilian soybean production) were planted in GM seed in 2002. USDA, FAS, *Brazil–Oilseeds and Products Annual, 2002*, GAIN Report N. BR2004, Mar. 11, 2002, p. 39.

[91] Ken Roseboro, "Brazilian soybean processor certifies its entire production as non-GMO," *World Grain*, Jan. 2001, pp. 28-31.

[92] Andre S.M. Pessoa, and Marcos S. Jank, *Grain markets: A South-American Perspective*, paper presented at the Grains and Oilseed Outlook of the USDA Agricultural Outlook Forum 2002, Feb. 22, 2002, p. 24.

[93] Schnepf, Dohlman, and Bolling, *Agriculture in Brazil and Argentina*.

[94] Ibid.

World Producers' Involvement in Exports

Markets and Competitiveness Factors

World trade in oilseeds must be considered along with that of oilseed meal and vegetable oil. A number of producing countries have government policies that encourage the domestic processing of the oilseed and the export of the higher valued meal and oil to world markets. Exports of oilseeds from the United States compete not only with exports of foreign oilseeds, but also with exports of oilseed meal or of vegetable oil from other leading oilseed producing nations.

Some key competitive factors for oilseed trade and production are price, transportation and infrastructure (marketing) costs, and foreign exchange rates. Price is a key factor in both domestic and world trade of oilseeds and grain. Price ratios affect the cross-substitution among oilseeds, between oilseeds and their byproducts, and between oilseed meal and grain substitutes.

The U.S. oilseed industry benefits from excellent crop yields and soil productivity, efficient transportation systems, and sophisticated marketing systems. However, Brazil and Argentina are rapidly improving their own marketing systems, reducing this U.S. advantage.

Exchange Rates

Historically, movement in the dollar exchange rate accounted for about 25 percent of the change in the U.S. agricultural exports value.[95] During 1997-2001, the U.S. dollar appreciated on an agricultural trade-weighted basis by 21 percent (based on U.S. markets), but about 30 percent relative to the currencies of U.S. competitors like Brazil.[96] With regard to soybean trade only, the U.S. dollar appreciated by 28 percent relative to the currencies of U.S. markets, and by an astounding 84 percent relative to the currencies of Argentina and Brazil, according to USDA.

With the financial deterioration in Argentina and Brazil beginning in 2000 into mid 2002, the dollar appreciated an additional 25 percent against the weighted average of the currencies of Argentina, Brazil and the other soybean exporting countries.[97] Thus, the appreciating U.S. dollar has had a strong negative influence on U.S. soybean exports but has been a strong inducement to Brazilian and Argentine exports of soybeans.

[95] USDA, "Agricultural Economy–Exchange Rate Indexes and U.S. Agricultural Trade," *Agricultural Outlook*, Dec. 2000.

[96] USDA, *Agricultural Outlook*, table 26, June-July 2002, and May 1999.

[97] USDA, *Agricultural Outlook*, table 26, June-July 2002.

APPENDIX A
EXPLANATION OF TARIFFS AND TRADE AGREEMENT TERMS

TARIFF AND TRADE AGREEMENT TERMS

In the ***Harmonized Tariff Schedule of the United States*** (HTS), chapters 1 through 97 cover all goods in trade and incorporate in the tariff nomenclature the internationally adopted Harmonized Commodity Description and Coding System through the 6-digit level of product description. Subordinate 8-digit product subdivisions, either enacted by Congress or proclaimed by the President, allow more narrowly applicable duty rates; 10-digit administrative statistical reporting numbers provide data of national interest. Chapters 98 and 99 contain special U.S. classifications and temporary rate provisions, respectively. The HTS replaced the *Tariff Schedules of the United States* (TSUS) effective January 1, 1989.

Duty rates in the ***general*** subcolumn of HTS column 1 are normal trade relations rates; many general rates have been eliminated or are being reduced due to concessions resulting from the Uruguay Round of Multilateral Trade Negotiations. Column 1-general duty rates apply to all countries except those listed in HTS general note 3(b) (Cuba, Laos, and North Korea) plus Serbia and Montenegro, which are subject to the statutory rates set forth in ***column 2***. Specified goods from designated general-rate countries may be eligible for reduced rates of duty or duty-free entry under preferential tariff programs, as set forth in the ***special*** subcolumn of HTS rate of duty column 1 or in the general notes. If eligibility for special tariff rates is not claimed or established, goods are dutiable at column 1-general rates. The HTS does not list countries covered by a total or partial embargo.

