United States
Department of
Agriculture

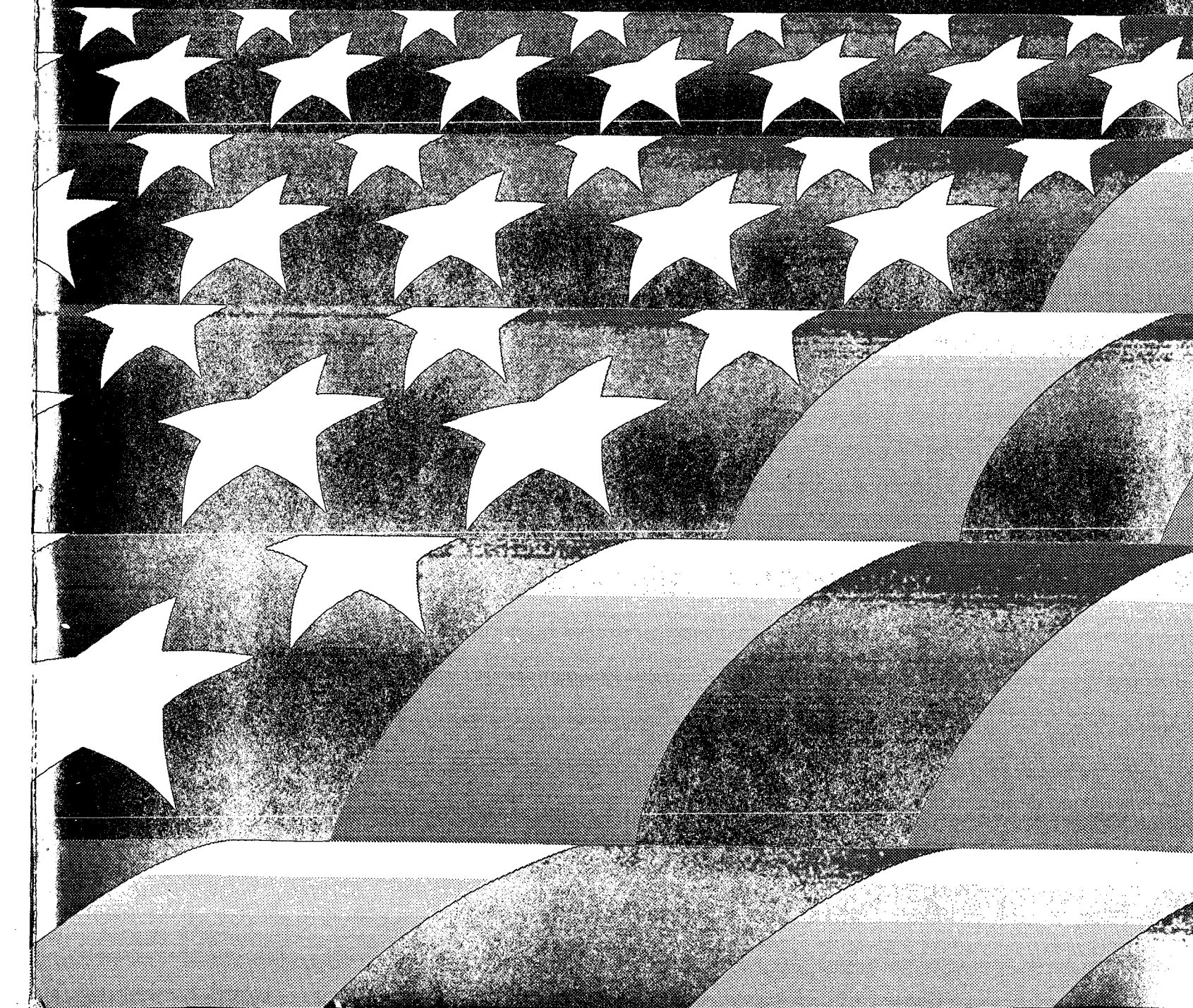
Economic
Research
Service

Agriculture
Information
Bulletin
Number 592

# Soybeans and Peanuts

## Background for 1990 Farm Legislation

Brad Crowder
Cecil W. Davison
James D. Schaub
Bruce Wendland



# It's Easy To Order Another Copy!

**Just dial 1-800-999-6779. Toll free (in the United States and Canada). All other areas please dial 301-725-7937.**

Ask for *Soybeans and Peanuts: Background for 1990 Farm Legislation* (AIB-592).

The cost is $11.00 per copy. For non-U.S. addresses, add 25 percent (includes Canada). Charge your purchase to your VISA or MasterCard, or we can bill you. Or send a check or purchase order (made payable to ERS-NASS) to:

ERS-NASS
P.O. Box 1608
Rockville, MD 20849-1608.

We'll fill your order via 1st class mail.

## Can You Use an Electronic Database?

An electronic database containing data associated with this report is available. The database is in the form of Lotus 1-2-3 (Release 2) worksheet files on four MS-DOS and PC-DOS compatible 5.25" DSDD diskettes.

**To order, just dial 1-800-999-6779. Toll free.**

Ask for *Oil Crops Yearbook* database (order #89002, $25). For non-U.S. addresses, add 25 percent (includes Canada). Charge your purchase to your VISA or MasterCard, or we can bill you. Or send a check or purchase order (made payable to ERS-NASS) to the above address.

For further information on this database, write James Schaub, rm. 1037, 1301 New York Avenue, NW, Washington, DC 20005-4788, or call 1-202-786-1840.

**Soybeans And Peanuts: Background For 1990 Farm Legislation.** Edited By Brad Crowder. Commodity Economics Divsion, Economic Research Service, U.S. Department of Agriculture. Agriculture Information Bulletin No. 592.

**Part 1: Soybeans:** By Brad Crowder and Cecil W. Davison.

**Part 2: Peanuts:** By James D. Schaub and Bruce Wendland.

## Abstract

**Soybean** acreage and production declined in the 1980's, reflecting effects of Federal commodity programs, foreign competition in oilseeds production, and sluggish economic growth in many soybean importing countries. Although soybean prices are supported by a Government loan program, market prices have exceeded the loan rate in recent years. Issues for soybeans in 1990 farm legislation will include the price support level, crop substitution on program crop acreage bases, and a marketing loan for soybeans.

**Peanut** producers in the United States have elected mandatory marketing quotas with a two-tiered price-support program. Peanuts sold within a producer's quota qualify for a higher support price than peanuts sold outside the quota. A major issue for the peanut program in forthcoming legislation is whether to continue the current program or to include peanuts in a general agricultural program with other commodities.

**Keywords:** Soybeans, protein meal, vegetable oil, peanuts, farm programs, agricultural trade, agricultural policy

Washington, DC 20005-4788 March 1990

# Preface

Debate is underway in the 101st Congress on legislation to replace the expiring Food Security Act of 1985. The omnibus food and agricultural legislation will continue a 57-year history of Federal farm programs that dates back to the Agricultural Adjustment Act of 1933.

This lengthy history provides important lessons on the effects of various policy options that may be applied to development of the commodity programs for the 1990's. ERS analysts have prepared a series of background reports on feed grains, food grains, fibers, oilseeds, livestock, and specialty crops. The reports analyze production, marketing, and use of the commodities, as well as the evolution of their respective support programs. The reports also identify important issues for the 1990 farm bill debate.

Federal agricultural policy and programs evolved in response to the frequent and often dramatic financial and resource adjustments necessary because of weather conditions, policy shifts, technological advances, and the vagaries of world supply and demand. While many of the current basic program instruments have been used since the 1930's, the focus of agricultural policy has shifted to meet the changing needs of the farm sector.

Between 1933 and the mid-1960's, farm policy was designed to address the problems created by chronic excess capacity and overproduction. Rapid technological advances, including mechanization, fertilizers, herbicides, pesticides, and improved varieties and hybrids resulted in farm productivity far outpacing the growth in demand. With too many resources devoted to food and fiber production, low commodity prices, underemployment, and low returns for agricultural labor became characteristics of the farm sector. For most years, the average income of farm families has been significantly below the average income of nonfarm families. A variety of farm programs, including production control and government acquisitions, were adopted to address the problems arising from excess capacity.

With supplies exceeding domestic needs, exports became an increasingly important source of demand for U.S. farm products, especially in the 1970's. Expanding links between agriculture and the domestic and international economies broadened the farm policy arena to include macroeconomic, trade, and foreign policy considerations, as well as traditional concerns about farm prices and income.

Growing dependence on foreign markets exposed U.S. agriculture to risk associated with fluctuating world economic conditions. Events of the 1970's and 1980's—including the temporary disappearance of the sector's excess capacity, an export boom and bust, and a severe farm financial crisis—clearly demonstrated the volatility that can plague agriculture. The pitfalls of fixing programs based on expectations that conditions of the recent past would continue for the duration of a farm bill became apparent and pointed to the need for establishing farm programs that will allow farmers to adjust to market conditions.

The Food Security Act of 1985 (PL 99-198) focused on shifting agriculture toward more market orientation so that the farm sector could produce for domestic and international markets at prices reflecting global supply and demand. The 1985 Act lowered loan rates to make U.S. farm products more price competitive and to reduce the incentives that U.S. loan rates and price supports provide to foreign competitors to expand production. Target prices were reduced to minimize the

pressure of lower loan rates on the Federal budget. Export promotion/assistance programs were mandated to address the problem of large price-depressing surpluses and declining U.S. export shares for many commodities. The Food Security Act of 1985 also addressed long-term conservation and environmental issues.

The concerns behind many of the issues addressed during the 1985 farm bill debate remain as strong or stronger today. As a result, the 1990 agricultural policy agenda will be similar to that of 1985 in many respects. For example, because expanding exports in extremely competitive world commodity markets remains a critical challenge, price support and export programs will receive major consideration in 1990.

Interest in the conservation reserve and annual acreage reduction programs will persist because agriculture's productive capacity still exceeds demand. Stock policies will also be on the 1990 agenda. Reserve and Commodity Credit Corporation inventory management policies will be reexamined to determine how large stocks should be, how they should be financed, and how their release to the market can be encouraged when supplies tighten.

Environmental issues will receive more attention than in the 1985 debate. Surface and ground water quality, in particular, is likely to be a key conservation issue. The discussion is also likely to include proposals to discourage reliance on agricultural chemicals.

While the list of issues is extensive, budgetary pressures may limit policy options and focus debate on cost-saving proposals. While Federal outlays for farm programs dropped from the peak of $25.8 billion in fiscal 1986 to $12.5 billion in fiscal 1988, they remain several times the levels of a decade ago.

Oilseed issues have received less attention than grain and cotton issues in farm policy debates. Because corn-soybean linkages are strong at both the production and feed use stages, changes in feed grain programs affect soybean production. The cotton program also affects soybean production in the South. Acreage flexibility provisions, primarily for soybeans and sunflowers, will be at the forefront of the 1990 farm bill debate. This legislative response is expected because soybean market prices and loan rates have been too low to encourage farmers to shift land from program crops that receive target price support to soybean production.

The peanut program also has changed in response to broader farm policy trends. Peanuts have a longstanding history as a specialty crop with production concentrated in several Southern States. Procedures for setting peanut price supports and quotas have been adjusted in past farm bills, and will probably be modified somewhat in the 1990 farm bill.

Specific soybean and peanut issues will be a part of the 1990 debate. However, because of the linkages with other commodities, the oilseeds industries also will be shaped by other commodity programs in the 1990 farm bill.

# Contents

**Part 1: Soybeans** . . . . . 1

Summary . . . . . 2

Introduction . . . . . 2

Structure and Performance of the Soybean Industry . . . . . 3
- Production Characteristics . . . . . 3
- Soybean Yields . . . . . 3
- Regional Production Differences . . . . . 3
- Double-Cropping Soybeans . . . . . 5
- Domestic Soybean Uses . . . . . 6
- Processing Margins . . . . . 8
- Soybean Product Value . . . . . 8
- Costs and Returns . . . . . 9
- Price Trends . . . . . 9

Soybean Trade and Foreign Competition . . . . . 10
- Soybean Exports . . . . . 10
- Soybean Meal Exports . . . . . 11
- Soybean Oil Exports . . . . . 13
- Policies in Other Exporting Countries . . . . . 15
- Prospects in Importing Countries . . . . . 17

History of Soybean Programs . . . . . 17
- Programs in the 1950's and 1960's . . . . . 18
- Programs in the 1970's and 1980's . . . . . 18

Soybean Program Effects . . . . . 18
- Producers . . . . . 19
- Consumers . . . . . 19
- Taxpayers . . . . . 19
- Indirect Effects of Other Crop Programs . . . . . 19

Current Issues . . . . . 20
- Production Incentives for Soybeans . . . . . 20
- A Marketing Loan for Soybeans . . . . . 22
- International Issues Affecting Oilseeds . . . . . 22

Additional Readings . . . . . 22

Appendix Tables . . . . . 24

**Part 2: Peanuts** . . . . . 36

Summary . . . . . 37

Introduction . . . . . 37

Structure of the Peanut Industry . . . . . 38
- Production Characteristics . . . . . 38
- Trends in Domestic and Foreign Markets for Peanuts . . . . . 39
- Trends in Prices and Farm Returns . . . . . 43

Continued—

History of the Peanut Program . . . . . 44
Early Programs . . . . . 44
World War II and After . . . . . 45
1977 Legislation . . . . . 46
1981 Legislation . . . . . 47
1985 Legislation . . . . . 48
Grower Associations . . . . . 49

Program Effects . . . . . 49
Producers . . . . . 49
Consumers . . . . . 50
Taxpayers . . . . . 50
Indirect . . . . . 50

Issues . . . . . 50

Additional Readings . . . . . 51

Appendix Tables . . . . . 52

**Glossary for Soybeans and Peanuts** . . . . . 62

# Part 1: SOYBEANS

By Brad Crowder and Cecil W. Davison

## Abstract

U.S. soybean production increased rapidly during the 1960's and 1970's and is second in production value only to corn. While the growth arose largely from export demand, the United States faces increasing competition for soybean exports. Soybean meal also competes with other protein meals for livestock feed, and soybean oil competes with substitutable fats and oils. Although soybeans are relatively free from direct Government programs, lower soybean prices and greater incentives to participate in Federal commodity programs for other crops have reduced soybean acreage and production during the 1980's. Soybean production areas shifted somewhat during the 1980's as well. Soybeans are supported by a price support loan which, in most years, has been below prices received by farmers. Issues for legislation in 1990 will probably include crop substitution on program crop acreage bases, the support level, trade, and a marketing loan for soybeans.

## Summary

Growth in the U.S. soybean industry halted during the 1980's primarily because of increased competition from South American and other foreign oilseed producers, sluggish economic growth in many soybean importing countries, and U.S. commodity programs for grains and upland cotton. Interest rates, the value of the dollar, and trade policies in the United States and other countries also affect foreign demand for U.S. soybeans and, hence, soybean production.

Government programs, weather, and trade policies affect the soybean industry. What is Government's role in trying to temper price and income fluctuations? Nonrecourse loans are the primary Government program for soybeans. The loan rate generally has been set below the average price received by farmers. The soybean loan is used by farmers primarily to obtain operating funds at harvest time.

Policy questions relating to soybeans in the 1990 farm legislation will include the support level, the efficiency of a marketing loan program for soybeans, and production and export incentives. The Government can be subject to large outlays under these programs if soybean prices fall below the loan rate.

Domestic soybean policy issues to be addressed will include:

(1) Continuation of nonrecourse price support loans.

(2) Establishment of the loan rate formula.

(3) Establishment of a minimum loan rate.

(4) A marketing loan for soybeans.

(5) Production incentives to allow soybeans to compete with corn, cotton, and other basic commodities.

Foreign trade policy issues are of particular concern to the soybean industry:

(1) Trade liberalization.

(2) Export expansion programs.

(3) Funding of export credit programs.

(4) Cargo preference for U.S. ships.

(5) Strength of the U.S. dollar and exchange rate adjustments by other exporters.

(6) Need for countervailing programs to offset foreign export subsidies.

(7) Import levies and other restrictions in the EC.

(8) EC changes in feed grain policy.

(9) Other foreign import restrictions.

U.S. soybean production in the 1990's and beyond will reflect the resolution of these issues in ongoing trade talks and U.S. farm legislation

## Introduction

The soybean industry is one of the world's fastest growing agricultural sectors. Domestic production increased over 300 percent during the last 25 years, but foreign production rose 550 percent. Soybeans accounted for half of the world production of major oilseeds in 1984/85-1988/89. With an estimated farm value of $11.4 billion in 1988/89, soybeans are second only to corn in production value in the United States. The demand for soybeans is derived from the demand for the joint products of meal and oil. Much of the growth in U.S. soybean use has come from export demand. Soybean and soybean product exports averaged $6.2 billion per year in FY 1984-88 (Davison).

The importance of soybeans in the United States declined during the 1980's, however. U.S. dominance of world exports eroded as well. Soybean acreage dropped about 20 percent between 1979 (71.4 million acres) and 1987 (58.0 million acres). Production declined by a smaller percentage because of higher average yields. The loss of U.S. market share was due to competition from South American oilseed production, increased foreign production of vegetable oils, domestic commodity policy, and both domestic and foreign trade policies.

The downward trend in U.S. soybean acreage reversed in 1988. Continued short supplies, high prices, and production incentive provisions in the Disaster Assistance Act of 1988 contributed to an expansion in 1989 soybean production, with planted acreage reaching 60.5 million acres. Renewed growth in the U.S. soybean industry is possible if foreign demand continues to grow. The future of the foreign market is vital to the U.S. soybean industry.

## Structure and Performance of the Soybean Industry

### Production Characteristics

The number and size of U.S. soybean farms varies among farm production regions. Farms with fewer than 100 harvested acres of soybeans accounted for about 61 percent of the 441,899 soybean farms in 1987, ranging from 37 percent of the farms in the Delta to 77 percent of the farms in the Northeast (table 1). The proportion of farms with 250 or more acres of soybeans was largest in the Delta. The average harvested soybean acreage per farm increased from 114 acres to 125 acres from 1978 to 1987.

Soybeans comprised almost one-fifth of the 313 million acres of principal crops in 1988. Other major crops in 1988, each comprising about one-fifth of cropland acreage, included corn, wheat, and all hay (harvested acreage). Soybeans accounted for over 86 percent of U.S. oilseeds production in 1984/85-1988/89, far surpassing cottonseed (8 percent), peanuts (3 percent), sunflower (2 percent), and minor flaxseed production.

Almost 68 percent of U.S. soybean farmers received half or more of their total sales of agricultural products from cash grains in 1987. The percentage increased as soybean acres per farm rose: 55 percent on farms with 1-24 harvested soybean acres, 66 percent for 25-99 acres, 75 percent for 100-499 acres, and 83 percent on farms with 500 or more acres. The distribution of soybean farms by value of sales varies across regions (appendix table 1).

### Soybean Yields

U.S. soybean yields have trended upward during the last 35 years, increasing by about 12 bushels per acre harvested (table 2). This is a much smaller percentage gain than the 70-plus bushel increase in corn yields during the same period. However, soybeans have remained competitive with corn because of strong demand for soybean products and because production costs have not increased as much as those for corn.

Improved varieties and management practices have raised yields, but limited knowledge about the genetic structure of soybeans has delayed development of high-yielding varieties. Genetic engineering techniques such as tissue culture have proven successful for tree crops, especially oil palms, while the application to oilseeds has been lagging, according to Lowell Owens, Agricultural Research Service, USDA.

Major yield gains are not anticipated anytime soon. A slow upward trend in yields is expected to continue because of varietal improvements and improved production practices. Yield increases may be tempered by efforts to reduce inputs and costs. Yields of double-cropped soybeans have traditionally been lower than single-cropped beans, but increasing irrigation of double-cropped soybeans has narrowed this difference.

### Regional Production Differences

Factors which account for shifts in production areas include regional differences in: (1) relative profitability of competing crops, (2) climate, (3) resource endowments, and (4) production practices, such as irrigating and double-cropping soybeans and wheat in the South.

**Table 1—Distribution of soybean farms, by acres of soybeans harvested, 1987**

| Region | Farms by acres of soybeans harvested | | | | | | | Farms growing soybeans |
|---|---|---|---|---|---|---|---|---|
| | 1–24 | 25–49 | 50–99 | 100–249 | 250–499 | 500–999 | 1,000 or more | |
| | *Percent* [1] | | | | | | | *Number* |
| Corn Belt | 19.0 | 18.0 | 22.1 | 27.5 | 10.6 | 2.6 | 0.3 | 239,952 |
| Northern Plains | 21.4 | 20.7 | 24.1 | 24.6 | 7.2 | 1.7 | .3 | 58,267 |
| Lake States | 21.4 | 19.8 | 22.9 | 26.2 | 7.9 | 1.6 | .1 | 54,710 |
| Appalachia | 37.0 | 19.7 | 16.6 | 16.2 | 6.8 | 2.9 | .9 | 38,557 |
| Delta | 12.0 | 11.0 | 13.9 | 23.4 | 19.1 | 13.8 | 6.8 | 20,475 |
| Southeast | 26.2 | 19.0 | 19.4 | 21.4 | 9.1 | 3.9 | 1.1 | 16,088 |
| Northeast | 38.6 | 21.1 | 17.2 | 15.0 | 5.4 | 2.3 | .4 | 10,599 |
| Southern Plains | 18.3 | 20.5 | 20.9 | 24.2 | 9.8 | 5.0 | 1.3 | 2,684 |
| United States | 21.6 | 18.5 | 21.4 | 25.2 | 9.7 | 2.9 | .7 | 441,899 [2] |

[1] Totals may not add to 100 percent due to rounding.
[2] Regional totals do not add to U.S. total because not all farms are reported in each State.
Source: 1987 *Census of Agriculture.*

Government programs strongly influence locations of soybean production by affecting the relative profitability of soybeans compared with program corn, cotton, and wheat.

The Corn Belt has always dominated U.S. soybean production, although its share declined from 74 percent in 1950-54 to 58 percent in 1985-88 (table 2). The average annual acreage planted to soybeans in the Lake States and Corn Belt increased from about 12.0 million acres for 1950-54 to 36.7 million acres in 1985-88. Nearly half of the principal crop acreage in the Delta was planted to soybeans in 1988. Other regions where soybeans are a major crop are Appalachia (41 percent), Corn Belt (35 percent), and Southeast (34 percent).