The ***Generalized System of Preferences*** (GSP) affords nonreciprocal tariff preferences to designated beneficiary developing countries. The U.S. GSP, enacted in title V of the Trade Act of 1974 for 10 years and extended several times thereafter, applies to merchandise imported on or after January 1, 1976, and before the close of September 30, 2001. Indicated by the symbol "A", "A*", or "A+" in the special subcolumn, GSP provides duty-free entry to eligible articles the product of and imported directly from designated beneficiary developing countries (see HTS gen. note 4). Eligible products of listed sub-Saharan African countries may qualify for duty-free entry under the ***African Growth and Opportunity Act*** (AGOA) (see HTS gen. note 16) through September 30, 2008, as indicated by the symbol “D” in the special subcolumn; see subchapter XIX of chapter 98.

The ***Caribbean Basin Economic Recovery Act*** (CBERA) affords nonreciprocal tariff preferences to designated developing countries in the Caribbean Basin area. The CBERA, enacted in title II of Public Law 98-67, implemented by Presidential Proclamation 5133 of November 30, 1983, and amended by the Customs and Trade Act of 1990, applies to goods entered, or withdrawn from warehouse for consumption, on or after January 1, 1984. Indicated by the symbol "E" or "E*" in the special subcolumn, CBERA provides duty-free entry to eligible articles, and reduced-duty treatment to certain other articles, which are the product of and imported directly from designated countries (see HTS gen. note 7). Eligible products of listed beneficiary countries may qualify for duty-free or reduced-duty entry under the ***Caribbean Basin Trade Partnership Act*** (CBTPA) (see HTS gen. note 17), through September 30, 2008, as indicated by the symbol “R” in the special subcolumn; see subchapter XX of chapter 98.

Free rates of duty in the special subcolumn followed by the symbol "IL" are applicable to products of Israel under the ***United States-Israel Free Trade Area Implementation Act*** of 1985 (IFTA), as provided in general note 8 to the HTS; see also subchapter VIII of chapter 99.

Preferential nonreciprocal duty-free or reduced-duty treatment in the special subcolumn followed by the symbol "J" or "J*" in parentheses is afforded to eligible articles from designated beneficiary countries under the ***Andean Trade Preference Act*** (ATPA), enacted as title II of Public Law 102-182 and implemented by Presidential Proclamation 6455 of July 2, 1992 (effective July 22, 1992–Dec. 4, 2001) (see HTS gen. note 11).

Preferential free rates of duty in the special subcolumn followed by the symbol "CA" are applicable to eligible goods of Canada, and rates followed by the symbol "MX" are applicable to eligible goods of Mexico, under the ***North American Free Trade Agreement*** (NAFTA), as provided in general note 12 to the HTS and implemented effective January 1, 1994, by Presidential Proclamation 6641 of December 15, 1993. Goods must originate in the NAFTA region under rules set forth in general note 12(t) and meet other requirements of the note and applicable regulations.

Preferential rates of duty in the special subcolumn followed by the symbol "JO" are applicable to eligible goods of Jordan under the ***United States-Jordan Free Trade Area Implementation Act***, (JFTA) effective as of Dec. 17, 2001; see HTS gen. note 18 and subchapter IX of chapter 99.

Other special tariff treatment applies to particular ***products of insular possessions*** (gen. note 3(a)(iv)), ***products of the West Bank and Gaza Strip*** (gen. note 3(a)(v)), goods covered by the ***Automotive Products Trade Act*** (APTA) (gen. note 5) and the ***Agreement on Trade in Civil Aircraft*** (ATCA) (gen. note 6), ***articles imported from freely associated states*** (gen. note 10), ***pharmaceutical products*** (gen. note 13), and ***intermediate chemicals for dyes*** (gen. note 14).

The ***General Agreement on Tariffs and Trade 1994*** (GATT 1994), pursuant to the Agreement Establishing the World Trade Organization, is based upon the earlier GATT 1947 (61 Stat. (pt. 5) A58; 8 UST (pt. 2) 1786) as the primary multilateral system of disciplines and principles governing international trade. Signatories' obligations under both the 1994 and 1947 agreements focus upon most-favored-nation treatment, the maintenance of scheduled concession rates of duty, and national treatment for imported products; the GATT also provides the legal framework for customs valuation standards, "escape clause" (emergency) actions, antidumping and countervailing duties, dispute settlement, and other measures. The results of the Uruguay Round of multilateral tariff negotiations are set forth by way of separate schedules of concessions for each participating contracting party, with the U.S. schedule designated as Schedule XX. Pursuant to the **Agreement on Textiles and Clothing** (ATC) of the GATT 1994, member countries are phasing out restrictions on imports under the prior "Arrangement Regarding International Trade in Textiles" (known as the **Multifiber Arrangement** (MFA)). Under the MFA, which was a departure from GATT 1947 provisions, importing and exporting countries negotiated bilateral agreements limiting textile and apparel shipments, and importing countries could take unilateral action in the absence or violation of an agreement. Quantitative limits had been established on imported textiles and apparel of cotton, other vegetable fibers, wool, man-made fibers or silk blends in an effort to prevent or limit market disruption in the importing countries. The ATC establishes notification and safeguard procedures, along with other rules concerning the customs treatment of textile and apparel shipments, and calls for the eventual complete integration of this sector into the GATT 1994 over a ten-year period, or by Jan. 1, 2005.

APPENDIX B
STATISTICAL TABLES

Table B-1
Oilseeds: Harmonized Tariff Schedule subheadings; description; U.S. column 1 rate of duty as of Jan. 10, 2002; U.S. exports, 2001; and U.S. imports, 2001

HTS subheading		Description	Column 1 rate of duty as of Jan. 1, 2002 General	Special[1]	U.S. exports 2001	U.S. imports 2001
					—— Thousand dollars ——	
1201.00.00		Soybeans, whether or not broken	Free	([2])	5,420,388	24,154
	30	Seeds of a kind used as oil stock			([3])	1,072
	90	Other			([3])	23,082
1203.00.00		Copra	Free	([2])	0	113
1204.00.00		Flaxseed (linseed), whether or not broken	0.39¢/kg	Free (A+,CA,D,E,IL,J,JO,MX)	12,783	13,109
		Other than for sowing:				
	20	For use as oil stock			([3])	5,997
	90	Other			([3])	7,112
1205.00.00		Rape or colza seeds, whether or not broken	0.58¢/kg	Free (A+,CA,D,E,IL,J,JO,MX)	53,628	42,896
		Other than for sowing:				
	20	For use as oil stock			([3])	40,617
	90	Other			([3])	2,279
1206.00.00		Sunflower seeds, whether or not broken	Free	([2])	17,310	891
	20	For use as oil stock				
		Other than for sowing or oil stock				
		For human use:				
	61	In-shell			26,979	11,194
	69	Other			45,913	585
	90	Other			8,612	4,800
		Other oil seeds and oleaginous fruits, whether or not broken:				
1207.10.00	00	Palm nuts and kernels, whether or not broken	Free	([2])	208	184
1207.20.00		Cotton seeds, whether or not broken	0.47¢/kg	Free (A+,CA,D,E,IL,J,JO,MX)		
	90	Other than for sowing			45,486	35,287
1207.30.00		Castor beans, whether or not broken	Free	([2])	341	2
1207.40.00		Sesame seeds, whether or not broken	Free	([2])	1,172	48,839
1207.60.00		Safflower seeds, whether or not broken	Free	([2])	6,114	629
		Other:				
1207.91.00		Poppy seeds, whether or nor broken	0.06¢/kg	Free (A+,CA,D,E,IL,J,JO,MX)	61	4,127
1207.92.00		Shea nuts (karite nuts), whether or not broken	Free	([2])	0	20
1207.99.00		Other	Free	([2])	98	12,785
	10	Niger seed				
	90	Other			[4]4,023	2,927

[1] Programs under which special tariff treatment may be provided, and the corresponding symbols for such programs as they are indicated in the "special" column, are as follows: Generalized System of Preferences (A); Automotive Products Trade Act (B); North American Free Trade Agreement (CA), goods of Mexico (MX); Caribbean Basin Economic Recovery Act (E); United States-Israel Free Trade Area (IL); Andean Trade Preference Act (J); and United States-Jordan Free Trade Area Implementation Act (JO).
[2] Not applicable because the general rate of duty is free.
[3] Not specially provided for.
[4] Exports include $1,432,000 of mustard seed reported under Schedule B item 1207.50.00.