Substantial acreage expansion occurred in all soybean-producing regions through the 1970's and early 1980's. In the South (Appalachia, Delta, and Southeast), the average annual acreage rose from less than 4 million acres in the early 1950's to 22.6 million acres during 1980-84, before dropping sharply to 15.6 million acres for 1985-88 (fig. 1). Production in the South increased from 11 percent (1950-54) to 19 percent (1985-88) of U.S. soybean production (table 2). The proportion of soybean production accounted for by the Lake States has remained around 10 percent, although acreage

**Table 2—Soybean acreage, yields, and production by region, 1950–88**

| Region | 1950–54 | 1960–64 | 1970–74 | 1980–84 | 1985–88 |
|---|---|---|---|---|---|
| | | | *1,000 acres* | | |
| Planted acres: | | | | | |
| Corn Belt | 10,456 | 16,032 | 25,156 | 31,022 | 30,338 |
| Delta | 2,131 | 4,433 | 8,732 | 10,538 | 7,920 |
| Lake States | 1,582 | 2,819 | 4,237 | 6,365 | 6,328 |
| Appalachia | 1,317 | 1,929 | 3,960 | 6,299 | 4,703 |
| Northern Plains | 759 | 1,400 | 2,420 | 5,304 | 6,321 |
| Southeast | 487 | 1,000 | 2,947 | 5,812 | 3,021 |
| Northeast | 267 | 490 | 584 | 972 | 961 |
| Southern Plains | 95 | 228 | 446 | 853 | 494 |
| United States | 17,094 | 28,331 | 48,481 | 67,168 | 60,085 |
| Harvested acres: | | | | | |
| Corn Belt | 10,066 | 15,870 | 24,881 | 30,663 | 29,968 |
| Delta | 1,183 | 4,301 | 8,533 | 10,183 | 7,643 |
| Lake States | 1,504 | 2,783 | 4,177 | 6,255 | 6,185 |
| Appalachia | 759 | 1,640 | 3,733 | 6,076 | 4,498 |
| Northern Plains | 671 | 1,366 | 2,362 | 5,151 | 6,166 |
| Southeast | 239 | 911 | 2,847 | 5,552 | 2,725 |
| Northeast | 201 | 454 | 570 | 950 | 940 |
| Southern Plains | 54 | 206 | 417 | 773 | 436 |
| United States | 14,677 | 27,531 | 47,520 | 65,603 | 58,559 |
| | | | *Bushels per harvested acre* | | |
| Yields: | | | | | |
| Corn Belt | 22.0 | 26.5 | 29.8 | 34.3 | 36.4 |
| Delta | 15.1 | 20.0 | 22.1 | 22.3 | 22.7 |
| Lake States | 19.1 | 21.3 | 25.4 | 32.4 | 32.6 |
| Appalachia | 16.6 | 22.2 | 24.1 | 24.2 | 26.3 |
| Northern Plains | 14.0 | 19.7 | 23.2 | 27.8 | 31.4 |
| Southeast | 13.2 | 19.8 | 21.5 | 20.5 | 22.0 |
| Northeast | 17.5 | 20.3 | 26.8 | 27.5 | 28.6 |
| Southern Plains | 11.3 | 20.7 | 22.8 | 22.2 | 24.0 |
| United States | 20.3 | 24.0 | 26.7 | 29.4 | 32.0 |
| | | | *1,000 bushels* | | |
| Production: | | | | | |
| Corn Belt | 221,841 | 420,294 | 742,433 | 1,051,265 | 1,090,460 |
| Delta | 17,887 | 86,040 | 188,404 | 227,119 | 173,491 |
| Lake States | 28,765 | 59,244 | 105,962 | 202,705 | 201,643 |
| Appalachia | 12,598 | 36,453 | 89,943 | 146,888 | 118,460 |
| Northern Plains | 9,401 | 26,972 | 54,712 | 143,341 | 193,513 |
| Southeast | 3,163 | 18,029 | 61,065 | 113,963 | 60,068 |
| Northeast | 3,508 | 9,224 | 15,282 | 26,163 | 26,906 |
| Southern Plains | 608 | 4,273 | 9,508 | 17,165 | 10,475 |
| United States | 297,770 | 660,529 | 1,267,309 | 1,928,609 | 1,874,895 |

Source: Schaub and others (1988); and U.S. Department of Agriculture, National Agricultural Statistics Service, *Crop Production*, recent issues.

expanded fourfold since the early 1950's. Tremendous growth in the Northern Plains' soybean acreage more than doubled that region's share of production to 10 percent of the U.S. total during 1985-88.

Soybeans are usually grown in rotation with other crops, especially corn. Few farmers specialize in soybeans except in the Delta. Most of the production and harvesting equipment for wheat and corn can also be used for soybeans, making soybeans an important rotation crop. The 1987 Census of Agriculture indicates that 80 percent of farmers who harvested corn in Illinois also harvested soybeans. Results were similar for Iowa where 73 percent of the corn farmers also harvested soybeans. Of the farmers who harvested wheat in Illinois, 90 percent harvested soybeans. Of the Mississippi farmers who harvested cotton, 68 percent also harvested soybeans.

### Double-Cropping Soybeans

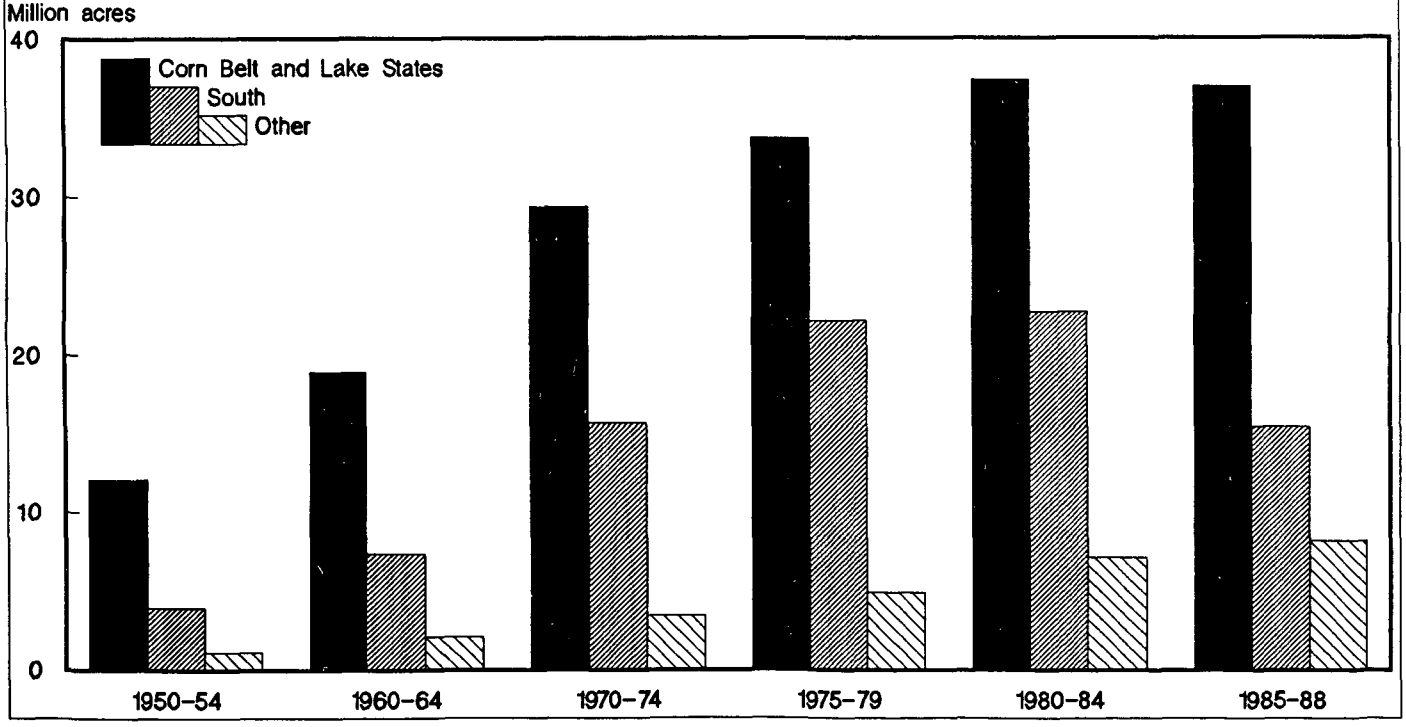
Double-cropping of soybeans increased from 7 percent of the soybean acreage planted in 1974 to 16 percent in 1982, before falling to 9 percent in 1988. The majority of double-cropped soybean acreage follows wheat. Double-cropping of soybeans has declined since 1982 because of lower soybean prices, Government acreage reduction programs, other acreage restrictions for wheat, and unfavorable weather in the South.

The three leading States in double-cropped soybean acreage planted were Arkansas, Georgia, and Missouri during the 1970's and early 1980's. In 1982, a year of record double-cropped soybean acreage, Arkansas and Georgia each had 1.6 million acres, and Missouri had nearly 950,000 acres.

Double-cropping has declined sharply since the early 1980's. Average double-cropped acreage in 1987 and 1988 in the three States above were: 790,000 in Arkansas, 285,000 in Georgia, and 385,000 in Missouri. Georgia's double-cropped acreage dropped in the past 2 years behind the Appalachian States of North Carolina (435,000 acres), Kentucky (305,000 acres), and Tennessee (300,000 acres).

The greatest potential for acreage expansion appears to be in the South, if prices rise above current levels relative to competing crops. Soybeans are more competitive with other crops in the South (excluding price-supported cotton, peanuts, and tobacco) than in the Corn Belt. Double-cropping soybeans with other crops is expected to increase in the South if soybean and win-

Figure 1
**Planted soybean acreage, by region**



ter wheat returns improve. Lower acreage reduction requirements on program wheat acreage could lead to substantially more soybean-wheat double-cropping in 1989 and 1990 (Wescott). The potential is greatest in irrigated areas. The 1982 Census of Agriculture indicated only 3.6 percent of all soybean acreage was irrigated, with more than three-quarters of that acreage in the Delta, Northern Plains, and Southern Plains.

### Domestic Soybean Uses

Demand for soybeans is derived from the demand for the joint products of meal and oil. The complex interrelationships among supply, demand, and prices of these products shift considerably from year to year and change the relative importance of meal and oil in determining the demand for soybeans. Soybeans are crushed primarily as a protein meal source, although the oil value has exceeded that of meal in a few years. The use and ending stocks of soybeans are shown in table 3.

Soybean meal is the major protein meal fed to livestock and poultry. Soybean meal increased from 59 percent of the total protein fed in 1965/66 to 75 percent in the 1980's. Poultry accounts for about 45 percent of

**Table 3—Use and ending stocks for U.S. soybeans, 1954–89** [1]

| Year beginning Sept. 1 | Crush | Seed, feed, and residual | Exports | Total use | Ending stocks | Stocks-to-use ratio |
|---|---|---|---|---|---|---|
| | *Million bushels* | | | | | *Percent* |
| 1954 | 241 | 29 | 57 | 327 | 23 | 7.0 |
| 1955 | 282 | 24 | 69 | 375 | 21 | 5.6 |
| 1956 | 314 | 41 | 84 | 439 | 32 | 7.3 |
| 1957 | 351 | 33 | 88 | 472 | 43 | 9.1 |
| 1958 | 399 | 31 | 105 | 535 | 88 | 16.4 |
| 1959 | 394 | 35 | 140 | 569 | 52 | 9.1 |
| 1960 | 406 | 39 | 135 | 580 | 27 | 4.7 |
| 1961 | 431 | 47 | 149 | 627 | 78 | 12.4 |
| 1962 | 473 | 48 | 181 | 702 | 46 | 6.6 |
| 1963 | 437 | 54 | 187 | 678 | 67 | 9.9 |
| 1964 | 479 | 47 | 212 | 738 | 30 | 4.1 |
| 1965 | 537 | 52 | 251 | 840 | 36 | 4.3 |
| 1966 | 559 | 53 | 262 | 874 | 90 | 10.3 |
| 1967 | 576 | 57 | 267 | 900 | 166 | 18.4 |
| 1968 | 606 | 53 | 287 | 946 | 327 | 34.6 |
| 1969 | 737 | 58 | 433 | 1,228 | 230 | 18.7 |
| 1970 | 760 | 64 | 434 | 1,258 | 99 | 7.9 |
| 1971 | 721 | 65 | 417 | 1,203 | 72 | 6.0 |
| 1972 | 722 | 82 | 479 | 1,283 | 60 | 4.9 |
| 1973 | 821 | 77 | 539 | 1,437 | 171 | 11.9 |
| 1974 | 701 | 77 | 421 | 1,199 | 188 | 15.7 |
| 1975 | 865 | 71 | 555 | 1,491 | 245 | 16.4 |
| 1976 | 790 | 77 | 564 | 1,431 | 103 | 7.2 |
| 1977 | 927 | 82 | 700 | 1,709 | 161 | 9.4 |
| 1978 | 1,018 | 97 | 739 | 1,854 | 176 | 9.4 |
| 1979 | 1,123 | 81 | 875 | 2,079 | 358 | 17.2 |
| 1980 | 1,020 | 99 | 724 | 1,843 | 313 | 17.3 |
| 1981 | 1,030 | 89 | 929 | 2,048 | 254 | 13.0 |
| 1982 | 1,108 | 86 | 905 | 2,099 | 345 | 18.2 |
| 1983 | 983 | 79 | 743 | 1,805 | 176 | 9.8 |
| 1984 | 1,030 | 93 | 598 | 1,721 | 316 | 18.4 |
| 1985 | 1,053 | 86 | 740 | 1,879 | 536 | 28.5 |
| 1986 | 1,179 | 104 | 757 | 2,040 | 436 | 21.4 |
| 1987 | 1,174 | 81 | 802 | 2,057 | 302 | 14.7 |
| 1988 [2] | 1,060 | 96 | 530 | 1,686 | 155 | 9.2 |
| 1989 [3] | 1,105 | 95 | 575 | 1,775 | 285 | 16.1 |

[1] Stocks on a September 1 basis are not available prior to 1953.
[2] Preliminary.
[3] Forecast.

Source: Schaub and others (1988); and U.S. Department of Agriculture, Economic Research Service, Foreign Agricultural Service, *World Agricultural Supply and Demand Estimates*, Aug. 10, 1989.

domestic soybean meal consumption, with broilers consuming half of this amount. Hogs consume nearly a third of the soybean meal fed domestically. Demand for soybean meal is also influenced by supplies and prices of competing meals such as cottonseed. Feed grain policies affect the profitability of livestock feeding and, consequently, the demand for soybean meal. About three-quarters of U.S. soybean meal is used domestically, with the remainder being exported (table 4).

Soybean oil comprises almost three-fourths of the total fats and oils used in edible oil products. The proportion of soybean oil use increased from 54 percent in 1960/61 to 74 percent in 1987/88. Nearly half of the domestic edible use of soybean oil is in salad and cooking oils, followed by baking and frying fats (35 percent) and margarine (16 percent). Eighty to 90 percent of U.S. soybean oil is used domestically, with the balance being exported or carried as ending stocks (table 5). Other fats and oils that compete with soybean oil in edible products are cottonseed, corn, peanut, lard, edible tallow, palm, rapeseed, sunflower, and coconut.

The proportion of soybean oil used in inedible products declined from 6 percent in 1960 to only 3 percent in 1987/88. Inedible uses include paint, varnish, fatty acids, resins, and plastics. There is potential for a number of new industrial uses for soybean oil. Low-cost petroleum products generally dominate industrial oil application at this time, but nonpetroleum fats and oils are being used in the production of alkyd resins, epoxidized oils, surfactants, and plasticizers.

**Table 4—U.S. soybean meal supply and disappearance, 1960–89**

| Year beginning Oct. 1 | Supply | | | Disappearance | | | Ending stocks [1] |
|---|---|---|---|---|---|---|---|
| | Stocks [1] | Production | Total | Exports | Domestic | Total | |
| | | | | *1,000 short tons* | | | |
| 1960 | 83 | 9,452 | 9,535 | 590 | 8,867 | 9,457 | 78 |
| 1961 | 78 | 10,342 | 10,420 | 1,064 | 9,262 | 10,326 | 94 |
| 1962 | 94 | 11,127 | 11,221 | 1,475 | 9,586 | 11,061 | 159 |
| 1963 | 159 | 10,609 | 10,768 | 1,479 | 9,167 | 10,646 | 122 |
| 1964 | 122 | 11,286 | 11,408 | 2,036 | 9,265 | 11,301 | 106 |
| 1965 | 106 | 12,901 | 13,007 | 2,604 | 10,271 | 12,875 | 132 |
| 1966 | 132 | 13,483 | 13,615 | 2,657 | 10,820 | 13,477 | 138 |
| 1967 | 138 | 13,660 | 13,798 | 2,899 | 10,753 | 13,652 | 145 |
| 1968 | 145 | 14,581 | 14,726 | 3,044 | 11,525 | 14,569 | 157 |
| 1969 | 157 | 17,596 | 17,753 | 4,035 | 13,581 | 17,616 | 137 |
| 1970 | 137 | 18,035 | 18,172 | 4,559 | 13,467 | 18,026 | 146 |
| 1971 | 146 | 17,024 | 17,170 | 3,805 | 13,173 | 16,978 | 192 |
| 1972 | 192 | 16,709 | 16,901 | 4,745 | 11,972 | 16,717 | 183 |
| 1973 | 183 | 19,674 | 19,857 | 5,548 | 13,802 | 19,350 | 507 |
| 1974 | 507 | 16,702 | 17,209 | 4,299 | 12,551 | 16,850 | 358 |
| 1975 | 358 | 20,754 | 21,112 | 5,145 | 15,612 | 20,757 | 355 |
| 1976 | 355 | 18,488 | 18,843 | 4,559 | 14,056 | 18,615 | 228 |
| 1977 | 228 | 22,371 | 22,599 | 6,080 | 16,276 | 22,356 | 243 |
| 1978 | 243 | 24,354 | 24,597 | 6,610 | 17,720 | 24,330 | 267 |
| 1979 | 267 | 27,105 | 27,372 | 7,932 | 19,214 | 27,146 | 226 |
| 1980 | 226 | 24,312 | 24,538 | 6,784 | 17,591 | 24,375 | 163 |
| 1981 | 163 | 24,634 | 24,797 | 6,908 | 17,714 | 24,622 | 175 |
| 1982 | 175 | 26,714 | 26,889 | 7,109 | 19,306 | 26,415 | 474 |
| 1983 | 474 | 22,756 | 23,230 | 5,360 | 17,615 | 22,975 | 255 |
| 1984 | 255 | 24,529 | 24,784 | 4,917 | 19,480 | 24,397 | 387 |
| 1985 | 387 | 24,951 | 25,338 | 6,036 | 19,090 | 25,126 | 212 |
| 1986 | 212 | 27,758 | 27,970 | 7,743 | 20,387 | 27,730 | 240 |
| 1987 | 240 | 28,060 | 28,300 | 6,871 | 21,276 | 28,147 | 153 |
| 1988 [2] | 153 | 24,897 | 25,050 | 5,250 | 19,500 | 24,750 | 300 |
| 1989 [3] | 300 | 26,250 | 26,550 | 5,250 | 21,000 | 26,250 | 300 |

[1] Stocks at processor plants, includes millfeed (hull meal).
[2] Preliminary.
[3] Forecast.
Source: Schaub and others (1988); and U.S. Department of Agriculture, Economic Research Service, Foreign Agricultural Service, *World Agricultural Supply and Demand Estimates*, Aug. 10, 1989.

**Table 5—U.S. soybean oil supply and disappearance, 1960–89**

| Year beginning Oct. 1 | Supply | | | Disappearance | | | Ending stocks |
|---|---|---|---|---|---|---|---|
| | Stocks | Production | Total | Exports | Domestic | Total | |
| | | | | *Million pounds* | | | |
| 1960 | 308 | 4,420 | 4,728 | 721 | 3,330 | 4,051 | 677 |
| 1961 | 677 | 4,790 | 5,467 | 1,309 | 3,540 | 4,849 | 618 |
| 1962 | 618 | 5,091 | 5,709 | 1,165 | 3,624 | 4,789 | 920 |
| 1963 | 920 | 4,822 | 5,742 | 1,106 | 4,058 | 5,164 | 578 |
| 1964 | 578 | 5,146 | 5,724 | 1,340 | 4,087 | 5,427 | 297 |
| 1965 | 297 | 5,800 | 6,097 | 923 | 4,712 | 5,635 | 462 |
| 1966 | 462 | 6,076 | 6,538 | 1,077 | 4,865 | 5,942 | 596 |
| 1967 | 596 | 6,032 | 6,628 | 963 | 5,125 | 6,088 | 540 |
| 1968 | 540 | 6,531 | 7,071 | 870 | 5,786 | 6,656 | 415 |
| 1969 | 415 | 7,904 | 8,319 | 1,419 | 6,357 | 7,776 | 543 |
| 1970 | 543 | 8,265 | 8,808 | 1,743 | 6,292 | 8,035 | 773 |
| 1971 | 773 | 7,892 | 8,665 | 1,398 | 6,482 | 7,880 | 785 |
| 1972 | 785 | 7,501 | 8,286 | 1,066 | 6,704 | 7,770 | 516 |
| 1973 | 516 | 8,995 | 9,511 | 1,436 | 7,280 | 8,716 | 794 |
| 1974 | 794 | 7,375 | 8,169 | 1,028 | 6,580 | 7,608 | 561 |
| 1975 | 561 | 9,630 | 10,191 | 976 | 7,964 | 8,940 | 1,251 |
| 1976 | 1,251 | 8,578 | 9,829 | 1,547 | 7,511 | 9,058 | 771 |
| 1977 | 771 | 10,288 | 11,059 | 2,057 | 8,273 | 10,330 | 729 |
| 1978 | 729 | 11,323 | 12,052 | 2,334 | 8,942 | 11,276 | 776 |
| 1979 | 776 | 12,105 | 12,881 | 2,690 | 8,891 | 11,671 | 1,210 |
| 1980 | 1,210 | 11,270 | 12,480 | 1,631 | 9,113 | 10,744 | 1,736 |
| 1981 | 1,736 | 10,979 | 12,715 | 2,077 | 9,536 | 11,612 | 1,103 |
| 1982 | 1,103 | 12,040 | 13,143 | 2,025 | 9,857 | 11,882 | 1,261 |
| 1983 | 1,261 | 10,872 | 12,133 | 1,824 | 9,588 | 11,412 | 721 |
| 1984 | 721 | 11,468 | 12,189 | 1,640 [1] | 9,917 | 11,557 | 632 |
| 1985 | 632 | 11,617 | 12,249 | 1,249 [1] | 10,053 | 11,302 | 947 |
| 1986 | 947 | 12,783 | 13,730 | 1,172 [1] | 10,833 | 12,005 | 1,725 |
| 1987 | 1,725 | 12,974 | 14,895 | 1,677 [1] | 10,930 | 12,803 | 2,092 |
| 1988 [2] | 2,092 | 11,648 | 13,890 | 1,275 [1] | 10,400 | 11,825 | 2,065 |
| 1989 [3] | 2,065 | 12,275 | 14,370 | 1,370 [1] | 10,900 | 12,300 | 2,070 |

[1] Data represents net exports; imports for 1984–89 are, respectively, 20, 8, 15, 196, 150, and 30 million pounds.
[2] Preliminary.
[3] Forecast.
Source: Schaub and others (1988); and U.S. Department of Agriculture, Economic Research Service, Foreign Agricultural Service, *World Agricultural Supply and Demand Estimates*, Aug. 10, 1989.