Source: U.S. exports and imports compiled from data of the U.S. Department of Commerce.

Table B-2
Oilseed crops: U.S. acreage harvested, number of farms, yield, and production, 1992 and 1997

Item/unit of measure	Harvested acreage		Number of farms		Yield		Production	
	1992	1997	1992	1997	1992	1997	1992	1997
	— *1,000 acres* —		—— *Number* ——		*Units/acre*		– *1,000 units* –	
Soybeans (bushels)	56,351	66,148	381,000	354,692	36	38	2,053,163	2,504,307
Sunflower seed (pounds) .	1,905	2,535	9,914	11,067	1,178	1,261	2,243,174	3,198,790
Cottonseed (bales)	10,962	13,235	34,812	31,493	1.40	1.35	15,370	17,879
Canola (pounds)	90	553	1,181	2,788	1,009	1,179	90,843	628,670
Flaxseed (bushels)	157	140	2,060	1,188	17.8	16.1	2,801	2,252
Safflower seed (pounds) .	265	195	1,319	865	1,460	1,810	386,979	352,895
Total	69,730	82,806	430,286	402,093	([1])	([1])	([1])	([1])

[1] Not meaningful.

Note.—Totals may vary because of rounding. A bushel contains 60 pounds of soybeans.

Source: USDA, *1997 Census of Agriculture*, Vol. 1, part 51, table 26.

Table B-3
Oilseeds: U.S. production, exports of domestic merchandise, imports for consumption, and apparent U.S. consumption, 1997-2001

Year	U.S. production[1]	U.S. exports	U.S. imports	Apparent U.S. consumption	Ratio of exports to production
	———— *Million dollars* ————				*Percent*
1997	18,774	7,567	343	11,549	40
1998	14,925	5,053	314	10,185	34
1999	13,340	4,694	254	8,898	35
2000	13,595	5,419	246	8,422	40
2001	13,790	5,642	216	8,364	41

[1] Crop year production, ending in the year shown.

Source: Production compiled form official statistics of the U.S. Department of Agriculture; imports and exports compiled from official statistics of the U.S. Department of Commerce.

Table B-4
Soybeans: U.S. production, imports, exports, beginning stocks, apparent consumption, and season average price, crop years 1997/98 to 2001/02

Year beginning Sept. 1—	Production	Imports	Exports	Beginning stocks	Apparent consumption: Crushed for oil	Apparent consumption: Other (seed, and feed)	Apparent consumption: Total	Ratio of exports to production	Season average price received by farmers
	Quantity (*million bushels*)							*Percent*	*Per bushel*
1997/98	2,689	5	874	132	1,597	155	1,752	33	$6.47
1998/99	2,741	4	805	200	1,590	202	1,792	29	4.93
1999/2000	2,654	4	973	348	1,578	165	1,743	37	4.63
2000/01	2,758	4	996	290	1,640	168	1,808	36	4.54
2001/02[1]	2,891	3	1,063	248	1,700	170	1,869	37	4.35

[1] Forecast, Oct. 2002.

Source: Compiled from official statistics of the U.S. Department of Agriculture.

Table B-5
Sunflower seed: U.S. beginning stocks, production, exports of domestic merchandise, imports for consumption, apparent consumption, and season average price, crop years 1997/98 to 2001/02

Crop year beginning Sept. 1—	Beginning stocks	Production	Exports	Imports	Crushed for oil	Confectionery non-oil, and seed use	Total apparent consumption	Ratio of exports to production	Season average price received by farmers
	1,000 metric tons							*Percent*	*Per ton*
1997/98	196	1,668	190	29	1,061	550	1,611	11	$256
1998/99	92	2,392	260	34	1,178	849	2,027	11	225
1999/2000	231	1,969	199	41	1,139	672	1,811	10	166
2000/01	231	1,608	202	66	923	623	1,546	13	152
2001/02[1]	157	1,551	231	77	760	686	1,446	11	215

[1] Forecast, Oct. 2002.