## Processing Margins

The processing margin is the difference between the price of soybeans and the value of the soybean products: oil and meal. The margin indicates the cost, including profit, of providing crushing services. A number of factors influence the margin. These include fluctuations in soybean supply and demand, the buying practices of the processor, location and size of the processor, competition for soybean purchases, and product yields per bushel of soybeans.

During the 1970's, the annual average processing margin (based on spot market prices) averaged 32 cents per bushel, double the average for the 1960's. From 1983/84 to 1987/88, processing margins ranged from 27 cents (1983/84) to 81 cents (1987/88) per bushel with an average of 41 cents per bushel.

## Soybean Product Value

The value of soybeans depends on the prices and yields of oil and meal (see app. table 2 for soybean value comparisons). The oil and meal content of soybeans varies among regions because of geographic and agronomic factors. The oil content tends to decrease, while the protein and meal content tends to increase, as soybeans are grown in progressively warmer parts of the United States. The variation in oil and meal content of soybeans is not included in the soybean grade standards, so prices paid for soybeans are adjusted accordingly in certain areas.

The amount and value of meal obtained from processing a bushel of soybeans exceeds that from the oil. During the 1983-87 crop years, average meal yield was 4.3 times that of oil: 47.3 pounds (80 percent) of

meal to 11 pounds (18 percent) of oil per 60-pound bushel. However, oil sold for 2.8 times the price of meal (23.4 cents versus 8.5 cents), so soybean oil represented 39 percent of the value and soybean meal accounted for 61 percent.

### Costs and Returns

Farmers' returns above cash production expenses have varied considerably during the 1980's. Per-bushel returns above cash expenses fell steadily from 1978 to 1982 (table 6), due mainly to rapidly rising costs of production. In 1983, the payment-in-kind program reduced soybean acreage and total cash expenses fell. However, the value of soybean production increased because of higher prices. Since 1983, per-bushel returns have continued to be depressed relative to those of the late 1970's. An increase in soybean prices, due to the drought-reduced crop of 1988, increased per-bushel returns for the 1988 crop of soybeans. However, market returns are expected to be much lower for the 1989 and 1990 crops of soybeans.

Returns to soybeans per planted acre vary from year to year depending on prices and yields, but generally declined through the 1980's before rebounding in 1987 and 1988. For example, returns above cash expenses from soybeans dropped from $103 per planted acre in 1980 to $77 in 1987. Although average yields increased from 26 bushels per planted acre in 1980 to 34 bushels in 1987, returns per acre and per bushel declined because of lower soybean prices during the 1980's, except for 1983 (another drought-reduced crop). However, gross returns (nominal) for 1988/89 soybeans are forecast to be $197 per harvested acre (app. table 2), in spite of drought-reduced average yields.

Returns above cash expenses vary among regions. Returns per bushel and per acre are highest in the Corn Belt and Lake States, even though expenses are high, because of higher yields. Returns are lowest in the Southeast because of relatively low yields and high expenses for fertilizer, herbicides, and insecticides. The relatively low returns in the South are partially offset when soybeans are double-cropped with wheat because fixed costs such as land and equipment can be spread over two crops.

### Price Trends

Soybean prices followed a moderate upward trend through the 1960's and then increased substantially in the 1970's (fig. 2, app. table 3). Average farm prices of soybeans rose from $2.13 per bushel for the 1960/61 marketing year to $2.85 in 1970/71, and then jumped to $7.57 per bushel for 1980/81.

Considerable year-to-year fluctuation characterized price behavior during the 1970's and 1980's. Declining prices in 1982 corresponded to that year's recession. But, in 1983, the payment-in-kind program and drought-reduced crop boosted prices. Prices fell sharply during 1984-86 as foreign economic growth slowed and the strength of the U.S. dollar raised importers' prices. Prices rose again in 1987 in response to greater soy-

**Table 6—U.S. soybean sector costs and returns, 1976–87**

| Crop year | Value of production | Total cash expenses [1] | Return above cash expenses [2] | | |
|---|---|---|---|---|---|
| | | | Total | Nominal | Deflated |
| | *Billion dollars* | | | *Dollars per bushel* | |
| 1976 | 8.78 | 3.19 | 5.58 | 4.33 | 6.86 |
| 1977 | 10.39 | 4.15 | 6.24 | 3.53 | 5.25 |
| 1978 | 12.45 | 4.90 | 7.54 | 4.04 | 5.60 |
| 1979 | 14.20 | 6.03 | 8.17 | 3.61 | 4.59 |
| 1980 | 13.61 | 6.77 | 6.84 | 3.71 | 4.45 |
| 1981 | 12.01 | 7.18 | 4.83 | 2.43 | 2.76 |
| 1982 | 12.38 | 7.47 | 4.90 | 2.24 | 2.24 |
| 1983 | 12.81 | 7.03 | 5.77 | 3.53 | 3.40 |
| 1984 | 10.87 | 7.91 | 2.95 | 1.59 | 1.48 |
| 1985 | 10.60 | 6.10 | 4.50 | 2.14 | 1.93 |
| 1986 | 9.27 | 5.35 | 3.93 | 2.02 | 1.77 |
| 1987 | 11.31 | 5.56 | 5.75 | 2.99 | 2.54 |

[1] Cash costs per planted acre times acreage planted.
[2] The difference between value of production and total cash expenses; this difference was divided by the quantity produced and was then deflated (1982 = 1.0).
Source: U.S. Department of Agriculture, Economic Research Service, *Economic Indicators of the Farm Sector: Costs of Production*, annual issues; and U.S. Department of Agriculture, National Agricultural Statistics Service, *Agricultural Prices*, annual issues.

bean demand, and the 1988 drought led to even higher prices.

## Soybean Trade and Foreign Competition

World trade in soybeans and products (meal and oil) grew dramatically from the early 1960's to the early 1980's. Rising real incomes in many countries led to increased consumption of livestock products, which in turn stimulated the demand for oilseed meals as protein in feed rations. Also, technological innovations in food processing, coupled with changing consumer tastes, resulted in broader use of vegetable oils in food and industrial products. Demand for oilseed products outpaced domestic production in many countries, expanding import markets for oilseeds and products in those countries.

### Soybean Exports

Soybeans account for about 75 percent of international trade in oilseeds (app. table 4). World exports of soybeans grew from 6.5 million tons in 1964/65 to 29.5 million tons in 1981/82 and have ranged from 25 to 30 million tons since 1981/82 (table 7, app. table 5).

Soybeans dominate U.S. oilseed exports. Soybean export earnings for FY 1984-88 averaged $4.6 billion, representing 93 percent of oilseed export earnings and 14 percent of total U.S. agricultural export sales. The U.S. soybean industry has become increasingly dependent on the export market. About 42 percent of the U.S. soybean crop was exported as beans in the early 1980's, compared with 24 percent in the early 1960's and 37 percent in the early 1970's. The United States is the leading exporter, although the U.S. export share has declined from around 90 percent in the late 1960's and early 1970's to nearly 60 percent in the late 1980's (app. table 6) because of the emergence of Brazil as a major soybean exporter in the early 1970's, followed by Argentina in the late 1970's (app. table 7). Higher prices for soybeans, beginning in the early 1970's, appear to have accelerated the expansion of the soybean industries in Brazil and Argentina.

U.S. soybean exports have risen substantially since the mid-1960's, from 5.8 million tons in 1964/65 to a record 25.3 million tons in 1981/82, a fourfold increase (table 7). Primary causes for this growth included an expansion in oilseed crushing facilities, especially in Western Europe and Japan, a response to the strong demand for soybean meal for use in high concentrate

Figure 2
**Soybean average market prices and support prices**

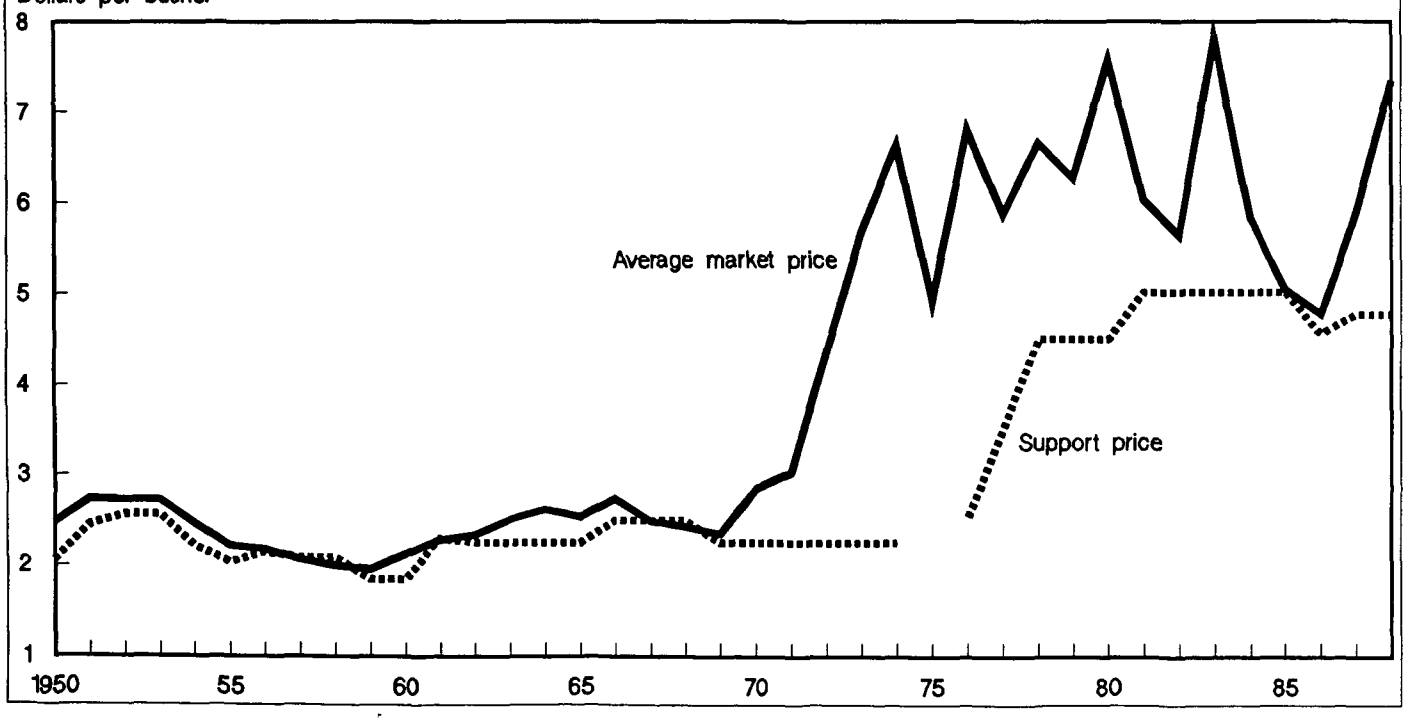


**Table 7—World soybean exports, major exporters and regions, 1964–89**

| Crop year [1] | United States | Brazil | Argentina | China | Other countries | | | World |
|---|---|---|---|---|---|---|---|---|
| | | | | | Developed | Developing | Centrally planned | |
| | | | | *1,000 metric tons* | | | | |
| 1964/65 | 5,774 | 75 | 0 | 577 | 89 | 33 | 0 | 6,548 |
| 1965/66 | 6,820 | 121 | 0 | 550 | 63 | 37 | 1 | 7,592 |
| 1966/67 | 7,119 | 305 | 0 | 565 | 99 | 33 | 4 | 8,125 |
| 1967/68 | 7,255 | 66 | 0 | 571 | 46 | 41 | 14 | 7,993 |
| 1968/69 | 7,805 | 310 | 0 | 488 | 37 | 29 | 6 | 8,675 |
| 1969/70 | 11,773 | 290 | 0 | 424 | 50 | 34 | 0 | 12,571 |
| 1970/71 | 11,806 | 230 | 0 | 460 | 38 | 42 | 0 | 12,576 |
| 1971/72 | 11,344 | 1,023 | 0 | 370 | 59 | 70 | 40 | 12,906 |
| 1972/73 | 13,048 | 1,788 | 0 | 310 | 144 | 113 | 38 | 15,441 |
| 1973/74 | 14,673 | 2,862 | 0 | 340 | 53 | 131 | 27 | 18,086 |
| 1974/75 | 11,450 | 3,516 | 0 | 330 | 126 | 147 | 11 | 15,580 |
| 1975/76 | 15,107 | 3,328 | 111 | 178 | 244 | 261 | 0 | 19,229 |
| 1976/77 | 15,351 | 2,581 | 623 | 115 | 152 | 306 | 9 | 19,137 |
| 1977/78 | 19,061 | 659 | 1,969 | 90 | 302 | 258 | 0 | 22,339 |
| 1978/79 | 20,117 | 638 | 2,776 | 274 | 464 | 389 | 0 | 24,658 |
| 1979/80 | 23,818 | 1,533 | 2,726 | 207 | 325 | 454 | 0 | 29,063 |
| 1980/81 | 19,712 | 1,502 | 2,190 | 143 | 312 | 679 | 0 | 24,538 |
| 1981/82 | 25,285 | 797 | 2,151 | 110 | 307 | 878 | 11 | 29,539 |
| 1982/83 | 24,634 | 1,316 | 1,338 | 320 | 267 | 662 | 17 | 28,554 |
| 1983/84 | 20,215 | 1,580 | 3,132 | 800 | 154 | 484 | 5 | 26,370 |
| 1984/85 | 16,279 | 3,456 | 2,954 | 1,080 | 216 | 888 | 40 | 24,913 |
| 1985/86 | 20,158 | 1,192 | 2,566 | 1,260 | 301 | 565 | 55 | 26,097 |
| 1986/87 | 20,600 | 3,290 | 1,292 | 1,750 | 377 | 1,151 | 35 | 28,495 |
| 1987/88 | 21,827 | 3,020 | 2,100 | 1,482 | 514 | 1,373 | 55 | 30,371 |
| 1988/89 [2] | 14,424 | 4,600 | 500 | 1,200 | 471 | 1,760 | 60 | 23,015 |
| 1989/90 [3] | 15,649 | 4,500 | 2,500 | 1,200 | 446 | 1,463 | 45 | 25,803 |

[1] Based on aggregate of differing local marketing years.
[2] Preliminary.
[3] Forecast.
Source: U.S. Department of Agriculture, Foreign Agricultural Service, Oilseeds and Products Division: production, supply, and distribution database, August 1989.

feed rations, and the growing world demand for vegetable oils. The competitive position of U.S. soybeans for export has been fostered by a domestic policy of small reserves and relatively low loan rates. Soybeans have also benefited from duty-free status in the European Community as a result of the Dillon Round of trade negotiations.

Another factor contributing to the strong growth in U.S. soybean exports was the decline in Brazil's soybean exports from the mid-1970's to the mid-1980's. This was the result of Brazil's development of a large crushing capacity, small crops in 1978 and 1979, and a myriad of changing taxes, export subsidies, and export quotas designed to stimulate the expansion of domestic crush capacity and to increase the export of meal and oil rather than beans. Argentine soybean exports are also taxed at higher rates than meal and oil exports to generate revenue and encourage sales to the domestic crushing industry, thereby increasing the value added before exporting. However, South American soybean exports are forecast to be the highest ever in 1989/90.

U.S. soybean exports have declined since 1981/82 because of slowing economic growth abroad, the strong U.S. dollar which raised the cost to importers into 1985 (Stallings), competition from foreign oilseeds, and drought-reduced U.S. crops in 1983 and 1988.

The EC and Japan are the world's major importers of soybeans (table 8). They accounted for 46 percent and 21 percent, respectively, of U.S. soybean exports in FY 1983-87. Other significant U.S. markets during that period included Taiwan, 7 percent; Mexico, 6 percent; and South Korea, 4 percent (app. table 8).

### Soybean Meal Exports

World trade in soybean meal also increased substantially, as world exports rose from 2.8 million tons in

**Table 8—World soybean imports, major importers and regions, 1964–89**

| Crop year [1] | EC–12 [2] | Japan | Other countries | | | World |
|---|---|---|---|---|---|---|
| | | | Developed | Developing | Centrally planned | |
| | | | *1,000 metric tons* | | | |
| 1964/65 | 3,412 | 1,864 | 634 | 543 | 213 | 6,666 |
| 1965/66 | 4,173 | 2,178 | 677 | 563 | 79 | 7,670 |
| 1966/67 | 4,532 | 2,183 | 672 | 750 | 112 | 8,249 |
| 1967/68 | 4,548 | 2,435 | 552 | 771 | 78 | 8,384 |
| 1968/69 | 5,022 | 2,604 | 563 | 927 | 211 | 9,327 |
| 1969/70 | 6,972 | 3,257 | 722 | 1,232 | 160 | 12,343 |
| 1970/71 | 7,153 | 3,226 | 758 | 1,309 | 201 | 12,647 |
| 1971/72 | 7,997 | 3,396 | 733 | 1,345 | 464 | 13,935 |
| 1972/73 | 7,971 | 3,635 | 654 | 1,444 | 1,176 | 14,880 |
| 1973/74 | 10,765 | 3,244 | 853 | 1,573 | 855 | 17,290 |
| 1974/75 | 10,074 | 3,334 | 811 | 1,631 | 515 | 16,365 |
| 1975/76 | 11,410 | 3,554 | 737 | 2,042 | 2,140 | 19,883 |
| 1976/77 | 11,237 | 3,602 | 780 | 2,229 | 1,868 | 19,716 |
| 1977/78 | 13,568 | 4,260 | 690 | 2,837 | 1,760 | 23,115 |
| 1978/79 | 14,633 | 4,132 | 845 | 3,444 | 2,810 | 25,878 |
| 1979/80 | 16,231 | 4,165 | 990 | 3,613 | 3,272 | 28,271 |
| 1980/81 | 13,217 | 4,213 | 918 | 5,435 | 2,451 | 26,223 |
| 1981/82 | 15,945 | 4,486 | 927 | 5,380 | 2,489 | 29,243 |
| 1982/83 | 15,555 | 4,871 | 990 | 5,140 | 1,870 | 28,426 |
| 1983/84 | 12,878 | 4,728 | 785 | 5,233 | 1,792 | 25,416 |
| 1984/85 | 12,890 | 4,611 | 776 | 5,797 | 1,433 | 25,507 |
| 1985/86 | 13,218 | 4,796 | 678 | 5,523 | 3,387 | 27,602 |
| 1986/87 | 14,422 | 4,866 | 796 | 6,782 | 2,517 | 29,383 |
| 1987/88 | 13,567 | 4,847 | 798 | 6,975 | 2,415 | 28,602 |
| 1988/89 [3] | 10,788 | 4,300 | 659 | 6,739 | 1,270 | 23,756 |
| 1989/90 [4] | 12,001 | 4,400 | 667 | 6,521 | 1,890 | 25,479 |

[1] Based on aggregate of differing local marketing years.
[2] Includes intra-EC trade.
[3] Preliminary.
[4] Forecast.
Source: U.S. Department of Agriculture, Foreign Agricultural Service, Oilseeds and Products Division: production, supply, and distribution database, August 1989.

1964/65 to 27.6 million tons in 1987/88 (table 9). Soybean meal now accounts for 70 percent of the major protein meals traded internationally (app. table 9). Brazil is the leading exporter, followed by Argentina, the United States, and the EC. The EC is the largest soybean meal importer, followed by the USSR, Poland, and East Germany (table 10).

Soybean meal is the principal oilseed meal exported by the United States. Export earnings averaged $1.18 billion for FY 1984-88, accounting for 98 percent of U.S. oilseed cake and meal exports and almost 4 percent of total U.S. agricultural export earnings.

U.S. soybean meal exports grew from 1.8 million tons in 1964/65 to 7.2 million tons in 1979/80, and averaged around 5.5 million tons in the latter 1980's. This increase coincided with a growth in livestock production around the world and expanded use of high protein meals in feed rations. Major outlets for U.S. soybean meal in FY 1984-88 were the EC, which took 42 percent of U.S. exports; Venezuela, 11percent; Canada, 11 percent; and the USSR, 5 percent.

The United States was the leading exporter of soybean meal during the 1960's and through the mid-1970's. However, in 1977, a decline in U.S. exports, coupled with a large increase in Brazil's exports, dropped the United States to second place in soybean meal exports that year. The United States temporarily regained its lead in 1978 and 1979 as a result of smaller crops in Brazil, but has been behind Brazil since then.

U.S. exports have remained below the record 1979/80 level because of expanding exports from Brazil and Argentina, where export taxes encourage soybean

**Table 9—World soybean meal exports, major exporters and regions, 1964–89**

| Crop year [1] | United States | Brazil | Argentina | EC–12 [2] | Other countries | | | World |
|---|---|---|---|---|---|---|---|---|
| | | | | | Developed | Developing | Centrally planned | |
| | | | | *1,000 metric tons* | | | | |
| 1964/65 | 1,847 | 105 | 0 | 606 | 246 | 22 | 0 | 2,826 |
| 1965/66 | 2,360 | 185 | 0 | 749 | 226 | 14 | 0 | 3,534 |
| 1966/67 | 2,410 | 125 | 0 | 759 | 195 | 9 | 0 | 3,498 |
| 1967/68 | 2,630 | 235 | 0 | 798 | 195 | 11 | 0 | 3,869 |
| 1968/69 | 2,762 | 310 | 0 | 991 | 179 | 32 | 0 | 4,274 |
| 1969/70 | 3,661 | 580 | 0 | 1,231 | 223 | 33 | 0 | 5,728 |
| 1970/71 | 4,136 | 990 | 0 | 1,364 | 198 | 31 | 0 | 6,719 |
| 1971/72 | 3,452 | 1,506 | 0 | 1,670 | 210 | 27 | 23 | 6,888 |
| 1972/73 | 4,304 | 1,373 | 14 | 2,167 | 250 | 49 | 0 | 8,157 |
| 1973/74 | 5,033 | 2,396 | 12 | 2,263 | 286 | 57 | 21 | 10,068 |
| 1974/75 | 3,900 | 3,450 | 158 | 1,740 | 266 | 109 | 25 | 9,648 |
| 1975/76 | 4,667 | 4,078 | 251 | 1,909 | 153 | 108 | 16 | 11,182 |
| 1976/77 | 4,136 | 5,329 | 325 | 1,818 | 142 | 143 | 17 | 11,910 |
| 1977/78 | 5,516 | 5,368 | 370 | 2,789 | 162 | 218 | 30 | 14,453 |
| 1978/79 | 5,997 | 5,038 | 260 | 3,116 | 186 | 341 | 31 | 14,969 |
| 1979/80 | 7,196 | 6,936 | 277 | 3,767 | 202 | 408 | 66 | 18,852 |
| 1980/81 | 6,154 | 8,562 | 591 | 3,904 | 237 | 247 | 185 | 19,880 |
| 1981/82 | 6,266 | 7,822 | 1,209 | 4,547 | 201 | 439 | 289 | 20,773 |
| 1982/83 | 6,449 | 7,994 | 1,765 | 5,861 | 180 | 489 | 586 | 23,324 |
| 1983/84 | 4,862 | 7,690 | 2,663 | 5,382 | 158 | 499 | 708 | 21,962 |
| 1984/85 | 4,460 | 8,628 | 2,521 | 5,149 | 152 | 575 | 661 | 22,146 |
| 1985/86 | 5,476 | 6,961 | 3,248 | 5,081 | 152 | 753 | 1,133 | 22,804 |
| 1986/87 | 6,661 | 8,030 | 3,600 | 5,079 | 159 | 681 | 1,547 | 25,757 |
| 1987/88 | 6,233 | 8,477 | 5,350 | 4,323 | 146 | 641 | 2,420 | 27,590 |
| 1988/89 [3] | 4,763 | 9,500 | 4,450 | 4,075 | 136 | 1,275 | 1,606 | 25,805 |
| 1989/90 [4] | 4,763 | 9,600 | 5,450 | 4,395 | 141 | 1,099 | 1,605 | 27,053 |

[1] Based on aggregate of differing local marketing years.
[2] Includes intra-EC trade.
[3] Preliminary.
[4] Forecast.
Source: U.S. Department of Agriculture, Foreign Agricultural Service, Oilseeds and Products Division: production, supply, and distribution database, August 1989.

meal and oil exports over soybean exports, and expanding exports from the EC. The EC, a major soybean processor, has been a strong competitor in West and East European markets because of crushing subsidies that allow high support prices for domestic producers but allow oil and meal to be sold at world prices. Slowed economic growth abroad and the strength of the dollar also dampened U.S. exports.

### Soybean Oil Exports

World exports of soybean oil expanded from 0.6 million tons in the latter 1960's to 4.0 million tons in 1986/87 (table 11). Soybean oil accounts for around 21 percent of the world's edible oil trade, second only to palm oil (app. table 10). Soybean oil supplies are more closely tied to the demand for soybean meal than to the demand for vegetable oils. The EC is the largest soybean oil exporter (including intra-EC trade), followed by Brazil, the United States, and Argentina.

U.S. export earnings from soybean oil averaged $428 million for FY 1984-88, about 1 percent of total U.S. agricultural export sales. U.S. soybean oil exports showed no discernible trend between 1964/65 and 1976/77, fluctuating between 395,000 tons and 790,000 tons. Exports rose from 1976 to 1980, reflecting strong demand. Since 1981, exports have fallen short of the record attained in 1979/80. The decline reflects (1) lower U.S. soybean oil production; (2) competition from Brazil, Argentina, and the EC (table 11); (3) increased price competition from other oils, mainly palm and rapeseed oil; (4) slower economic growth abroad and financial indebtedness of many importing countries; and (5) the high relative cost of U.S. soybean oil due to the strong value of the U.S. dollar in the early 1980's.

The U.S. share of world soybean oil exports—75 percent in the 1960's—dropped to only 14 percent in 1986/87. The EC emerged as a net exporter in the mid-

**Table 10—World soybean meal imports, major importers and regions, 1964–89**

| Crop year [1] | EC-12 [2] | USSR | East Germany | Poland | Other countries | | | World |
|---|---|---|---|---|---|---|---|---|
| | | | | | Developed | Developing | Centrally planned | |
| | | | | *1,000 metric tons* | | | | |
| 1964/65 | 1,968 | 0 | 170 | 10 | 555 | 47 | 132 | 2,882 |
| 1965/66 | 2,543 | 0 | 200 | 53 | 557 | 47 | 132 | 3,532 |
| 1966/67 | 2,465 | 0 | 295 | 77 | 550 | 82 | 234 | 3,703 |
| 1967/68 | 2,675 | 0 | 320 | 75 | 547 | 85 | 217 | 3,919 |
| 1968/69 | 3,082 | 0 | 390 | 90 | 549 | 111 | 299 | 4,521 |
| 1969/70 | 3,647 | 0 | 445 | 103 | 667 | 171 | 629 | 5,662 |
| 1970/71 | 4,313 | 0 | 540 | 113 | 667 | 308 | 707 | 6,648 |
| 1971/72 | 4,663 | 0 | 710 | 256 | 706 | 360 | 957 | 7,652 |
| 1972/73 | 4,938 | 0 | 655 | 499 | 955 | 231 | 1,290 | 8,568 |
| 1973/74 | 5,127 | 0 | 705 | 485 | 997 | 475 | 1,424 | 9,213 |
| 1974/75 | 5,096 | 0 | 740 | 575 | 816 | 504 | 1,220 | 8,951 |
| 1975/76 | 6,323 | 0 | 745 | 548 | 1,054 | 821 | 1,460 | 10,951 |
| 1976/77 | 6,275 | 0 | 850 | 644 | 1,209 | 1,364 | 1,417 | 11,759 |
| 1977/78 | 8,507 | 0 | 800 | 730 | 1,381 | 1,562 | 1,596 | 14,576 |
| 1978/79 | 8,980 | 52 | 840 | 938 | 1,403 | 1,817 | 1,635 | 15,665 |
| 1979/80 | 10,077 | 345 | 842 | 1,060 | 1,343 | 2,317 | 1,948 | 17,932 |
| 1980/81 | 9,783 | 966 | 773 | 1,227 | 1,378 | 2,468 | 2,164 | 18,759 |
| 1981/82 | 12,153 | 1,103 | 1,028 | 640 | 1,324 | 3,106 | 1,684 | 21,038 |
| 1982/83 | 12,338 | 2,812 | 1,092 | 350 | 1,343 | 3,488 | 1,671 | 23,094 |
| 1983/84 | 12,435 | 827 | 1,317 | 670 | 1,514 | 4,075 | 1,574 | 22,412 |
| 1984/85 | 13,336 | 550 | 972 | 807 | 1,515 | 3,928 | 1,721 | 22,829 |
| 1985/86 | 13,785 | 478 | 1,111 | 785 | 1,611 | 4,356 | 1,794 | 23,920 |
| 1986/87 | 13,596 | 2,900 | 1,040 | 1,030 | 1,532 | 4,690 | 1,837 | 26,625 |
| 1987/88 | 12,051 | 3,000 | 915 | 980 | 2,030 | 4,897 | 1,812 | 25,685 |
| 1988/89 [3] | 11,515 | 4,000 | 950 | 1,000 | 1,725 | 5,013 | 1,769 | 25,972 |
| 1989/90 [4] | 12,563 | 4,200 | 1,080 | 1,000 | 1,905 | 5,181 | 1,763 | 27,692 |

[1] Based on aggregate of differing local marketing years.
[2] Includes intra-EC trade.
[3] Preliminary.
[4] Forecast.
Source: U.S. Department of Agriculture, Foreign Agricultural Service, Oilseeds and Products Division: production, supply, and distribution database, August 1989.

1960's, and Brazil became a large exporter in the 1970's, joined by Argentina in the 1980's.

Pakistan and Iran are the largest soybean oil importers, followed by India (table 12). Primary foreign customers for U.S. soybean oil during FY 1984-88 were Pakistan, which took 34 percent; India, 13 percent; Mexico, 6 percent; and the Dominican Republic, 5 percent. A significant portion of U.S. soybean oil exports are Government-assisted by both concessional and commercial export programs. Of the total U.S. soybean oil exports from FY 1965 through FY 1977, about 45 percent were exported under the concessional loan and donation programs of Public Law 480. From FY 1978 through FY 1988, the PL 480 share declined to about 30 percent.

Commercial export programs also have played a role in soybean oil exports in recent years. Almost 18 percent of FY 1978-88 exports were made under the Commodity Credit Corporation's (CCC) short-term credit guarantee program, GSM-102. Exports under GSM-102 rose in FY 1988 to about 40 percent of total soybean oil exports. Under GSM-102, importers of soybean oil have up to 3 years to repay their loans at commercial interest rates. Of the total U.S. soybean oil exports from FY 1987 through FY 1988, about 15 percent were under the export enhancement program (EEP), a commercial export program announced by USDA in 1985. Under the EEP, exporters receive bonuses in the form of generic certificates to help them meet prevailing world prices for targeted commodities and countries.

## Policies in Other Exporting Countries

***Brazil***

Soybeans and soybean products continue to be Brazil's largest source of agricultural export revenues. Over the years, Brazil's soybean industry has been shaped by a myriad of rapidly changing policies: tariffs, export quotas, licenses, price supports, currency adjustments, and export subsidies. The principal objectives of the government have been to assure domestic supplies at reasonable prices, expand crushing capacity at a moderate rate, and increase export earnings of soybean meal and oil. The annual crushing capacity in Brazil, around 29 million tons, exceeds the expected record 1988/89 crop of 22 million tons.

Brazil has maintained an aggressive marketing stance since the early 1970's with the use of selected policies to enhance exports of soybean meal and oil. These have included:

(1) A drawback system which initially provided attractive financing to import soybeans for domestic processing and re-export as final products; however, no preferential financing is available at the present time.

(2) Differential taxes levied by individual states to discourage exports of raw commodities such as soybeans, thus favoring processed products.

(3) Registration requirements imposed by CACEX (government agency which controls exports) to restrict exports, especially of soybeans, to assure supplies to crushers, and occasionally of soybean oil, to prevent domestic prices from rising too rapidly.

**Table 11—World soybean oil exports, major exporters and regions, 1964–89**

| Crop year [1] | United States | Brazil and Argentina | EC–12 [2] | Other countries | | | World |
|---|---|---|---|---|---|---|---|
| | | | | Developed | Developing | Centrally planned | |
| | | | *1,000 metric tons* | | | | |
| 1964/65 | 608 | 0 | 115 | 28 | 25 | 3 | 779 |
| 1965/66 | 419 | 0 | 112 | 26 | 18 | 4 | 579 |
| 1966/67 | 488 | 0 | 148 | 28 | 6 | 6 | 676 |
| 1967/68 | 437 | 0 | 150 | 23 | 11 | 8 | 629 |
| 1968/69 | 395 | 0 | 240 | 20 | 15 | 14 | 684 |
| 1969/70 | 644 | 3 | 395 | 37 | 21 | 7 | 1,107 |
| 1970/71 | 790 | 7 | 461 | 54 | 37 | 16 | 1,365 |
| 1971/72 | 634 | 38 | 454 | 50 | 22 | 13 | 1,211 |
| 1972/73 | 484 | 104 | 490 | 27 | 15 | 17 | 1,137 |
| 1973/74 | 651 | 49 | 718 | 28 | 9 | 9 | 1,464 |
| 1974/75 | 466 | 340 | 721 | 14 | 3 | 1 | 1,545 |
| 1975/76 | 443 | 497 | 749 | 6 | 8 | 5 | 1,708 |
| 1976/77 | 702 | 624 | 814 | 10 | 8 | 3 | 2,161 |
| 1977/78 | 933 | 581 | 1,154 | 10 | 8 | 5 | 2,691 |
| 1978/79 | 1,059 | 561 | 1,253 | 20 | 13 | 6 | 2,912 |
| 1979/80 | 1,220 | 897 | 1,323 | 46 | 44 | 1 | 3,531 |
| 1980/81 | 740 | 1,296 | 1,299 | 38 | 59 | 2 | 3,434 |
| 1981/82 | 942 | 1,093 | 1,489 | 34 | 76 | 1 | 3,635 |
| 1982/83 | 918 | 1,245 | 1,472 | 46 | 85 | 3 | 3,769 |
| 1983/84 | 827 | 1,424 | 1,569 | 35 | 84 | 6 | 3,945 |
| 1984/85 | 753 | 1,479 | 1,302 | 26 | 48 | 9 | 3,617 |
| 1985/86 | 570 | 1,062 | 1,388 | 27 | 73 | 4 | 3,124 |
| 1986/87 | 538 | 1,775 | 1,439 | 20 | 217 | 1 | 3,990 |
| 1987/88 | 850 | 1,641 | 1,228 | 37 | 176 | 33 | 3,965 |
| 1988/89 [3] | 646 | 1,850 | 977 | 20 | 190 | 1 | 3,684 |
| 1989/90 [4] | 635 | 1,950 | 1,000 | 23 | 215 | 1 | 3,824 |

[1] Based on aggregate of differing local marketing years.
[2] Includes intra-EC trade.
[3] Preliminary.
[4] Forecast.
Source: U.S. Department of Agriculture, Foreign Agricultural Service, Oilseeds and Products Division: production, supply, and distribution database, August 1989.

(4) Subsidized credit, for exporters and processors, substantially below market interest rates.

In recent years, in response to International Monetary Fund (IMF) conditions for resolving its debt burden, Brazil has adjusted its subsidized interest rates, narrowing the gap with commercial rates. Also, Brazilian currency has been consistently overvalued. Benefits of export enhancement activities are largely offset by the implicit tax imposed on exporters through Brazil's exchange rate policies.

***Argentina***

Argentina's exports of oilseeds and products were controlled by the national grain marketing board, Junta Nacional de Granos (JNG), from 1973 to mid-1976. Export taxes were also used to control exports and raise revenues. Quotas were liberalized in the mid-1980's and export taxes were reduced, making Argentina's exports more competitive. The government continues to influence exports of oilseeds and derivative products by requiring exporters to register with the JNG.

In recent years, Argentina has adopted a differential tax program similar to Brazil's to encourage the export of processed products, like soybean meal and oil, instead of soybeans. It has also encouraged crop production by increasing incentives to use fertilizer. Most of the fertilizer had been going to wheat, which benefited soybeans because 60 percent of soybeans were double-cropped with wheat. In the main soybean area, farmers are switching from the wheat/soybean double-crop pattern to single-crop soybeans in an effort to achieve better yields of single-crop soybeans and reduce soil erosion. The government of 1976-83 began to liberalize agriculture by reducing agricultural export taxes. But, the reduction in export taxes was only temporary.

**Table 12—World soybean oil imports, major importers and regions, 1964-89**

| Crop year [1] | Iran | India | Pakistan | Other countries | | | World |
|---|---|---|---|---|---|---|---|
| | | | | Developed | Developing | Centrally planned | |
| | | | | *1,000 metric tons* | | | |
| 1964/65 | 28 | 41 | 108 | 241 | 235 | 65 | 718 |
| 1965/66 | 30 | 33 | 77 | 139 | 212 | 59 | 550 |
| 1966/67 | 12 | 52 | 28 | 124 | 235 | 83 | 534 |
| 1967/68 | 29 | 36 | 58 | 135 | 223 | 22 | 503 |
| 1968/69 | 32 | 84 | 74 | 194 | 276 | 31 | 691 |
| 1969/70 | 97 | 79 | 118 | 346 | 311 | 44 | 995 |
| 1970/71 | 95 | 77 | 112 | 393 | 405 | 192 | 1,274 |
| 1971/72 | 117 | 66 | 45 | 283 | 343 | 216 | 1,070 |
| 1972/73 | 93 | 73 | 62 | 322 | 296 | 170 | 1,016 |
| 1973/74 | 179 | 19 | 118 | 570 | 476 | 121 | 1,483 |
| 1974/75 | 148 | 4 | 63 | 518 | 573 | 190 | 1,496 |
| 1975/76 | 219 | 53 | 102 | 527 | 512 | 174 | 1,587 |
| 1976/77 | 165 | 438 | 97 | 541 | 685 | 224 | 2,150 |
| 1977/78 | 313 | 511 | 206 | 620 | 759 | 258 | 2,667 |
| 1978/79 | 215 | 553 | 277 | 636 | 971 | 266 | 2,927 |
| 1979/80 | 248 | 628 | 208 | 671 | 1,077 | 278 | 3,111 |
| 1980/81 | 322 | 639 | 214 | 629 | 1,102 | 452 | 3,364 |
| 1981/82 | 285 | 460 | 291 | 744 | 1,359 | 389 | 3,534 |
| 1982/83 | 346 | 537 | 306 | 682 | 1,337 | 496 | 3,704 |
| 1983/84 | 331 | 808 | 301 | 743 | 1,526 | 296 | 4,005 |
| 1984/85 | 382 | 398 | 189 | 672 | 1,258 | 555 | 3,454 |
| 1985/86 | 325 | 256 | 320 | 682 | 1,149 | 391 | 3,123 |
| 1986/87 | 420 | 363 | 189 | 692 | 1,308 | 775 | 3,747 |
| 1987/88 | 410 | 419 | 402 | 750 | 1,420 | 363 | 3,764 |
| 1988/89 [2] | 430 | 50 | 450 | 697 | 1,327 | 509 | 3,463 |
| 1989/90 [3] | 440 | 125 | 500 | 694 | 1,483 | 533 | 3,775 |

[1] Based on aggregate of differing local marketing years.
[2] Preliminary.
[3] Forecast.
Source: U.S. Department of Agriculture, Foreign Agricultural Service, Oilseeds and Products Division: production, supply, and distribution database, August 1989.

The current government (since July 1989) is phasing in reforms to control inflation, stabilize the economy, and establish the appropriate conditions for longer term growth. These measures include: reduce currency transactions, devaluate currency to establish exchange rates favorable for exports, reduce deficit spending through privatization of some government-owned transportation and communication enterprises, and phase in reduction of taxes on agricultural exports by one-half to two-thirds by July 1990.

*EC-12*

EC oilseed production has jumped tenfold in the last decade, primarily from improved varieties (particularly of rapeseed), which boosted yields, and high oilseed support prices, which encouraged oilseed planting. Support prices for oilseeds were raised to reduce EC dependence on imported oilseeds and to shift some grain area into oilseeds. Support prices for EC soybeans, sunflower, and rapeseed rose sharply in the late 1970's and early 1980's and have remained relatively stable since then. The EC passed a provision to cut support prices if production exceeds established thresholds, which happened in 1987/88 and 1988/89, and is forecast to happen for soybeans and rapeseed in 1989/90.

Although still the world's largest importer of oilseeds and oilseed products, the EC is rapidly increasing its self-sufficiency in vegetable oils, as well as becoming a significant exporter of some oils. The EC imports about two-thirds of its oilseed meal requirements, down from 90 percent 5 years ago, and U.S. oilseeds make up about half the EC imports.

The growth in EC oilseed production has produced increasingly large budget outlays for price subsidies and export aid, hence the recent stabilization of support prices and establishment of production thresholds. Export refunds and intervention purchases are also part of oilseed budget expenditures, but the majority of oilseed outlays are for crushing subsidies, which are passed through to producers. In 1986, EC expenditures on oilseeds alone totaled $2 billion, 9 percent of total agricultural support outlays (Normile).

### Prospects in Importing Countries

Growth in per capita consumption of livestock products and vegetable oils has slowed in many of the industrialized countries of Western Europe, North America, and Oceania. This, coupled with expected low or negative population growth rates and a slower increase in real income over the next decade, probably will slow demand for protein meals and vegetable oils in these markets. Meal demand in the EC is already down. European oilseed imports would be further affected by implementation of repeatedly proposed vegetable oil taxes and other restrictions by the EC to discourage consumption of imported oils.

Per capita consumption of oilseed meal and oil in developing countries and centrally planned countries is low compared with that of industrial countries, and thus is expected to rise in response to rising incomes and expanding livestock industries. A number of these countries are now burdened with large foreign debts, which could slow the rate of import expansion. The EC has a transportation advantage to East European and USSR markets and has been increasing soybean meal exports in recent years.