Note.—Apparent consumption is calculated as the sum of production, imports, and beginning stocks for the period, less the sum of exports and beginning stocks of the following period.

Source: Compiled from official statistics of the U.S. Department of Agriculture.

Table B-6
Flaxseed: U.S. beginning stocks, production, exports of domestic merchandise, imports for consumption, apparent consumption, and season average price, crop years 1997/98 to 2001/02

Crop year beginning Sept. 1—	Beginning stocks	Production	Exports	Imports	Apparent consumption	Ratio of imports to consumption	Season average price received by farmers
	1,000 bushels					Percent	Per bushel
1997/98	453	2,420	174	9,636	11,154	86	$5.75
1998/99	1,181	6,708	476	5,992	11,246	53	5.25
1999/2000	2,158	7,880	215	6,629	14,685	45	3.79
2000/01	1,767	10,730	1,015	2,849	13,024	22	3.30
2001/02[1]	1,308	11,455	2,386	1,903	11,387	23	4.29

[1] Forecast, Oct. 2002.

Note.—Apparent consumption is calculated as the sum of production, imports, and beginning stocks for the period, less the sum of exports and beginning stocks of the following period.

Source: Compiled from official statistics of the U.S. Department of Agriculture.

Table B-7
Cottonseed: U.S. beginning stocks, production, exports of domestic merchandise, imports for consumption, apparent consumption, and season average price, crop years 1997/98 to 2001/02

Year beginning Sept. 1—	Beginning stocks	Production	Exports	Imports	Apparent consumption	Season average price received by farmers
	1,000 short tons					Per short ton
1997/98	523	6,935	149	96	6,842	$121
1998/99	563	5,365	68	207	5,674	129
1999/2000	393	6,354	198	308	6,583	89
2000/01	274	6,436	235	374	6,424	105
2001/02[1]	427	7,452	274	383	7,589	86

[1] Forecast, Oct. 2002.

Note.—Apparent consumption is calculated as the sum of production, imports, and beginning stocks for the period, less the sum of exports and beginning stocks of the following period.

Source: Compiled from official statistics of the U.S. Department of Agriculture.

Table B-8
Canola (rapeseed) seed: U.S. beginning stocks, production, exports of domestic merchandise, imports for consumption, apparent consumption, and season average price, crop years 1997/98 to 2001/02

Crop year beginning Sept. 1—	Beginning stocks	Production	Exports	Imports	Apparent consumption	Ratio of imports to consumption	Season average price received by farmers
	Million pounds					*Percent*	*Per cwt*
1997/98	80	781	277	782	1,324	59	$11.30
1998/99	42	1,558	543	684	1,572	44	10.30
1999/2000	169	1,364	299	534	1,658	32	7.82
2000/01	110	1,998	486	479	2,018	24	6.71
2001/02[1]	84	1,999	529	276	1,732	9	8.45

[1] Forecast, Oct. 2002.

Note.—Apparent consumption is calculated as the sum of production, imports, and beginning stocks for the period, less the sum of exports and beginning stocks of the following period.

Source: Compiled from official statistics of the U.S. Department of Agriculture.

Table B-9
Oilseeds: U.S. production of leading products, by type, crop years 1997-2001

Crop year beginning	Soybeans	Cottonseed	Sunflower seed	Flaxseed	Canola seed	Total
	Quantity					
	Million bushels	*1,000 short tons*	*1,000 metric tons*	*1,000 bushel*	*Million pounds*	*1,000 metric tons*
1997	2,689	6,935	1,668	2,420	781	83,095
1998	2,741	5,365	2,392	6,708	1,558	84,365
1999	2,654	6,354	1,969	7,880	1,364	82,315
2000	2,758	6,436	1,608	10,730	1,998	84,891
2001[1]	2,891	7,452	1,551	11,455	1,999	89,832
	Value (*million dollars*)					
1997	17,400	840	430	14	90	18,774
1998	13,500	690	540	35	160	14,925
1999	12,300	570	330	30	110	13,340
2000	12,500	680	240	35	130	13,595
2001[1]	12,600	640	330	50	170	13,790
	Price received by farmers					
	Per bushel	*Per short ton*	*Per metric ton*	*Per bushel*	*Per cwt*	
1997	$6.47	$121	$256	$5.75	$11.30	-
1998	4.93	129	225	5.25	10.30	-
1999	4.63	89	166	3.79	7.82	-
2000	4.54	105	152	3.30	6.71	-
2001[1]	4.35	86	215	4.29	8.45	-

[1] Forecast, Oct. 2002.