The USSR's new program of *Perestroika* (restructuring) includes the element of higher per capita meat consumption. Accordingly, USSR imports of soybean meal in calendar 1987 were up dramatically over the previous 3 years, and included imports of U.S. soybean meal for the first time since 1979 (Bickerton). USSR imports of 1.3 million tons of U.S. soybean meal in FY 1988 comprised 21 percent of U.S. soybean meal exports. By August 17, 1989, export sales of 1.3 million tons to the USSR constituted 30 percent of U.S. soybean meal sales. Continued large USSR imports of soybean meal would strengthen demand for either U.S. soybean meal or soybeans, if Soviet purchases of EC soybean meal rise, because most EC soybean imports are from the United States.

## History of Soybean Programs

The first Government involvement in soybeans came under the Soil Conservation and Domestic Allotment Act of 1936. Soybeans harvested for grain, hay, or seed were classified as soil-depleting, while soybeans left on land or turned under for green manure were soil-building. Farmers who participated in the soil conservation program received direct payments if they reduced acreage of soil-depleting crops, increased acreage of soil-building and soil-conserving crops, and used practices to control soil erosion.

A price support program for soybeans was implemented in 1941, with a loan rate of $1.05 per bushel. A price support loan for soybeans has been in effect every year since then, except for 1975 when economic conditions indicated that support loans would not be necessary to encourage production.

### Programs in the 1950's and 1960's

Price support loans were not mandated by farm legislation throughout this period, but were authorized at the discretion of the Secretary of Agriculture. Market prices averaged above support levels and there was only a minimum of loan activity.

There were no allotments or marketing quotas for soybeans, as there were for wheat, corn, rice, and cotton. Soybean acreage was allowed to expand on land that could not be used for these crops. Soybeans were especially competitive with corn in the Corn Belt and cotton in the Delta. Soybean acreage expanded from 15.6 million acres in 1950 to 23.6 million acres in 1959 (app. table 11). Unlike other major field crops, soybean yields were virtually unchanged, so production increases came almost entirely from acreage expansion.

In January 1959, USDA announced the first soybean reseal program for 1958 farm-stored soybeans, where farmers in designated areas were able to extend farm-storage loans or convert purchase agreements to loans for an additional year following the loan maturity date. The reseal program was offered because: (1) a large quantity of soybeans was placed under support (over 44 million bushels) from the record 1958 crop (app. table 3), and (2) commercial storage was in short supply because of record grain supplies. The reseal program was also used for the 1961, 1963, and 1966-69 crops. For the 1967-69 crops, commercially stored soybeans, as well as farm-stored, could be resealed. This program was especially effective for the 1961 and 1963 crops when 22 million bushels were resealed and only about 3.4 million bushels were eventually forfeited to the CCC.

Soybean acreage increased through the 1960's, but so did demand (see table 3 for domestic crush and exports). Policymakers encouraged a shift in acreage away from crops with chronic oversupply problems to soybeans. In 1961, soybeans eligible for support were restricted to farms where the 1959-60 average acreage of land had been maintained either in conserving uses or idle. The purpose was to encourage soybean production on land that would otherwise be used for crops in surplus. To increase soybean production, the 1966 feed grain program was revised to provide support payments to feed grain program participants who voluntarily planted soybeans on feed grain acreage.

### Programs in the 1970's and 1980's

The Agricultural Act of 1973 gave farmers greater freedom to shift between soybeans and other crops. Farmers were allowed to plant soybeans on allotted acreages of other program crops and maintain their allotment history for those crops. The loan and purchase agreement (price support loan) program for soybeans was legislatively mandated for the first time under the Food and Agriculture Act of 1977. The Agriculture and Food Act of 1981 and the Food Security Act of 1985 also mandated the price support loan program for soybeans. Soybean producers remain exempted from acreage reduction provisions as a condition for price support eligibility.

The 1985 Act established the loan rate at $5.02 per bushel for soybeans. For the 1988-90 crops, the loan rate will be 75 percent of the simple average of prices received by farmers over the preceding 5 marketing years, excluding the high and low years, with a minimum of $4.50 per bushel. However, the support price cannot be reduced by more than 5 percent in any year. If the loan rate is considered to discourage exports and cause excessive stocks, the loan rate may be reduced by the Secretary up to an additional 5 percent in any year, but not below $4.50 per bushel.

The 1985 Act also gives the Secretary discretionary authority to offer a soybean marketing loan. If implemented, a marketing loan would allow soybean producers to repay their nonrecourse loans at the adjusted world market price, when world prices are below the loan rate. The Secretary chose not to implement a marketing loan for the 1986-89 crops of soybeans.

The Disaster Assistance Act of 1988 was passed in response to the 1988 drought. This legislation requires that the Secretary permit producers to plant soybeans on 10-25 percent of their 1989 permitted acreage of wheat, feed grains, cotton, and rice. However, the Secretary must limit plantings of soybeans and sunflowers so that market prices of soybeans do not fall below 115 percent of the basic loan rate in the previous year. The Secretary allowed 80 percent of the requested acreage to be planted in soybeans in 1989, up to a maximum of about 2.8 million acres. The provision may be extended to the 1990 crop if there is an insufficient supply of soybeans.

## Soybean Program Effects

Government commodity programs affect producers, consumers, and taxpayers. Other Government programs, including PL 480 and the conservation reserve program, indirectly affect soybean production and prices.

### Producers

Under the loan program, all producers have the option of placing soybeans under Government loan and receiving the loan support rate. These loans can be redeemed prior to maturity and the soybeans sold on the cash market. If producers do not redeem their loans, the soybeans become Government property. Nonredemption occurs more frequently in years when soybean cash prices are near or below the support rate. Nonredemption takes soybeans off the market and keeps cash prices from falling further below the support rate.

During the past 37 years, the soybean loan rate has exceeded the average market price only five times (app. table 3). The primary benefit of the soybean program for producers has been to allow them to obtain cash at harvest time through the loan program, while allowing them to retain control over the soybeans and market them throughout the year.

### Consumers

When surplus soybeans were placed under extended loan, consumers paid somewhat more for meat and edible vegetable oil products than they would have if no soybean price support program existed. These consumer costs were partially offset by the Government's reseal program during years when cash prices were low relative to the support rate, whereby producers could extend their loans. Loans usually could be extended until the cash price was above the support rate; the Government did not have to take heavy support loan deliveries. When prices rose and soybeans were redeemed, they added to existing supplies and probably lowered prices slightly, resulting in a savings to consumers. The net cost to consumers of the soybean program has been minor.

Even if prices of soybean products were 10 percent higher because of the price support loan program, the impact on consumer prices would be small. A 10-percent increase in the soybean meal price would increase production costs for feeding livestock and poultry by only a few percent. The effect on consumers would be less than that on meat and poultry producers. A large proportion—sometimes more than half—of the retail dollar spent on meat and poultry products is not affected by production costs but rather by processing, wholesaling, and retailing costs.

The consumer effects of a 10-percent increase in soybean oil prices on margarine, salad and cooking oils, and vegetable shortening would also be minor.

Although soybean oil is the major ingredient in these end products, the farmers' shares of these products were only about 39 percent, 34 percent, and 46 percent, respectively, in the mid-1970's (ERS no longer calculates farm-to-retail price spreads for these products).

### Taxpayers

The effects of the soybean program on CCC outlays have been minimal over the last three decades compared to most other program crops. Net price support and related expenditures by the Government for soybeans averaged about $4.1 million per year for fiscal years 1982-88 (table 13), so the cost per bushel was insignificantly small.

### Indirect Effects of Other Crop Programs

Nearly two-thirds of the farmers harvesting soybeans are cash grain farmers. Major cash grains grown in rotation with soybeans include corn, sorghum, and wheat. Although the direct effects of the soybean program are minimal, soybean producers are affected by other Government programs, especially those relating to cash grains. Price supports, paid land diversion, and set-asides for corn, cotton, sorghum, and wheat affect soybean acreage because those crops compete with soybeans for the same resources (Crowder).

Deficiency payments (difference between the target price and the loan rate multiplied by a farm's program yield) can be made to farmers participating in the wheat, rice, feed grain, and cotton programs under the 1985 Act. High target prices relative to loan rates for grain and cotton have made Government-supported returns for those crops higher than market returns to soybeans. What effect does this have on soybean acreage? The Government has provided a strong incentive for program participation by farmers growing grains and cotton. Hence, farmers plant fewer soybeans (Glauber, 1988b). Soybean producers do not face acreage reduction requirements like those farmers do, but the acreage controls affect soybeans because they cannot be planted on land idled by other crop programs.

The conservation reserve program is another important program set up under provisions of the 1985 Act. Farmers agree to take cropland out of production for 10 years in return for annual rental payments, and to place the land in conserving uses such as perennial grasses or trees. By the end of 1988, the reserve had removed approximately 28.1 million acres of highly erodible crop-

land from production, with an ultimate goal of 40-45 million acres by the end of 1990. This and other provisions that increase prices of competing commodities and remove available cropland from production will tend to reduce soybean acreage and maintain higher soybean prices.

PL 480 provides an additional outlet for soybean oil. A large share of U.S. soybean oil exports come under this program. Exports under PL 480 have increased in the 1980's because of sluggish markets and financial difficulties facing many importers. About 89 percent of U.S. soybean oil exports during FY 1988 were supported by PL 480, the export enhancement program, and the GSM-102 export credit guarantee program. The soybean producer benefits from the PL 480 and other export assistance programs to the extent that they can strengthen soybean oil prices or slow their decline during surplus periods and thus strengthen soybean prices.

## Current Issues

### Production Incentives for Soybeans

Severe drought cut U.S. soybean production in 1988, reducing output to 1,539 million bushels, 384 million bushels less than 1987 and the lowest since 1976 (app. table 11). U.S. soybean yields averaged only 26.8 bushels per acre in 1988, compared with over 32 bushels per acre in years prior and subsequent to the drought.

Soybean production in the Southern United States has declined dramatically in recent years because of falling returns from soybeans in relation to returns from

**Table 13—Farm-related program costs for U.S. soybeans, 1961-88** [1]

| Fiscal year | Loan operations | | Net price support and related expenditures [2] |
|---|---|---|---|
| | Outlays | Repayments | |
| | | *Million dollars* | |
| 1961 | 46.1 | 48.5 | -48.7 |
| 1962 | 263.3 | 105.3 | 164.3 |
| 1963 | 149.8 | 111.3 | -93.3 |
| 1964 | 154.7 | 111.1 | 31.1 |
| 1965 | 64.1 | 124.6 | -88.2 |
| 1966 | 193.1 | 189.6 | 3.8 [3] |
| 1967 | 372.6 | 220.9 | 151.6 |
| 1968 | 501.1 | 266.1 | 239.0 |
| 1969 | 850.2 | 358.5 | 512.7 |
| 1970 | 422.6 | 439.2 | -160.7 |
| 1971 | 321.2 | 415.9 | -606.5 |
| 1972 | 376.0 | 430.4 | -64.9 |
| 1973 | 202.1 | 222.8 | -20.7 |
| 1974 | 278.2 | 251.6 | 26.4 |
| 1975 | 78.1 | 99.9 | -21.9 |
| 1976 [4] | .7 | 9.1 | -8.4 |
| 1977 | 56.9 | 52.1 | 4.8 |
| 1978 | 340.2 | 309.0 | 31.1 |
| 1979 | 288.7 | 284.8 | 3.5 |
| 1980 | 549.1 | 485.1 | 116.0 |
| 1981 | 672.3 | 581.7 | 86.7 |
| 1982 | 1,105.9 | 935.9 | 169.2 |
| 1983 | 1,981.7 | 1,674.8 | 287.7 |
| 1984 | 505.3 | 944.9 | -585.0 |
| 1985 | 1,382.0 | 675.9 | 711.4 |
| 1986 | 2,576.3 | 1,009.0 | 1,597.4 |
| 1987 | 1,508.0 | 1,157.0 | -475.7 |
| 1988 | 1,282.8 | 1,644.1 | -1,676.0 |

[1] Excludes PL 480 commodity costs.
[2] Loans and purchases, storage and handling, and other outlays such as transportation, producers' storage payments, loan collateral settlements, export embargo contract expenses less sales proceeds, loan repayments, and other receipts.
[3] Includes $0.4 million commodity export payments.
[4] Includes July to Sept. 1976 to allow shift from July/June to Oct./Sept. fiscal year.
Source: U.S. Department of Agriculture, Agricultural Stabilization and Conservation Service data.

competing crops, such as cotton. Drought and disease have depressed soybean yields in the past decade. Cotton yields have risen sharply, further increasing incentives to grow cotton in place of soybeans.

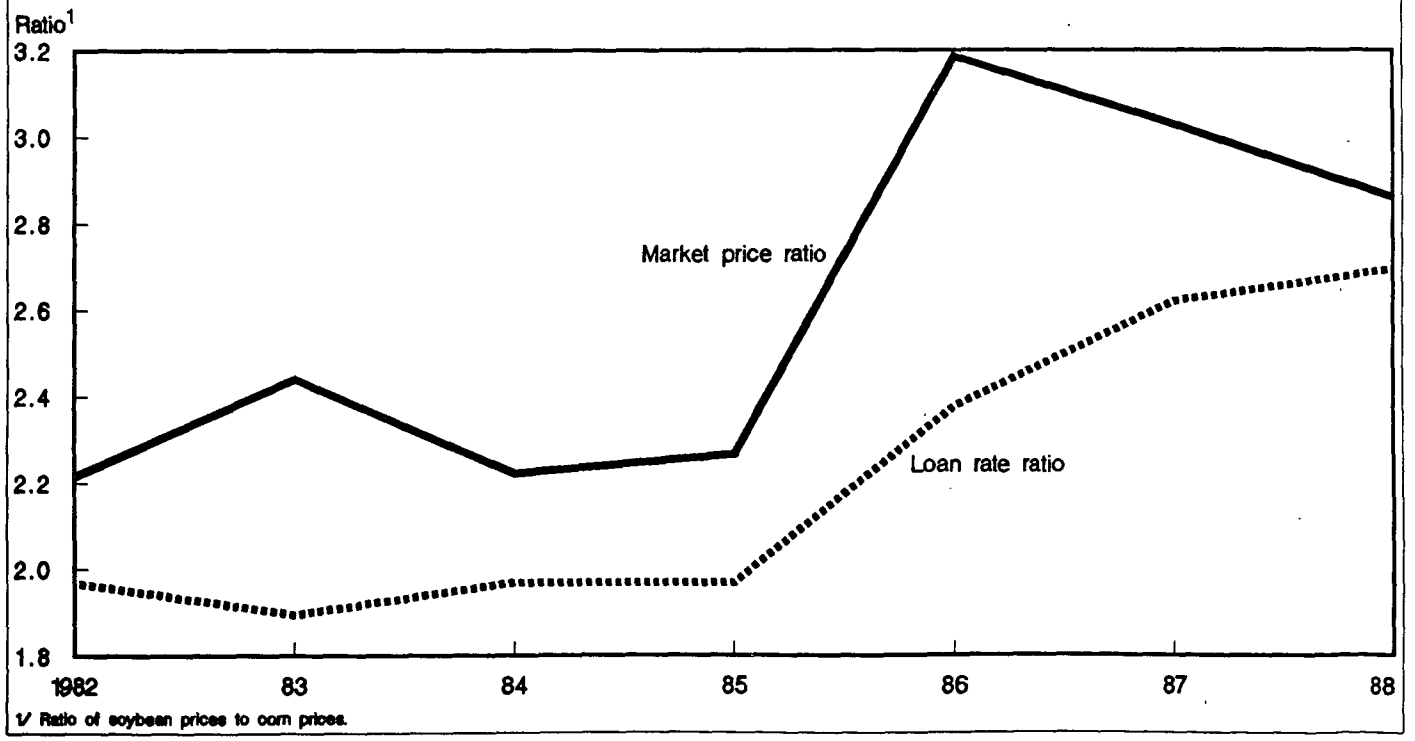
Market prices for corn have declined since 1985 relative to those for soybeans (fig. 3). A marked increase in the soybean-corn price ratio for both market prices and loan rates is evident since the passage of the 1985 Act (1986-89). Higher target prices for corn have encouraged corn production at the expense of soybeans and nonprogram crops. (Target prices for corn cannot be compared directly to soybean prices because program factors such as set-aside requirements and paid land diversion must be considered when comparing crop target prices and market prices. Rather, total returns would have to be compared with target prices for corn versus market prices for soybeans.) Two basic reasons for the change in the corn-soybean price ratio are: (1) price support loan levels for corn have been lowered proportionately more than announced price support levels for soybeans; and (2) massive corn surpluses, accessible through the exchange of CCC commodity certificates, have kept market prices for corn relatively lower than they would be otherwise (Glauber, 1988a).

Foreign producers have responded to this higher soybean-corn price ratio by increasing oilseeds plantings. However, U.S. income and price support programs for corn, wheat, and cotton have limited U.S. production responses to higher market prices for soybeans.

Crop acreage base is determined by a moving average of acreage planted in program commodities under current legislation. Therefore, soybeans cannot be planted on a farm's acreage base without sacrificing (1) part of the base for program crops and (2) deficiency payments for current and subsequent years. Deficiency payments for basic commodities make growing those crops on farm acreage base more profitable than growing soybeans despite higher market prices for soybeans (Glauber, 1988b).

The Disaster Assistance Act of 1988 requires the Secretary to allow producers of basic commodities with a crop acreage base to plant 10-25 percent of their permitted acreage to soybeans or sunflowers. However, additional soybean and sunflower acreage is not allowed to reduce the average market price of soybeans below 115 percent of the previous year's basic loan rate. That market price would be $5.49 per bushel (115 percent of $4.77 per bushel) in 1989/90. Producers requested authorization to plant over 3.5 million

Figure 3
**Soybean-corn price ratio**




1/ Ratio of soybean prices to corn prices.

acres of soybeans on crop acreage bases in the 10-25 signup. The Secretary announced that 80 percent of the soybeans requested by producers could be planted on permitted acreage of 1989 program crops, limiting the maximum acreage to about 2.8 million. Domestic soybean prices are not competitive with 1989/90 target prices for program crops, and soybeans actually planted on permitted acres are considerably less than the maximum authorized by the Secretary.

Program benefits in the 1990 crop year for grains will continue to limit the acreage diverted to soybeans. Upland cotton returns, for both program participants and nonparticipants, are likely to limit soybean plantings on cotton acreage to a small amount.

More double-cropping of wheat and soybeans occurred in the South in 1988/89 because of higher soybean prices and a smaller acreage reduction requirement for winter wheat acreage (Westcott). Some increase in double-cropping of wheat and soybeans is possible if the acreage reduction requirement is continued at a low level for 1989/90 winter wheat, which is expected given relatively low 1988/89 ending stocks of wheat following the drought. Three factors—higher prices for soybeans, the 10-25 provision of the 1988 Act, and lower loan rates and target prices for corn—increased incentives for U.S. farmers to produce soybeans in 1989. Only increased production incentives such as these will increase U.S. soybean production and exports.

**A Marketing Loan for Soybeans**

A marketing loan would allow producers to repay their price support loans at world prices when world prices are less than announced loan rates. Therefore, a marketing loan should reduce crop forfeitures and reduce CCC storage and handling costs. Theoretically, prices of U.S. commodities would be more competitive, incomes of domestic producers would be supported, and foreign producers would be discouraged from expanding their production.

The Secretary did not implement marketing loans for the 1986-89 crops of wheat, feed grains, and soybeans. In accordance with section 14 of the Farm Disaster Assistance Act of 1987, the Secretary submitted a report to the House Committee on Agriculture and the Senate Committee on Agriculture, Nutrition, and Forestry. The report explained why marketing loans were not implemented for wheat, feed grains, and soybean crops in 1987. According to that report, marketing loans for these crops would have only a moderate effect on domestic use and exports, and other less costly policies could lower domestic prices as effectively as marketing loans. It was determined that a marketing loan for soybeans could lower domestic prices if world prices were significantly below U.S. prices, but at a substantial cost (Hanthorn and Glauber). World soybean prices generally have been at or above U.S. market prices and loan rates.

Section 301 of the 1988 Act requires the Secretary to submit a statement to the House and Senate agriculture committees discussing the reasons for and against implementing a marketing loan for the 1989 and 1990 crops of soybeans. Due to relatively high expected prices in 1989/90, a marketing loan was not implemented for the 1989 soybean crop. If implemented, it would not change the relative profitabilities and, therefore, production and marketing of soybeans. A marketing loan could be considered as a mechanism to encourage U.S. production and exports of soybeans, if U.S. loan rates exceed adjusted world prices. U.S. loan rates are not likely to exceed world prices through the 1990/91 marketing year, the final year covered under 1985 farm legislation.

**International Issues Affecting Oilseeds**

Proposals for reducing trade-distorting agricultural policies are a focus of current GATT multilateral trade negotiations, which include 105 participating nations. If trade barriers and price supports are lowered through the negotiations, heavily subsidized oilseed producers could reduce output and import more oilseeds. The magnitude of these adjustments would depend on relative price changes among oilseeds and grains. Increased import demand could accommodate more exports from lower cost oilseed producers, such as Argentina, the United States, and Brazil. Soybean production and exports would likely increase for all three of these major soybean exporters. U.S. and Argentine sunflower producers could also increase production and exports in response to trade liberalization. Canada could increase rapeseed production and exports of rapeseed and rapeseed oil.

## Additional Readings

Bickerton, Thomas W. "U.S. Regains Share of Soviet Soybean Meal Market," *Oil Crops Situation and Outlook Report.* OCS-16. U.S. Dept. Agr., Econ. Res. Serv., Feb. 1988.

Crowder, Bradley M. "Regional Soybean Acreage Response," *Oil Crops Situation and Outlook Report.* OCS-19. U.S. Dept. Agr., Econ. Res. Serv., Nov. 1988.

Crowder, Bradley M., and Joseph W. Glauber. "Government Programs for Soybeans," *National Food Review*, Vol. 13, Issue 1. U.S. Dept. Agr., Econ. Res. Serv, Jan.-Mar. 1990.

Davison, Cecil W. "Billion-Dollar Markets Draw U.S. Agricultural Exports," *Foreign Agricultural Trade of the United States.* U.S. Dept. Agr., Econ. Res. Serv., Jan.-Feb. 1989.

Glauber, Joseph W. *Generic Certificates.* AER-594. U.S. Dept. Agr., Econ. Res. Serv., Aug. 1988(a).

_____. "Why Aren't More Corn Farmers Moving to Soybeans?" *Agricultural Outlook.* AO-142. U.S. Dept. Agr., Econ. Res. Serv., June 1988(b).

Hacklander, Duane, and Walter Gardiner. *Soybeans: Background for 1985 Farm Legislation.* AIB-472. U.S. Dept. Agr., Econ. Res. Serv., 1984.

Halcrow, Harold G. *Agricultural Policy Analysis.* New York: McGraw-Hill Books, 1984.

Hanthorn, Michael, and Joseph W. Glauber. *An Assessment of Marketing Loan Program Options.* AER-581. U.S. Dept. Agr., Econ. Res. Serv., Dec. 1987.

Knutson, Ronald D., J. B. Penn, and William T. Boehm. *Agricultural and Food Policy.* Englewood Cliffs, N.J.: Prentice-Hall, 1983.

Newman, Mark, Tom Fulton, and Lewrene Glaser. *A Comparison of Agriculture in the United States and the European Community.* Staff Report AGES870521. U.S. Dept. Agr., Econ. Res. Serv., June 1987.

Normile, Mary Ann. "The EC Oilseeds Sector: Recent Developments and Reform Proposals," *Western Europe Agriculture and Trade Report.* RS-88-1. U.S. Dept. Agr., Econ. Res. Serv., June 1988.

Schaub, James, W. C. McArthur, Duane Hacklander, Joseph Glauber, Mack Leath, and Harry Doty. *The U.S. Soybean Industry.* AER-588. U.S. Dept. Agr., Econ. Res. Serv., May 1988.

Stallings, David. "Trade-Weighted Value of the Dollar," *Agricultural Outlook.* AO-146. U.S. Dept. Agr., Econ. Res. Serv., Oct. 1988.

U.S. Department of Agriculture, Economic Research Service. *Estimates of Producer and Consumer Subsidy Equivalents, Government Intervention in Agriculture, 1982-86.* Staff Report AGES880127. Apr. 1988.

_____. *Global Review of Agricultural Policies.* Staff Report AGES880304. May 1988.

_____. *Government Intervention in Agriculture.* FAER-229. Apr. 1987.

_____. *History of Agricultural Price-Support and Adjustment Programs, 1933-84.* AIB-485. Dec. 1984.

_____. *Oil Crops Situation and Outlook Report.* Current issues.

_____. *Pacific Rim Agriculture and Trade Report.* Current issues.

_____. *Western Europe Agriculture and Trade Report.* Current issues.

U.S. Department of Agriculture, Foreign Agricultural Service. *Foreign Agriculture Circular: Oilseeds and Products.* Current issues.

U.S. International Trade Commission. *U.S. Global Competitiveness: Oilseeds and Oilseed Products.* USITC Pub. 2045. Dec. 1987.

Vertrees, James, and Andrew Morton. *Crop Price-Support Programs: Policy Options for Contemporary Agriculture.* U.S. Congress, Congressional Budget Office, Feb. 1984.

Westcott, Paul C. "Winter Wheat Plantings and Soybean Double Cropping," *Oil Crops Situation and Outlook Report.* OCS-20. U.S. Dept. Agr., Econ. Res. Serv., Jan. 1989.

**Appendix table 1—Distribution of soybean farms, by value of sales, 1987**

| Region | Value of sales | | | | | Total farms |
|---|---|---|---|---|---|---|
| | $100,000 or more | $40,000 to $99,999 | $20,000 to $39,999 | $10,000 to $19,999 | Less than $10,000 | |
| | *Percent* [1] | | | | | *Number* |
| Corn Belt | 25.3 | 25.6 | 17.5 | 14.3 | 17.2 | 239,334 |
| Northern Plains | 27.0 | 30.5 | 18.6 | 12.3 | 11.5 | 58,029 |
| Lake States | 26.5 | 26.8 | 17.2 | 13.6 | 15.9 | 54,474 |
| Appalachia | 21.3 | 19.0 | 15.5 | 15.4 | 28.9 | 37,580 |
| Delta | 38.8 | 20.5 | 11.0 | 9.3 | 20.4 | 20,357 |
| Southeast | 25.6 | 18.7 | 13.1 | 13.5 | 29.1 | 15,835 |
| Northeast | 31.6 | 17.7 | 12.3 | 13.4 | 25.0 | 10,737 |
| Southern Plains | 30.4 | 22.1 | 16.1 | 14.5 | 16.9 | 2,655 |
| United States | 26.2 | 25.1 | 16.8 | 13.8 | 18.1 | 439,093 [2] |

[1] Totals may not add to 100 percent due to rounding.

[2] Regional totals do not add to U.S. total because not all farms are reported in each state. All regions have fewer farms here than in table 1, Distribution of soybean farms, by acres of soybeans harvested, 1987, except the Northeast (because New York soybeans are included in this table but not in table 1).

Source: 1987 Census of Agriculture.

**Appendix table 2—Value comparisons for U.S. soybeans, 1950–88**

| Year beginning Sept. 1 | Loan value | | Market value | | Market value of U.S. production | |
|---|---|---|---|---|---|---|
| | Nominal [1] | Real [2] | Nominal [1] | Real [2] | Nominal | Real [2] |
| | *Dollars per acre* | | | | *Million dollars* | |
| 1950 | 44 | 184 | 53 | 222 | 738 | 3,088 |
| 1951 | 51 | 205 | 57 | 229 | 773 | 3,104 |
| 1952 | 53 | 209 | 56 | 220 | 811 | 3,193 |
| 1953 | 46 | 178 | 49 | 189 | 733 | 2,830 |
| 1954 | 44 | 167 | 49 | 186 | 841 | 3,198 |
| 1955 | 41 | 151 | 45 | 166 | 831 | 3,066 |
| 1956 | 47 | 168 | 47 | 168 | 980 | 3,500 |
| 1957 | 48 | 166 | 48 | 166 | 1,003 | 3,459 |
| 1958 | 51 | 172 | 48 | 162 | 1,160 | 3,906 |
| 1959 | 44 | 145 | 46 | 151 | 1,046 | 3,441 |
| 1960 | 43 | 139 | 50 | 162 | 1,185 | 3,835 |
| 1961 | 58 | 186 | 57 | 183 | 1,544 | 4,949 |
| 1962 | 55 | 172 | 57 | 179 | 1,564 | 4,903 |
| 1963 | 53 | 164 | 59 | 182 | 1,755 | 5,417 |
| 1964 | 51 | 155 | 60 | 182 | 1,836 | 5,581 |
| 1965 | 55 | 163 | 62 | 183 | 2,151 | 6,364 |
| 1966 | 64 | 183 | 70 | 200 | 2,554 | 7,297 |
| 1967 | 61 | 170 | 61 | 170 | 2,434 | 6,780 |
| 1968 | 67 | 178 | 65 | 172 | 2,689 | 7,133 |
| 1969 | 62 | 156 | 64 | 161 | 2,664 | 6,693 |
| 1970 | 60 | 143 | 76 | 181 | 3,215 | 7,655 |
| 1971 | 62 | 140 | 83 | 187 | 3,560 | 8,018 |
| 1972 | 63 | 135 | 122 | 262 | 5,550 | 11,936 |
| 1973 | 63 | 127 | 158 | 319 | 8,787 | 17,752 |
| 1974 | 53 | 98 | 157 | 290 | 8,070 | 14,944 |
| 1975 | — | — | 142 | 239 | 7,618 | 12,847 |
| 1976 | 65 | 103 | 178 | 282 | 8,775 | 13,906 |
| 1977 | 107 | 159 | 180 | 267 | 10,392 | 15,441 |
| 1978 | 132 | 183 | 196 | 271 | 12,446 | 17,238 |
| 1979 | 144 | 183 | 202 | 257 | 14,197 | 18,062 |
| 1980 | 133 | 155 | 201 | 235 | 13,607 | 15,877 |
| 1981 | 151 | 161 | 182 | 194 | 12,014 | 12,781 |
| 1982 | 158 | 158 | 178 | 178 | 12,375 | 12,375 |
| 1983 | 132 | 127 | 205 | 197 | 12,808 | 12,327 |
| 1984 | 141 | 131 | 164 | 152 | 10,868 | 10,091 |
| 1985 | 171 | 154 | 172 | 155 | 10,597 | 9,530 |
| 1986 | 152 | 133 | 159 | 139 | 9,274 | 8,128 |
| 1987 | 161 | 137 | 198 | 168 | 11,305 | 9,605 |
| 1988 [3] | 128 | 105 | 197 | 162 | 11,309 | 9,292 |

— = Not applicable. No price support loan was offered in 1975.

[1] Loan rate or average farm price times yield per harvested acre.

[2] GNP implicit price deflator (1982 = 1.0) was used.

[3] Preliminary.

Source: Hacklander and Gardiner (1984); and U.S. Department of Agriculture, Economic Research Service, Foreign Agricultural Service, *World Agricultural Supply and Demand Estimates*, Aug. 10, 1989.

**Appendix table 3—Prices and ending stocks for U.S. soybeans, 1952-89**

| Year beginning Sept. 1 | Ending stocks | | | Average price received by farmers | Loan rate |
|---|---|---|---|---|---|
| | CCC owned | Free | Total | | |
| | *Million bushels* | | | *Dollars per bushel* | |
| 1952 | 2 | 20 | 22 | 2.72 | 2.56 |
| 1953 | 0 | 8 | 8 | 2.72 | 2.56 |
| 1954 | 7 | 16 | 23 | 2.46 | 2.22 |
| 1955 | 0 | 21 | 21 | 2.22 | 2.04 |
| 1956 | 5 | 27 | 32 | 2.18 | 2.15 |
| 1957 | 14 | 29 | 43 | 2.07 | 2.09 |
| 1958 | 44 | 44 | 88 | 2.00 | 2.09 |
| 1959 | 10 | 42 | 52 | 1.96 | 1.85 |
| 1960 | 0 | 27 | 27 | 2.13 | 1.85 |
| 1961 | 43 | 35 | 78 | 2.28 | 2.30 |
| 1962 | 2 | 44 | 46 | 2.34 | 2.25 |
| 1963 | 3 | 64 | 67 | 2.51 | 2.25 |
| 1964 | 0 | 30 | 30 | 2.62 | 2.25 |
| 1965 | 0 | 36 | 36 | 2.54 | 2.25 |
| 1966 | 7 | 83 | 90 | 2.75 | 2.50 |
| 1967 | 29 | 137 | 166 | 2.49 | 2.50 |
| 1968 | 171 | 156 | 327 | 2.43 | 2.50 |
| 1969 | 150 | 80 | 230 | 2.35 | 2.25 |
| 1970 | 3 | 97 | 99 | 2.85 | 2.25 |
| 1971 | 0 | 72 | 72 | 3.03 | 2.25 |
| 1972 | 0 | 60 | 60 | 4.37 | 2.25 |
| 1973 | 0 | 171 | 171 | 5.68 | 2.25 |
| 1974 | 0 | 188 | 188 | 6.64 | 2.25 |
| 1975 | 0 | 245 | 245 | 4.92 | NA |
| 1976 | 0 | 103 | 103 | 6.81 | 2.50 |
| 1977 | 0 | 161 | 161 | 5.88 | 3.50 |
| 1978 | 0 | 176 | 176 | 6.66 | 4.50 |
| 1979 | 0 | 358 | 358 | 6.28 | 4.50 |
| 1980 | 0 | 313 | 313 | 7.57 | 5.02 |
| 1981 | 1 | 253 | 254 | 6.04 | 5.02 |
| 1982 | 21 | 324 | 345 | 5.69 | 5.02 |
| 1983 | 1 | 175 | 176 | 7.83 | 5.02 |
| 1984 | 4 | 312 | 316 | 5.84 | 5.02 |
| 1985 | 131 | 405 | 536 | 5.05 | 5.02 |
| 1986 | 249 | 187 | 436 | 4.78 | 4.77 [1] |
| 1987 | 7 | 295 | 302 | 5.88 | 4.77 |
| 1988 [2] | 0 | 155 | 155 | 7.35 | 4.77 |
| 1989 [3] | NA | NA | 285 | 4.75-6.00 | 4.53 |

NA = Not available. No price support loan was offered in 1975.

[1] Gramm-Rudman-Hollings Deficit Reduction Act reduced effective loan rate to $4.56 per bushel.

[2] Preliminary.

[3] Forecast.

Source: U.S. Department of Agriculture, National Agricultural Statistics Service, *Agricultural Statistics*, annual issues, 1952-88; and U.S. Department of Agriculture, Economic Research Service, Foreign Agricultural Service, *World Agricultural Supply and Demand Estimates*, Aug. 10, 1989.

**Appendix table 4—Major oilseeds: World supply and use, 1985–89**

| Item | 1985/86 | 1986/87 | 1987/88 | 1988/89 [1] | 1989/90 [2] |
|---|---|---|---|---|---|
| | | | *Million metric tons* | | |
| Production: | | | | | |
| Soybean | 97.03 | 98.01 | 103.35 | 94.08 | 107.92 |
| Cottonseed | 30.63 | 27.18 | 31.14 | 32.25 | 30.95 |
| Peanut | 19.99 | 20.39 | 20.34 | 22.77 | 22.88 |
| Sunflowerseed | 19.56 | 19.25 | 20.57 | 20.40 | 21.15 |
| Rapeseed | 18.70 | 19.55 | 23.23 | 22.43 | 21.86 |
| Flaxseed | 2.35 | 2.66 | 2.26 | 1.74 | 2.14 |
| Copra | 5.31 | 4.71 | 4.32 | 4.52 | 4.70 |
| Palm kernel | 2.51 | 2.50 | 2.69 | 2.92 | 3.08 |
| Total | 196.08 | 194.24 | 207.89 | 201.09 | 214.68 |
| Exports: | | | | | |
| Soybean | 26.07 | 28.56 | 30.05 | 22.92 | 25.80 |
| Cottonseed | .28 | .24 | .32 | .26 | .31 |
| Peanut | 1.37 | 1.28 | 1.31 | 1.29 | 1.33 |
| Sunflowerseed | 1.98 | 1.81 | 2.22 | 1.90 | 1.30 |
| Rapeseed | 3.63 | 4.58 | 4.53 | 4.44 | 4.20 |
| Flaxseed | .67 | .79 | .71 | .54 | .61 |
| Copra | .44 | .32 | .27 | .28 | .30 |
| Palm kernel | .12 | .12 | .12 | .12 | .12 |
| Total | 34.54 | 37.69 | 39.52 | 31.75 | 33.97 |
| Imports: | | | | | |
| Soybean | 27.55 | 29.23 | 29.01 | 23.76 | 25.50 |
| Cottonseed | .26 | .25 | .32 | .26 | .31 |
| Peanut | 1.26 | 1.27 | 1.24 | 1.24 | 1.25 |
| Sunflowerseed | 1.89 | 1.94 | 2.07 | 1.92 | 1.48 |
| Rapeseed | 3.65 | 4.92 | 4.39 | 4.41 | 4.19 |
| Flaxseed | .73 | .80 | .63 | .59 | .63 |
| Copra | .38 | .32 | .27 | .32 | .29 |
| Palm kernel | .11 | .12 | .10 | .10 | .09 |
| Total | 35.82 | 38.84 | 38.02 | 32.58 | 33.75 |
| Crush: | | | | | |
| Soybeans | 77.43 | 85.48 | 85.24 | 81.05 | 88.27 |
| Cottonseed | 23.92 | 21.24 | 23.82 | 24.82 | 24.12 |
| Peanut | 10.46 | 10.89 | 10.54 | 12.62 | 12.33 |
| Sunflowerseed | 16.71 | 16.44 | 17.63 | 17.92 | 18.70 |
| Rapeseed | 16.99 | 18.44 | 20.88 | 20.31 | 20.43 |
| Flaxseed | 1.79 | 1.87 | 1.77 | 1.56 | 1.61 |
| Copra | 5.31 | 4.65 | 4.28 | 4.43 | 4.58 |
| Palm kernel | 2.42 | 2.39 | 2.70 | 2.87 | 3.02 |
| Total | 155.04 | 161.38 | 166.84 | 165.57 | 173.06 |

Note: Trade and crush are aggregated using individual marketing years, except Argentina and Brazil, which are adjusted to an Oct.–Sept. year.

[1] Preliminary.

[2] Forecast.

Source: U.S. Department of Agriculture, Foreign Agricultural Service, *World Oilseed Situation and Market Highlights*, FOP 8–89, August 1989.

**Appendix table 5—World soybean production, consumption, exports, and ending stocks, 1964–89**

| Crop year [1] | Production | Consumption | Exports | Ending stocks | Stocks-to-use ratio |
|---|---|---|---|---|---|
| | *Million metric tons* | | | | *Percent* |
| 1964/65 | 29.24 | 30.28 | 6.55 | 1.62 | 5.4 |
| 1965/66 | 31.70 | 31.60 | 7.59 | 1.80 | 5.7 |
| 1966/67 | 36.47 | 35.06 | 8.12 | 3.33 | 9.5 |
| 1967/68 | 37.77 | 36.08 | 7.99 | 5.42 | 15.0 |
| 1968/69 | 41.70 | 38.10 | 8.68 | 9.72 | 25.5 |
| 1969/70 | 42.48 | 44.70 | 12.57 | 7.28 | 16.3 |
| 1970/71 | 44.28 | 48.03 | 12.58 | 3.60 | 7.5 |
| 1971/72 | 47.20 | 48.85 | 12.91 | 2.98 | 6.1 |
| 1972/73 | 49.20 | 48.71 | 15.44 | 2.92 | 6.0 |
| 1973/74 | 62.41 | 58.33 | 18.09 | 6.20 | 10.6 |
| 1974/75 | 54.66 | 54.76 | 15.58 | 6.89 | 12.6 |
| 1975/76 | 65.64 | 63.28 | 19.23 | 9.90 | 15.6 |
| 1976/77 | 59.48 | 64.17 | 19.14 | 5.78 | 9.0 |
| 1977/78 | 72.24 | 71.76 | 22.34 | 7.04 | 9.8 |
| 1978/79 | 77.53 | 78.30 | 24.66 | 7.49 | 9.6 |
| 1979/80 | 93.55 | 87.38 | 29.06 | 13.13 | 15.0 |
| 1980/81 | 81.03 | 84.30 | 24.54 | 11.54 | 13.7 |
| 1981/82 | 86.20 | 88.02 | 29.54 | 9.42 | 10.7 |
| 1982/83 | 93.57 | 90.64 | 28.55 | 12.23 | 13.5 |
| 1983/84 | 83.17 | 86.52 | 26.37 | 7.92 | 9.2 |
| 1984/85 | 93.14 | 89.34 | 24.91 | 12.32 | 13.8 |
| 1985/86 | 97.03 | 92.74 | 26.10 | 18.11 | 19.5 |
| 1986/87 | 98.01 | 101.61 | 28.50 | 15.40 | 15.2 |
| 1987/88 | 103.35 | 104.46 | 30.37 | 12.39 | 11.9 |
| 1988/89 [2] | 94.08 | 99.23 | 23.02 | 7.97 | 8.0 |
| 1989/90 [3] | 107.92 | 104.63 | 25.80 | 10.94 | 10.5 |

[1] Based on aggregate of differing local marketing years.
[2] Preliminary.
[3] Forecast.
Source: U.S. Department of Agriculture, Foreign Agricultural Service, Oilseeds and Products Division: production, supply, and distribution database, August 1989.

**Appendix table 6—World and U.S. soybean production, exports, ending stocks, and U.S. share, 1964–89**

| Crop year [1] | Production | | | Exports | | | Ending stocks | |
|---|---|---|---|---|---|---|---|---|
| | World | United States | U.S. share | World | United States | U.S. share | World | United States |
| | *Million bushels* | | *Percent* | *Million bushels* | | *Percent* | *Million bushels* | |
| 1964/65 | 1,074 | 701 | 65.2 | 241 | 212 | 88.2 | 60 | 30 |
| 1965/66 | 1,165 | 846 | 72.6 | 279 | 251 | 89.8 | 66 | 36 |
| 1966/67 | 1,340 | 928 | 69.3 | 299 | 262 | 87.6 | 122 | 90 |
| 1967/68 | 1,388 | 976 | 70.4 | 294 | 267 | 90.8 | 199 | 166 |
| 1968/69 | 1,532 | 1,107 | 72.2 | 319 | 287 | 90.0 | 357 | 327 |
| 1969/70 | 1,561 | 1,133 | 72.6 | 462 | 433 | 93.7 | 267 | 230 |
| 1970/71 | 1,627 | 1,127 | 69.3 | 462 | 434 | 93.9 | 132 | 99 |
| 1971/72 | 1,734 | 1,176 | 67.8 | 474 | 417 | 87.9 | 110 | 72 |
| 1972/73 | 1,808 | 1,271 | 70.3 | 567 | 479 | 84.5 | 107 | 60 |
| 1973/74 | 2,293 | 1,548 | 67.5 | 665 | 539 | 81.1 | 228 | 171 |
| 1974/75 | 2,008 | 1,216 | 60.6 | 572 | 421 | 73.5 | 253 | 188 |
| 1975/76 | 2,412 | 1,548 | 64.2 | 707 | 555 | 78.6 | 364 | 245 |
| 1976/77 | 2,185 | 1,289 | 59.0 | 703 | 564 | 80.2 | 212 | 103 |
| 1977/78 | 2,654 | 1,767 | 66.6 | 821 | 700 | 85.3 | 259 | 161 |
| 1978/79 | 2,849 | 1,869 | 65.6 | 906 | 739 | 81.6 | 275 | 176 |
| 1979/80 | 3,437 | 2,261 | 65.8 | 1,068 | 875 | 82.0 | 482 | 358 |
| 1980/81 | 2,977 | 1,798 | 60.4 | 902 | 724 | 80.3 | 424 | 313 |
| 1981/82 | 3,167 | 1,989 | 62.8 | 1,085 | 929 | 85.6 | 346 | 254 |
| 1982/83 | 3,438 | 2,190 | 63.7 | 1,049 | 905 | 86.3 | 449 | 345 |
| 1983/84 | 3,056 | 1,636 | 53.5 | 969 | 743 | 76.7 | 291 | 176 |
| 1984/85 | 3,422 | 1,861 | 54.4 | 915 | 598 | 65.3 | 453 | 316 |
| 1985/86 | 3,565 | 2,099 | 58.9 | 959 | 741 | 77.2 | 666 | 536 |
| 1986/87 | 3,601 | 1,940 | 53.9 | 1,047 | 757 | 72.3 | 566 | 436 |
| 1987/88 | 3,797 | 1,923 | 50.6 | 1,116 | 802 | 71.9 | 455 | 302 |
| 1988/89 [2] | 3,457 | 1,539 | 44.5 | 846 | 530 | 62.7 | 293 | 155 |
| 1989/90 [3] | 3,965 | 1,905 | 48.0 | 948 | 575 | 60.6 | 402 | 285 |

[1] Based on aggregate of differing local marketing years.
[2] Preliminary.
[3] Forecast.