Note.—Crop harvested beginning in September of the year shown.

Source: Compiled from official statistics of the U.S. Department of Agriculture.

Table B-10
Oilseeds: Harvested acreage, and yield of leading U.S. crops, crop years 1997-2001

Type	1997	1998	1999	2000	2001[1]
	Harvested acreage *(1,000 acres)*				
Soybeans	69,110	70,441	72,446	72,408	72,975
Cotton seed	13,406	10,684	13,425	13,053	13,828
Sunflower seed	2,792	3,492	3,441	2,647	2,555
Flaxseed	146	329	382	517	578
Canola seed	631	1,076	1,044	1,509	1,455
Total	86,085	86,022	90,738	90,134	91,423
	Yield (*per acre)*				
Soybeans (bushels)	38.9	38.9	36.6	38.1	39.6
Cotton seed (pounds)	1,034	1,004	946	986	1,078
Sunflower seed (pounds)	1,317	1,510	1,262	1,339	1,338
Flaxseed (bushels)	16.6	20.4	20.6	20.8	19.8
Canola seed (pounds)	1,237	1,448	1,306	1,337	1,374

[1] Indicated on Oct. 2002.

Note.—Because of rounding, figures may not add to the totals shown.

Source: U.S. Department of Agriculture, *Crop Production*, Jan. 2002, and Nov. 2002.

Table B-11
Soybeans: U.S. production costs and returns, harvest price, yield, and farm size, 1997-2001

Item	1997	1998	1999	2000	2001[1]
	Dollars (*per planted acre*)				
Gross value of production	281.22	223.17	178.00	182.45	184.90
Operating costs:					
Seed	19.72	20.46	19.25	19.18	20.26
Fertilizer	8.00	8.00	7.96	7.87	9.70
Soil conditioners	0.10	0.10	0.10	0.14	([2])
Manure	0.86	0.80	0.79	0.84	([2])
Chemicals	26.37	26.65	24.88	22.32	22.64
Custom operations	5.85	5.84	5.86	5.78	5.80
Fuel, lube, and electricity	7.14	5.97	5.90	8.60	8.13
Repairs	9.40	9.59	9.79	10.17	10.41
Purchased irrigation water	0.05	0.05	0.05	0.06	([2])
Interest on operating capital	1.98	1.86	1.75	2.16	([2])
Total, operating costs	79.47	79.32	76.33	77.12	78.32
Allocated overhead:					
Hired labor	1.94	1.98	2.01	2.03	2.02
Opportunity cost of unpaid labor	17.63	18.11	18.46	19.49	19.44
Capital recovery of machinery and equipment	49.61	50.66	51.58	53.53	54.89
Opportunity cost of land (*rental rate*)	76.74	77.66	79.74	80.12	83.64
Taxes and insurance	6.76	6.89	6.77	7.01	7.02
General farm overhead	13.68	12.94	14.13	14.56	14.85
Total, allocated overhead	166.36	168.24	172.69	176.74	181.86
Total costs listed	245.83	247.56	249.02	253.86	260.18
Value of production less total costs listed	32.94	-24.39	-71.02	-71.41	-75.28
Value of production less operating costs	199.31	143.85	101.67	105.33	106.58
	Bushels (*per planted acre*)				
Supporting information:					
Yield *(bushels per planted acre)*	43	43	40	41	[3]43
	Dollars (*per bushel*)				
Harvest price (*dollars per bushel*)	6.54	5.19	4.45	4.45	[4]4.30
	Acres (*per farm*)				
Enterprise size (*planted acres*)[5]	220	220	220	220	220

[1] Forecasts as of Dec. 2001.
[2] Not available.
[3] Estimated.
[4] Projected average farm price received.
[5] Developed from survey base year, 1997.