Source: Converted to bushels from data in U.S. Department of Agriculture, Foreign Agricultural Service, Oilseeds and Products Division: production, supply, and distribution database, August 1989.

**Appendix table 7—Soybean production and exports, by foreign exporters, 1964–89**

| Crop year [1] | Brazil | | Argentina | | Total foreign | |
|---|---|---|---|---|---|---|
| | Production | Exports | Production | Exports | Production | Exports |
| | *Million bushels* | | | | | |
| 1964/65 | 19 | 3 | 1 | 0 | 373 | 28 |
| 1965/66 | 22 | 4 | 1 | 0 | 319 | 28 |
| 1966/67 | 26 | 11 | 1 | 0 | 412 | 37 |
| 1967/68 | 24 | 2 | 1 | 0 | 412 | 27 |
| 1968/69 | 39 | 11 | 1 | 0 | 425 | 32 |
| 1969/70 | 55 | 11 | 1 | 0 | 428 | 29 |
| 1970/71 | 76 | 8 | 2 | 0 | 500 | 28 |
| 1971/72 | 135 | 38 | 3 | 0 | 558 | 57 |
| 1972/73 | 184 | 66 | 10 | 0 | 537 | 88 |
| 1973/74 | 289 | 105 | 18 | 0 | 746 | 125 |
| 1974/75 | 363 | 129 | 18 | 0 | 792 | 152 |
| 1975/76 | 413 | 122 | 26 | 4 | 863 | 151 |
| 1976/77 | 460 | 95 | 51 | 23 | 897 | 139 |
| 1977/78 | 351 | 24 | 99 | 72 | 887 | 120 |
| 1978/79 | 376 | 23 | 136 | 102 | 980 | 167 |
| 1979/80 | 557 | 56 | 132 | 100 | 1,177 | 193 |
| 1980/81 | 558 | 55 | 129 | 80 | 1,180 | 177 |
| 1981/82 | 472 | 29 | 152 | 79 | 1,178 | 156 |
| 1982/83 | 542 | 48 | 154 | 49 | 1,248 | 144 |
| 1983/84 | 571 | 58 | 257 | 115 | 1,420 | 226 |
| 1984/85 | 672 | 127 | 248 | 109 | 1,561 | 317 |
| 1985/86 | 518 | 44 | 268 | 94 | 1,467 | 218 |
| 1986/87 | 636 | 121 | 257 | 47 | 1,661 | 290 |
| 1987/88 | 662 | 111 | 356 | 77 | 1,875 | 314 |
| 1988/89 [2] | 823 | 169 | 243 | 18 | 1,918 | 316 |
| 1989/90 [3] | 772 | 165 | 386 | 92 | 2,060 | 373 |

[1] Based on aggregate of differing local marketing years.
[2] Preliminary.
[3] Forecast.

Source: Converted to bushels from data in U.S. Department of Agriculture, Foreign Agricultural Service, Oilseeds and Products Division: production, supply, and distribution database, August 1989.

**Appendix table 8—World soybean trade, annual averages, 1978–82 and 1983–87** [1]

| Importers | Exporters | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | United States | | Brazil | | Argentina | | China | | Other | | Total | |
| | 1978–82 | 1983–87 | 1978–82 | 1983–87 | 1978–82 | 1983–87 | 1978–82 | 1983–87 | 1978–82 | 1983–87 | 1978–82 | 1983–87 |
| EC–12 (1,000 metric tons) | 11,916 | 9,600 | 601 | 1,744 | 1,368 | 1,468 | 0 | 1 | 739 | 802 | 14,624 | 13,615 |
| % of importer's imports | 81 | 71 | 4 | 13 | 9 | 11 | 0 | 0 | 5 | 6 | 100 | 100 |
| % of exporter's exports | 55 | 46 | 61 | 83 | 60 | 68 | 0 | — | 61 | 71 | 55 | 50 |
| Japan (1,000 metric tons) | 4,085 | 4,321 | 8 | 136 | 10 | 6 | 135 | 300 | 29 | 44 | 4,267 | 4,804 |
| % of importer's imports | 96 | 90 | — | 3 | — | — | 3 | 6 | 1 | 1 | 100 | 100 |
| % of exporter's exports | 19 | 21 | 1 | 7 | — | — | 82 | 29 | 2 | 4 | 16 | 18 |
| Taiwan (1,000 metric tons) | 1,054 | 1,551 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 1,055 | 1,585 |
| % of importer's imports | 100 | 98 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 100 | 100 |
| % of exporter's exports | 5 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 6 |
| USSR (1,000 metric tons) | 708 | 573 | 204 | 26 | 410 | 272 | 0 | 389 | 10 | 15 | 1,332 | 1,273 |
| % of importer's imports | 53 | 45 | 15 | 2 | 31 | 21 | 0 | 31 | 1 | 1 | 100 | 100 |
| % of exporter's exports | 3 | 3 | 21 | 1 | 18 | 13 | 0 | 38 | 1 | 1 | 5 | 5 |
| Mexico (1,000 metric tons) | 660 | 1,291 | 114 | 67 | 128 | 103 | 0 | 0 | 1 | 3 | 903 | 1,465 |
| % of importer's imports | 73 | 88 | 13 | 5 | 14 | 7 | 0 | 0 | — | — | 100 | 100 |
| % of exporter's exports | 3 | 6 | 12 | 3 | 6 | 5 | 0 | 0 | — | — | 3 | 5 |
| South Korea (1,000 metric tons) | 453 | 840 | 0 | 24 | 0 | 0 | 0 | 2 | 4 | 4 | 457 | 870 |
| % of importer's imports | 99 | 97 | 0 | 3 | 0 | 0 | 0 | — | 1 | — | 100 | 100 |
| % of exporter's exports | 2 | 4 | 0 | 1 | 0 | 0 | 0 | — | — | — | 2 | 3 |
| Other (1,000 metric tons) | 2,859 | 2,615 | 54 | 95 | 367 | 320 | 30 | 326 | 430 | 225 | 3,740 | 3,581 |
| % of importer's imports | 76 | 73 | 1 | 3 | 10 | 9 | 1 | 9 | 11 | 6 | 100 | 100 |
| % of exporter's exports | 13 | 13 | 6 | 5 | 16 | 15 | 18 | 32 | 35 | 20 | 14 | 13 |
| Total (1,000 metric tons) | 21,736 | 20,792 | 981 | 2,091 | 2,284 | 2,169 | 164 | 1,017 | 1,213 | 1,126 | 26,378 | 27,196 |
| % of importer's imports | 82 | 76 | 4 | 8 | 9 | 8 | 1 | 4 | 5 | 4 | 100 | 100 |
| % of exporter's exports | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

— = Less than 0.5 percent.

[1] For example, the EC–12's 1978–82 average annual imports of 11.9 million tons of soybeans from the United States (column 1, row 1) represented 81 percent of the EC–12's total soybean imports (column 1, row 2) and 55 percent of total U.S. soybean exports (column 1, row 3). Percentages may not add because of rounding.

Source: United Nations. Commodity Trade Statistics, 1962–87. Calendar year commodity import data reported to the United Nations, edited and expanded by Arthur B. Mackie, Agriculture and Trade Analysis Division, Economic Research Service, U.S. Department of Agriculture, to include nonreporting countries.

**Appendix table 9—Major protein meals: World supply and use, 1985–89**

| Item | 1985/86 | 1986/87 | 1987/88 | 1988/89 [1] | 1989/90 [2] |
|---|---|---|---|---|---|
| | | | *Million metric tons* | | |
| Production: | | | | | |
| Soybean | 61.06 | 67.22 | 67.61 | 63.92 | 69.89 |
| Cottonseed | 11.10 | 9.85 | 11.23 | 11.60 | 11.25 |
| Rapeseed | 10.26 | 11.13 | 12.62 | 12.37 | 12.36 |
| Sunflowerseed | 7.66 | 7.54 | 8.02 | 8.21 | 8.48 |
| Fish | 6.33 | 6.04 | 6.43 | 6.56 | 6.57 |
| Peanut | 4.23 | 4.41 | 4.28 | 5.15 | 5.01 |
| Copra | 1.89 | 1.72 | 1.53 | 1.58 | 1.64 |
| Linseed | 1.14 | 1.19 | 1.13 | 1.04 | 1.03 |
| Palm kernel | 1.31 | 1.28 | 1.43 | 1.52 | 1.61 |
| Total | 104.96 | 110.38 | 114.28 | 111.95 | 117.82 |
| Exports: | | | | | |
| Soybean | 23.13 | 25.96 | 25.21 | 25.61 | 27.55 |
| Cottonseed | .94 | .83 | .98 | 1.01 | 1.00 |
| Rapeseed | 1.82 | 1.69 | 1.92 | 1.80 | 1.90 |
| Sunflowerseed | 1.91 | 1.50 | 1.59 | 1.67 | 1.77 |
| Fish | 3.16 | 3.20 | 3.17 | 3.34 | 3.19 |
| Peanut | .53 | .69 | .71 | .74 | .76 |
| Copra | 1.34 | 1.25 | 1.05 | .98 | 1.09 |
| Linseed | .52 | .60 | .56 | .48 | .49 |
| Palm kernel | 1.06 | .98 | 1.07 | 1.16 | 1.23 |
| Total | 34.39 | 36.68 | 36.26 | 36.78 | 38.99 |
| Imports: | | | | | |
| Soybean | 23.92 | 26.63 | 25.69 | 25.97 | 27.69 |
| Cottonseed | .94 | .82 | .97 | .98 | .96 |
| Rapeseed | 1.73 | 2.23 | 1.98 | 2.06 | 1.99 |
| Sunflowerseed | 1.89 | 1.65 | 1.72 | 1.60 | 1.73 |
| Fish | 3.24 | 3.19 | 3.26 | 3.30 | 3.31 |
| Peanut | .52 | .71 | .75 | .78 | .79 |
| Copra | 1.36 | 1.25 | 1.10 | 1.09 | 1.10 |
| Linseed | .60 | .66 | .67 | .56 | .60 |
| Palm kernel | 1.02 | 1.02 | 1.22 | 1.11 | 1.16 |
| Total | 35.22 | 38.16 | 37.36 | 37.44 | 39.32 |
| Consumption: | | | | | |
| Soybean | 61.76 | 67.67 | 67.66 | 64.96 | 70.01 |
| Cottonseed | 11.09 | 10.01 | 11.20 | 11.59 | 11.21 |
| Rapeseed | 10.11 | 11.58 | 12.57 | 12.77 | 12.43 |
| Sunflowerseed | 7.67 | 7.66 | 8.18 | 8.17 | 8.42 |
| Fish | 6.30 | 6.26 | 6.28 | 6.50 | 6.75 |
| Peanut | 4.24 | 4.37 | 4.37 | 5.20 | 5.03 |
| Copra | 1.95 | 1.78 | 1.58 | 1.64 | 1.64 |
| Linseed | 1.21 | 1.26 | 1.25 | 1.12 | 1.13 |
| Palm kernel | 1.27 | 1.27 | 1.55 | 1.43 | 1.51 |
| Total | 105.61 | 111.88 | 114.63 | 113.37 | 118.13 |

Note: Trade and crush are aggregated using individual marketing years, except Argentina and Brazil, which are adjusted to an Oct.–Sept. year.

[1] Preliminary.

[2] Forecast.

Source: U.S. Department of Agriculture, Foreign Agricultural Service, *World Oilseed Situation and Market Highlights*, FOP 8–89, August 1989.

**Appendix table 10—Major vegetable and marine oils: World supply and use, 1985–89**

| Item | 1985/86 | 1986/87 | 1987/88 | 1988/89 [1] | 1989/90 [2] |
|---|---|---|---|---|---|
| | | | *Million metric tons* | | |
| Production: | | | | | |
| Soybean | 13.85 | 15.19 | 15.27 | 14.50 | 15.83 |
| Palm | 8.06 | 7.98 | 8.39 | 9.20 | 9.87 |
| Sunflowerseed | 6.65 | 6.57 | 7.13 | 7.20 | 7.52 |
| Rapeseed | 6.23 | 6.86 | 7.69 | 7.55 | 7.54 |
| Cottonseed | 3.47 | 3.06 | 3.47 | 3.60 | 3.49 |
| Peanut | 2.96 | 3.10 | 3.00 | 3.61 | 3.51 |
| Coconut | 3.30 | 2.93 | 2.65 | 2.74 | 2.84 |
| Olive | 1.63 | 1.56 | 1.90 | 1.43 | 1.77 |
| Fish | 1.52 | 1.34 | 1.40 | 1.52 | 1.46 |
| Palm kernel | 1.09 | 1.07 | 1.21 | 1.29 | 1.35 |
| Linseed | .60 | .64 | .62 | .54 | .56 |
| Total | 49.34 | 50.28 | 52.72 | 53.17 | 55.75 |
| Exports: | | | | | |
| Soybean | 3.15 | 3.90 | 3.77 | 3.53 | 3.91 |
| Palm | 5.36 | 5.20 | 5.49 | 5.86 | 6.28 |
| Sunflowerseed | 2.19 | 1.79 | 2.18 | 2.05 | 2.04 |
| Rapeseed | 1.31 | 1.66 | 1.85 | 1.77 | 1.61 |
| Cottonseed | .35 | .24 | .39 | .35 | .31 |
| Peanut | .33 | .36 | .32 | .27 | .29 |
| Coconut | 1.61 | 1.49 | 1.39 | 1.18 | 1.38 |
| Olive | .37 | .55 | .46 | .45 | .49 |
| Fish | .85 | .75 | .74 | .94 | .82 |
| Palm kernel | .67 | .69 | .75 | .80 | .80 |
| Linseed | .23 | .29 | .24 | .20 | .22 |
| Total | 16.42 | 16.89 | 17.57 | 17.38 | 18.16 |
| Imports: | | | | | |
| Soybean | 3.09 | 3.80 | 3.77 | 3.50 | 3.78 |
| Palm | 5.42 | 5.07 | 5.67 | 5.80 | 6.40 |
| Sunflowerseed | 2.00 | 1.79 | 2.03 | 1.96 | 1.98 |
| Rapeseed | 1.20 | 1.41 | 1.50 | 1.50 | 1.30 |
| Cottonseed | .31 | .27 | .38 | .36 | .34 |
| Peanut | .30 | .33 | .37 | .33 | .32 |
| Coconut | 1.52 | 1.36 | 1.38 | 1.27 | 1.43 |
| Olive | .55 | .71 | .51 | .56 | .49 |
| Fish | .82 | .79 | .74 | .83 | .81 |
| Palm kernel | .66 | .67 | .79 | .77 | .82 |
| Linseed | .20 | .26 | .20 | .21 | .21 |
| Total | 16.07 | 16.45 | 17.31 | 17.08 | 17.86 |
| Consumption: | | | | | |
| Soybean | 13.50 | 14.76 | 15.03 | 14.67 | 15.55 |
| Palm | 7.69 | 7.91 | 8.52 | 8.78 | 9.79 |
| Sunflowerseed | 6.37 | 6.49 | 6.99 | 7.19 | 7.44 |
| Rapeseed | 5.98 | 6.55 | 7.17 | 7.41 | 7.19 |
| Cottonseed | 3.44 | 3.16 | 3.44 | 3.62 | 3.53 |
| Peanut | 2.89 | 3.08 | 3.06 | 3.68 | 3.53 |
| Coconut | 3.04 | 2.83 | 2.65 | 2.84 | 2.91 |
| Olive | 1.77 | 1.89 | 1.79 | 1.76 | 1.80 |
| Fish | 1.42 | 1.40 | 1.39 | 1.49 | 1.51 |
| Palm kernel | 1.05 | 1.02 | 1.25 | 1.26 | 1.35 |
| Linseed | .56 | .60 | .58 | .54 | .56 |
| Total | 47.69 | 49.68 | 51.88 | 53.24 | 55.16 |

Note: Trade and crush are aggregated using individual marketing years, except Argentina and Brazil, which are adjusted to an Oct.–Sept. year.

[1] Preliminary.

[2] Forecast.

Source: U.S. Department of Agriculture, Foreign Agricultural Service, *World Oilseed Situation and Market Highlights*, FOP 8–89, August 1989.

**Appendix table 11—U.S. soybean acreage, yield, and production, 1950–89**

| Year | Planted | Harvested | Yield | Production |
|---|---|---|---|---|
| | *Million acres* | | *Bushels/acre* | *Million bushels* |
| 1950 | 15.6 | 13.8 | 21.7 | 299.2 |
| 1951 | 15.7 | 13.6 | 20.8 | 283.8 |
| 1952 | 16.4 | 14.4 | 20.7 | 298.8 |
| 1953 | 16.7 | 14.8 | 18.2 | 269.2 |
| 1954 | 18.9 | 17.0 | 20.0 | 341.1 |
| 1955 | 20.0 | 18.6 | 20.1 | 373.7 |
| 1956 | 22.0 | 20.6 | 21.8 | 449.3 |
| 1957 | 22.2 | 20.9 | 23.2 | 483.4 |
| 1958 | 25.3 | 24.0 | 24.2 | 580.3 |
| 1959 | 23.6 | 22.6 | 23.5 | 532.9 |
| 1960 | 24.6 | 23.7 | 23.5 | 555.1 |
| 1961 | 28.0 | 27.0 | 25.1 | 678.6 |
| 1962 | 28.6 | 27.6 | 24.2 | 669.2 |
| 1963 | 29.6 | 28.6 | 24.4 | 699.2 |
| 1964 | 31.7 | 30.8 | 22.8 | 700.9 |
| 1965 | 35.2 | 34.4 | 24.5 | 845.6 |
| 1966 | 37.3 | 36.5 | 25.4 | 928.5 |
| 1967 | 40.8 | 39.8 | 24.5 | 976.4 |
| 1968 | 42.3 | 41.4 | 26.7 | 1,107.0 |
| 1969 | 42.5 | 41.3 | 27.4 | 1,133.1 |
| 1970 | 43.1 | 42.2 | 26.7 | 1,127.1 |
| 1971 | 43.5 | 42.7 | 27.5 | 1,176.1 |
| 1972 | 46.9 | 45.7 | 27.8 | 1,270.6 |
| 1973 | 56.5 | 55.7 | 27.8 | 1,547.5 |
| 1974 | 52.5 | 51.3 | 23.7 | 1,216.3 |
| 1975 | 54.6 | 53.6 | 28.9 | 1,548.3 |
| 1976 | 50.3 | 49.4 | 26.1 | 1,288.6 |
| 1977 | 59.0 | 57.8 | 30.6 | 1,767.3 |
| 1978 | 64.7 | 63.7 | 29.4 | 1,868.8 |
| 1979 | 71.4 | 70.3 | 32.1 | 2,260.7 |
| 1980 | 69.9 | 67.8 | 26.5 | 1,797.5 |
| 1981 | 67.5 | 66.2 | 30.1 | 1,989.1 |
| 1982 | 70.9 | 69.4 | 31.5 | 2,190.3 |
| 1983 | 63.8 | 62.5 | 26.2 | 1,635.8 |
| 1984 | 67.8 | 66.1 | 28.1 | 1,860.9 |
| 1985 | 63.1 | 61.6 | 34.1 | 2,098.5 |
| 1986 | 60.4 | 58.3 | 33.3 | 1,940.1 |
| 1987 | 58.0 | 57.0 | 33.7 | 1,922.8 |
| 1988 [1] | 58.9 | 57.4 | 26.8 | 1,538.7 |
| 1989 [2] | 60.5 | 59.1 | 32.3 | 1,905.0 |

[1] Preliminary.
[2] Forecast.
Source: U.S. Department of Agriculture, National Agricultural Statistics Service, *Crop Production*, annual and monthly issues.

**Appendix table 12—Ratios of world soybean exports and ending stocks to world consumption, and U.S. exports to foreign consumption, 1964–89**

| Crop year [1] | World exports to world consumption | World stocks to world consumption | U.S. exports to foreign consumption |
|---|---|---|---|
| | | *Percent* | |
| 1964/65 | 21.6 | 5.4 | 36.2 |
| 1965/66 | 24.0 | 5.7 | 43.8 |
| 1966/67 | 23.2 | 9.5 | 38.7 |
| 1967/68 | 22.2 | 15.0 | 38.5 |
| 1968/69 | 22.8 | 25.5 | 38.7 |
| 1969/70 | 28.1 | 16.3 | 51.2 |
| 1970/71 | 26.2 | 7.5 | 46.1 |
| 1971/72 | 26.4 | 6.1 | 41.3 |
| 1972/73 | 31.7 | 6.0 | 48.6 |
| 1973/74 | 31.0 | 10.6 | 43.3 |
| 1974/75 | 28.5 | 12.6 | 34.1 |
| 1975/76 | 30.4 | 15.6 | 40.0 |
| 1976/77 | 29.8 | 9.0 | 37.8 |
| 1977/78 | 31.1 | 9.8 | 43.0 |
| 1978/79 | 31.5 | 9.6 | 42.0 |
| 1979/80 | 33.3 | 15.0 | 43.6 |
| 1980/81 | 29.1 | 13.7 | 36.6 |
| 1981/82 | 33.6 | 10.7 | 43.9 |
| 1982/83 | 31.5 | 13.5 | 42.4 |
| 1983/84 | 30.5 | 9.2 | 35.1 |
| 1984/85 | 27.9 | 13.8 | 27.7 |
| 1985/86 | 28.1 | 19.5 | 32.6 |
| 1986/87 | 28.0 | 15.2 | 30.9 |
| 1987/88 | 29.1 | 11.9 | 31.0 |
| 1988/89 [2] | 23.2 | 8.0 | 21.3 |
| 1989/90 [3] | 24.7 | 10.5 | 21.7 |

[1] Based on aggregate of differing local marketing years.
[2] Preliminary.
[3] Forecast.
Source: Calculated from data in U.S. Department of Agriculture, Foreign Agricultural Service, Oilseeds and Products Division: production, supply, and distribution database, August 1989.