Source: USDA, *Commodity Costs and Returns Data*, found at *www.ers.usda.gov/briefing/farmincome/costsandreturns.htm*, retrieved on Feb. 8, 2002.

Table B-12
Oilseeds: U.S. imports for consumption, by principal sources, 1997-2001

Source	1997	1998	1999	2000	2001
			1,000 dollars		
Canada	209,680	218,435	134,113	121,786	109,357
Australia	9,033	16,333	31,954	38,946	37,782
India	7,622	14,211	16,914	22,436	15,374
Guatemala	17,977	17,190	16,481	15,544	11,502
Mexico	11,426	14,667	11,190	11,911	11,050
All other	86,761	33,139	43,370	35,374	31,256
Total	342,528	313,981	254,032	246,014	216,342

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table B-13
Oilseeds: U.S. exports of domestic merchandise, by principal markets, 1997-2001

Source	1997	1998	1999	2000	2001
			Million dollars		
EU	2,368	1,639	1,104	1,197	1,248
China	418	279	353	1,013	1,014
Mexico	884	784	684	720	804
Japan	1,143	876	790	771	734
Taiwan	650	277	392	385	386
Indonesia	254	139	202	164	245
South Korea	373	304	224	259	230
Canada	110	60	117	117	188
All other	1,368	696	830	794	814
Total	7,568	5,054	4,696	5,420	5,663

Note.—Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table B-14
Soybeans, except seed for sowing: U.S. exports of domestic merchandise, by principal markets 1997-2001

Market	1997	1998	1999	2000	2001
			Quantity *(1,000 metric tons)*		
EU	8,295	6,420	5,393	6,103	6,483
China	1,525	1,239	1,820	5,231	5,436
Mexico	2,912	3,100	3,287	3,455	3,942
Japan	3,702	3,443	3,678	3,582	3,566
Taiwan	2,270	1,150	1,946	1,932	2,002
Indonesia	906	570	1,065	839	1,286
All other	6,412	4,353	5,869	5,766	6,103
Total	26,022	20,275	23,058	26,908	28,818
			Value (*million dollars)*		
EU	2,301	1,527	1,033	1,143	1,167
China	411	274	348	1,008	1,012
Mexico	851	754	659	678	755
Japan	1,109	862	775	758	724
Taiwan	649	276	392	385	385
Indonesia	254	139	202	164	245
All other	2,058	1,142	1,310	1,272	1,132
Total	7,379	4,835	4,517	5,244	5,420

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table B-15
Oilseeds: U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 1997-2001

Item	1997	1998	1999	2000	2001
	Million dollars				
U.S. exports of domestic merchandise:[1]					
EU	2,368	1,639	1,104	1,197	1,248
China	418	279	353	1,013	1,014
Mexico	884	784	684	720	805
Japan	1,143	876	790	771	734
Taiwan	650	277	392	385	386
Indonesia	254	139	202	164	245
South Korea	373	304	224	259	230
Canada	110	60	117	117	188
All other	1,368	696	830	794	793
Total	7,568	5,054	4,696	5,420	5,643
U.S. imports for consumption:[1]					
EU	4	5	4	3	2
China	1	2	2	2	3
Mexico	11	15	11	12	11
Japan	(2)	(2)	(2)	(2)	(2)
Taiwan	1	1	1	1	1
Indonesia	(2)	(2)	(2)	(2)	(2)
South Korea	(2)	(2)	(2)	0	(2)
Canada	210	218	134	122	109
All other	116	73	102	106	90
Total	343	314	254	246	216
U.S. merchandise trade balance:					
EU	2,364	1,634	1,100	1,194	1,246
China	417	277	351	1,011	1,011
Mexico	873	769	673	708	794
Japan	1,143	876	790	771	734
Taiwan	649	276	391	384	385
Indonesia	254	139	202	164	245
South Korea	373	304	224	259	230
Canada	-100	-158	-17	-5	79
All other	1,252	623	728	688	703
Total	7,225	4,740	4,442	5,174	5,427

[1] Import values are based on customs value; export values are based on f.a.s. value, U.S. port of export.
[2] Less than $500,000.

Source: Compiled from official statistics of the U.S. Department of Commerce