**Appendix table 13—Coefficients of variation for U.S. soybeans [1]**

| Period | Planted acres | Yield | Production | Exports | Price received | Value of production |
|---|---|---|---|---|---|---|
| 1954–58 | 0.1023 | 0.0761 | 0.1896 | 0.2041 | 0.0721 | 0.1256 |
| 1959–63 | .0869 | .0249 | .1097 | .1355 | .0834 | .1847 |
| 1964–68 | .1015 | .0515 | .1483 | .0970 | .0433 | .1307 |
| 1969–73 | .1128 | .0147 | .1255 | .0964 | .3317 | .4708 |
| 1974–78 | .0913 | .0902 | .1665 | .1908 | .1148 | .1843 |
| 1979–83 | .0441 | .0925 | .1297 | .1026 | .1419 | .0566 |
| 1984–88 | .1305 | .2267 | .2199 | .3016 | .3839 | .1756 |

[1] Coefficient of variation is a measure of variability which equals the standard deviation divided by the mean.

# Part 2: Peanuts

## By James D. Schaub and Bruce Wendland

### Abstract

The peanut program has led to surplus production and increasing Government costs throughout most of its history. These problems led to farm legislation in 1977 that initiated a two-price poundage quota peanut program, which was continued under the 1981 and 1985 farm acts. The 1981 Act suspended the peanut acreage allotments and decreased the poundage quota each year to eliminate excess peanuts supported at the higher of the two support prices. The Food Security Act of 1985 continued many provisions of the Agriculture and Food Act of 1981 but established guidelines for setting the poundage quota to match use. The peanut program will revert to permanent legislation of acreage allotments and parity supports unless a new program is enacted. An important issue for the upcoming farm legislation is whether to continue the current program or to include peanuts under a more general agricultural program.

## Summary

Peanuts are an important oil crop worldwide. Most peanuts produced in other countries are crushed for oil and protein meal. The United States is the main country producing peanuts used in such edible products as peanut butter, roasted peanuts, and peanut candies. U.S. peanut production has long been influenced by agricultural legislation.

Unlike the voluntary programs for wheat, feed grains, rice, and cotton, the peanut program is mandatory. A mandatory program becomes binding on all producers if at least two-thirds of the producers voting in a referendum appprove it.

The 1977 and 1981 peanut programs were designed to reduce Government costs, bring domestic supply of quota-supported peanuts more in line with demand, and recognize the possibility of expanding exports. These programs helped move producers toward increased market orientation and, at the same time, eased the transition for the peanut allotment holders and the communities that had become dependent on the old program. A reliable source of high-quality edible peanuts for domestic use and export was maintained. Consumers did not have access to the lower priced additional peanuts produced in excess of the quota level, and imports were restricted.

The current peanut program is a two-price poundage quota system authorized by the Food Security Act of 1985. The 1985 peanut program maintains the same goals as the 1977 and 1981 programs but ties the quota size more closely to domestic demand.

As in the Agriculture and Food Act of 1981, acreage allotments for peanuts were suspended in the 1985 Act; hence, peanut production is technically unrestricted. But additional peanuts are subject to marketing controls and receive a lower support price. Additional peanuts must be contracted for export by August 1 or placed under the loan for additionals; the price support for these peanuts is based on the crush value for peanuts, that is, oil and meal prices. The additional price support has remained at $149.75 per ton since 1986. The quota support price was $607.47 per ton in 1986 and increased to $615.87 in 1989.

Quota support prices are to be adjusted on the basis of cost of production, but increases cannot exceed 6 percent per year. Growers are permited to lease or purchase quota from quota holders as long as the quota remains within county boundaries.

## Introduction

Peanuts are one of the world's principal oilseeds, ranking fourth behind soybeans, cottonseed, and rapeseed, with 10 percent of the total production of major oilseeds in 1985-87. Peanut byproducts make sizable contributions to global supplies of edible oil for human consumption and protein meal for livestock feeds. Principal countries producing peanuts are India, China, and the United States. Africa is also an important producing region. Most of the peanuts produced in Asia and Africa are crushed for food oil and animal feed.

Peanuts accounted for 3 percent of the production of major oilseeds in the United States in 1986-88 and ranked 12th in crop value. Soybeans are the dominant oilseed in the United States, with 86 percent of production, followed by cottonseed with 8 percent and sunflowerseed with 2 percent. U.S. peanuts derive most of their value from use of the seed as an edible nut, both in-shell and shelled, and in edible products, such as peanut butter and peanut butter sandwiches and cookies. Peanuts are also crushed to produce oil and meal, but the edible market commands a higher price than the crush market. U.S. peanuts that are rejected from edible channels because of quality factors are crushed. If there is an over-supply of a certain peanut type, those peanuts may be crushed. Peanut oil and peanut meal face strong competition from products derived from soybeans, cottonseed, and sunflowerseed.

Before 1977, U.S. growers produced considerably more peanuts than the domestic edible market could absorb at the support price. The peanut program costs to the Government were increasing. The 1977 and 1981 peanut programs were designed to reduce Government costs and to bring domestic supply and demand levels for peanuts used in edible products into balance. They were also designed to ease the transition for the peanut producers and their communities as the traditional program—largely unchanged since the 1930's—was replaced by shrinking poundage quotas for peanuts used in edible products. The 1985 program continued most of the provisions of the 1981 Act and sought to better match supply and demand.

The current program provisions expire after the 1990 crop. Without specific legislative action, the former

allotment and marketing quota provisions would again be applicable.

## Structure of the Peanut Industry

The United States produced nearly 4 billion pounds of peanuts with a farm level value over $1 billion in 1988. There are relatively few farms harvesting peanuts compared with farms harvesting corn, wheat, and soybeans. Production is concentrated in nine States that planted 1.66 million acres in 1988.

### Production Characteristics

Soil type, climate, and operation of the peanut program determine the location of peanut production. Peanuts are best adapted to well-drained, light-textured soils and, depending on variety, require from 120 to 150 days from planting to maturity. Although the current peanut program no longer restricts production through acreage allotments, the poundage quota system still largely follows the historic allotment pattern. Peanuts are often grown in rotation with other crops, including wheat, soybeans, and corn.

#### *Geographic Distribution of Production*

There are three peanut-producing regions: the Georgia-Florida-Alabama region, referred to as the Southeast; the Texas-Oklahoma region, referred to as the Southwest; and the Virginia-North Carolina region, referred to as the Virginia-Carolina region. Seven States grow 98 percent of the U.S. peanut crop. Georgia is the leading peanut-producing State, accounting for about 45 percent of U.S. production. For 1986-88, the Southeast produced 65 percent of the peanuts, the Southwest 17 percent, and the Virginia-Carolina region 18 percent (table 1).

During the last three decades, the Southeast's share of U.S. production increased, but declined slightly in 1986-88 because of droughts in 1986 and 1987. The Southwest's share has ranged from 15 percent to 26 percent, and the Virginia-Carolina share has dropped. Total peanut acreage fell between 1979 and 1982 but has trended upward since then. Planted acreage has moved in line with changes in the national poundage quota since 1984.

#### *Structure of Peanut Farms*

According to the 1987 Census of Agriculture, 18,905 farms harvested peanuts. Of these farms, 18,529 were located in the nine peanut-producing States covered by USDA's *Crop Production* reports. The total number of farms harvesting peanuts was 23,046 in 1978. The harvested acreage per farm was about 76 acres in 1987 and 53 acres in 1978 and 1982.

Fifty-seven percent of the farms harvesting peanuts in 1987 had harvested acreage of less than 50 acres and 1 percent had harvested acreage of over 500 acres (table 2). Of the peanuts harvested, 35 percent came

**Table 1—U.S. peanut production**

| Region | 1951–60 | 1961–70 | 1971–80 | 1981–85 | 1986–88 |
|---|---|---|---|---|---|
| | | | *Percent* | | |
| Southeast | 49.2 | 51.1 | 61.6 | 66.4 | 64.5 |
| Southwest | 17.7 | 26.3 | 19.0 | 15.1 | 17.4 |
| Virginia-Carolina | 33.1 | 22.6 | 19.4 | 18.5 | 18.1 |

**Table 2—Number of farms harvesting peanuts and pounds of peanuts produced, by harvested acreage size distribution, 1987**

| Harvested peanut acres | Farms | | Production | |
|---|---|---|---|---|
| | *Number* | *Percent* | *Million pounds* | *Percent* |
| 1–49 | 10,802 | 57.1 | 464 | 13.6 |
| 50–99 | 3,567 | 18.9 | 580 | 17.0 |
| 100–249 | 3,348 | 17.7 | 1,201 | 35.3 |
| 250–499 | 949 | 5.0 | 737 | 21.7 |
| 500–999 | 206 | 1.1 | 304 | 8.9 |
| 1,000 and over | 33 | .2 | 118 | 3.5 |
| Total | 18,905 | 100.0 | 3,404 | 100.0 |

Source: 1987 Census of Agriculture.

from farms harvesting an average of 100-249 acres. The large number of farms harvesting fewer than 50 acres of peanuts accounted for about 14 percent of the total.

Nearly all of the peanut poundage quota is allocated to farmers in nine States, with a small amount distributed to farmers in seven other States. Sixty percent of the basic poundage quota was allocated to the Southeast, 21 percent to the Southwest, and 19 percent to the Virginia-Carolina region in 1988. The largest allocations were Georgia, 577,034 tons; Alabama, 187,875 tons; and Texas, 185,702 tons. The States with the smallest basic poundage quota (less than 1,000 tons) were Arizona, California, and Missouri.

A 1982 cost of production survey, which included a sample of farms in the seven largest peanut-producing States, indicated that the split between quota production on owned and rented quota is about 50-50. The 50 percent of rented quota peanut production was further broken down to show that 9 percent was attributed to producers who rented quota only, while the remaining 41 percent was attributed to producers who rented the quota with land. Quota lease rates vary across States and between counties within States. Lease rates have trended upward since 1978 and are estimated to average about 7.5 cents per pound in the Southeast in 1987 (Fabre).

The peanut cost of production survey indicated that soybeans were another important crop on farms growing peanuts in the Southeast. In Georgia, about 19 percent of cropland per farm was planted to peanuts and nearly 42 percent was planted to soybeans. In North Carolina and Virginia, soybeans and corn accounted for over 60 percent of cropland planted. In the Southwest, wheat was the primary other crop grown on farms planting peanuts. Of the farms harvesting peanuts in 1978, 43 percent received over 50 percent of their total value of sales of agricultural products from sugar, Irish potatoes, hay, peanuts, and other field crops; 11 percent from cash grains; 17 percent from general crops; and 17 percent from livestock.

### *Types of Peanuts*

Three main types of peanuts are grown in the United States: Florunners, Virginia, and Spanish. The Southeast grows mostly the medium kernel runner peanuts. The Southwest used to grow two-thirds Spanish and one-third runner but now grows more runners than Spanish. Virtually all the Spanish peanut production is in Oklahoma and Texas. The Virginia-Carolina region grows mostly the large-kernel Virginia peanut. A fourth type, the Valencia, is grown in New Mexico.

In 1987/88, runner peanuts accounted for about 78 percent of peanuts used in domestic edible products, Virginia peanuts accounted for about 14 percent, and Spanish peanuts accounted for about 8 percent (table 3).

## Trends in Domestic and Foreign Markets for Peanuts

Except for years when peanuts have been in short supply because of drought, domestic food use has grown steadily since World War II. The biggest food use of peanuts is peanut butter. Crushing peanuts for oil and meal varies from year to year, primarily because of fluctuations in production and foreign demand. U.S. peanut exports are small compared with domestic use. Major export markets for U.S. peanuts are the European Community, Canada, and Japan.

**Table 3—Peanuts used in edible products, 1979–87**

| Year [1] | Runner | Virginia | Spanish | In-shell [2] | Total |
|---|---|---|---|---|---|
| | | | *Million pounds* [3] | | |
| 1979/80 | 977 | 169 | 147 | 1,151 | 1,444 |
| 1980/81 | 871 | 99 | 106 | 90 | 1,166 |
| 1981/82 | 990 | 138 | 97 | 151 | 1,376 |
| 1982/83 | 992 | 215 | 102 | 155 | 1,464 |
| 1983/84 | 1,032 | 163 | 116 | 130 | 1,441 |
| 1984/85 | 1,051 | 176 | 115 | 159 | 1,501 |
| 1985/86 | 1,092 | 207 | 123 | 176 | 1,598 |
| 1986/87 | 1,053 | 281 | 126 | 162 | 1,622 |
| 1987/88 | 1,153 | 217 | 115 | 141 | 1,626 |

[1] August–July marketing year.
[2] To convert from in-shell to shelled basis, multiply the in-shell weight by 0.7519. Most peanuts sold in the shell are Virginia peanuts; Valencia peanuts are also used.
[3] Shelled basis.

### *Edible Peanuts*

Peanut manufacturers produce three principal products: peanut butter, packaged nuts (includes salted, unsalted, flavored, and honey-roasted nuts), and peanut candies. Almost half of all peanuts processed in the United States for edible purposes are used in the manufacture of peanut butter (table 4). Packaged nuts account for almost one-third of all processed peanuts. Some of these are roasted in the shell, commonly referred to as "ballpark" peanuts, while a much larger quantity is used as shelled peanuts packed as dry-roasted peanuts, salted peanuts, or salted mixed nuts. Some peanuts are ground to produce peanut granules and flour.

Dry-roasted and salted peanuts compete with other edible nuts, such as almonds, cashews, and pistachios. Edible peanuts can complement tree nuts in mixed nut packs but can also substitute for tree nuts up to some maximum level depending on relative prices. Peanut candy accounts for about 20 percent of all processed peanuts. Peanuts are the dominant shelled nut used in candies, followed by almonds. Thus, such factors as cocoa and sugar prices affecting the candy market indirectly affect the demand for edible peanuts.

Unshelled Virginia peanuts are roasted for use as ballpark peanuts or cleaned, in-shell peanuts. As shelled peanuts, 50-60 percent of Virginias are used as cocktail nuts and salted peanuts and 50-60 percent of runners are used in peanut butter. Salted nuts and candy each account for about 20 percent of shelled runner use. Spanish peanut use is about evenly divided among salted nuts, peanut butter, and candy. Runners are the most important type for all shelled uses. Virginia peanuts dominate the roasted in-shell market. The Valencia peanut with its long shell containing three or four kernels is excellent for roasting in the shell.

### *Peanut Oil and Meal*

In addition to edible uses, the peanut can be crushed into oil and meal. Peanuts rank among the world's principal oilseeds but contribute only insignificant quantities to the availability of edible oil and protein meal in the United States. In marketing years 1984-87, peanut oil ranked sixth (6 percent) in production of the world vegetable and marine oils, behind soybean oil (29 percent), palm oil (16 percent), sunflowerseed oil (13 percent), rapeseed oil (13 percent), and cottonseed oil (7 percent). Peanut meal ranked sixth (5 percent) in production of major protein meals, on a 44-percent protein meal equivalent, following soybean meal (61 percent), cottonseed meal (9 percent), fish meal (9 percent), sunflowerseed meal (7 percent), and rapeseed meal (7 percent). In marketing years 1985-87, U.S. peanut crush averaged 629 million pounds, or about 16 percent of peanut production. In comparison, soybeans crushed for oil and meal totaled more than 1.1 billion bushels (68 billion pounds).

Oilstock peanuts are generally those that have been rejected or diverted from edible channels. Diversion may be due to oversupply of a certain type. Rejections include "pick-outs" from edible nuts and other low-quality peanuts, such as Segregation 3 peanuts, those containing a toxin-producing mold, such as aflatoxin. Rejects also include improperly stored peanuts that are weathered (shriveled and wrinkled), infested by insects, or moldy. Small kernels, including 14/16 sheller grades, have been made ineligible for domestic edible use by the Peanut Administrative Committee (PAC).

**Table 4—U.S. food uses of peanuts, 1979–87**

| Year [1] | Peanut butter | Salted peanuts | Peanut candy | Sandwich snacks [2] | Other uses | Cleaned in-shell [3] | Total |
|---|---|---|---|---|---|---|---|
| | | | | *Million pounds* [4] | | | |
| 1979/80 | 700 | 285 | 258 | 30 | 20 | 151 | 1,445 |
| 1980/81 | 589 | 205 | 238 | 24 | 20 | 90 | 1,166 |
| 1981/82 | 654 | 278 | 256 | 23 | 15 | 151 | 1,377 |
| 1982/83 | 678 | 308 | 284 | 22 | 17 | 155 | 1,464 |
| 1983/84 | 671 | 302 | 298 | 24 | 15 | 130 | 1,441 |
| 1984/85 | 697 | 309 | 290 | 26 | 19 | 159 | 1,501 |
| 1985/86 | 701 | 359 | 314 | 25 | 24 | 176 | 1,598 |
| 1986/87 | 679 | 384 | 321 | 34 | 41 | 162 | 1,622 |
| 1987/88 | 701 | 374 | 326 | 46 | 38 | 141 | 1,626 |

[1] August–July marketing year.
[2] Peanut butter sandwich snacks sold commercially.
[3] To convert from in-shell to shelled basis, multiply the in-shell weight by 0.7519.
[4] Shelled basis.

### *U.S. Peanut Exports*

The United States is one of the major world exporters of edible peanuts (table 5). Although the United States accounts for only about 9 percent of world peanut production, its share of world trade is 27 percent. U.S. peanut exports were over 1 billion pounds from 1977/78 to 1979/80, but fell to 503 million pounds in 1980/81 because of higher prices and reduced availability resulting from a drought in 1980. Exports gradually recovered until they again exceeded 1 billion pounds in 1985/86. Exports fell below 700 million pounds in 1986/87 and 1987/88 because of reduced supplies and increased competition.

Nearly all U.S. peanut exports are for edible use, but in some years, up to 20 percent are oilstock exports for crushing. The value of peanut exports averaged $197.5 million for marketing years 1985-87. About 20 percent of the U.S. peanut crop was exported in the mid-1980's, compared with around 3 percent in the early 1960's and 15 percent in the early 1970's.

Before 1970, U.S. peanut exports averaged less than 100,000 metric tons each year and accounted for less than 5 percent of world trade. Most of these shipments went to Canada as edible nuts. U.S. peanut exports increased in 1971 and continued expanding during the 1970's in line with rising domestic supplies, reduced marketings from the principal African exporters (Nigeria and Senegal), and increasing demands in Canada, Western Europe, and Japan.

Exports dropped in 1980, after severe drought reduced the U.S. peanut crop to its lowest level in 17 years. The worldwide recession in the early 1980's and the strong U.S. dollar slowed the recovery of U.S. peanut trade by keeping demand down. Since 1985, the principal destinations of U.S. peanuts have been the European Community (64 percent), Canada (16 percent), and Japan (9 percent). The U.S. share has fallen in recent years because of increased competition, particularly from China.

Peanut shipments by other exporters (mainly Sudan, China, and India) fluctuated widely during the 1960's and 1970's, primarily reflecting the volatile nature of peanut production in these countries. Sudan accounted for a sizable share of the world market during most of the 1970's before dropping off in 1979 as a result of reduced supplies.

China emerged as a major exporter in 1980, with sales to Japan and other Asian countries and small shipments to Western Europe. High peanut prices brought on by the drought-stricken U.S. crop, policy incentives for expanding oilseed production, and the opportunity to increase foreign exchange earnings were the primary reasons for the increase in Chinese peanut exports. Argentina is now the third largest exporter behind China and the United States.

The primary outlets for world peanut exports have been the European Community countries (particularly the Netherlands, United Kingdom, and Federal Republic of Germany), Canada, and Japan.

Peanut products exported to Canada and Mexico must be manufactured from quota peanuts. Peanut products exported to other destinations are mostly manufactured from additional peanuts. Additional peanuts are those produced in excess of the quota level. A substantially lower price support applies to additional peanuts so it is advantageous to contract with a sheller or other buyer to assure a price above production costs. Under the current two-price peanut program, the restriction

**Table 5—Peanut exports from specified countries [1]**

| Country | 1981/82 | 1982/83 | 1983/84 | 1984/85 | 1985/86 | 1986/87 | 1987/88 |
|---|---|---|---|---|---|---|---|
| | | | | *1,000 metric tons* | | | |
| United States | 261 | 309 | 337 | 390 | 473 | 301 | 280 |
| Sudan | 131 | 70 | 51 | 15 | 11 | 10 | 75 |
| China | 157 | 232 | 209 | 213 | 332 | 398 | 359 |
| Argentina | 64 | 111 | 121 | 117 | 186 | 170 | 160 |
| South Africa | 39 | 5 | 6 | 47 | 21 | 1 | 37 |
| India | 46 | 35 | 60 | 40 | 15 | 40 | 10 |
| Gambia | 43 | 70 | 34 | 33 | 25 | 40 | 55 |
| Brazil | 19 | 13 | 12 | 20 | 12 | 8 | 8 |
| Vietnam | 18 | 40 | 33 | 35 | 45 | 40 | 40 |
| Malawi | 10 | 6 | 2 | 13 | 20 | 20 | 42 |
| Paraguay | 1 | 13 | 6 | 17 | 18 | 23 | 19 |
| Other | 218 | 184 | 132 | 157 | 207 | 215 | 224 |
| Total | 1,007 | 1,088 | 1,003 | 1,097 | 1,365 | 1,266 | 1,309 |

[1] Local marketing years.

was implemented to protect against the possibility of contract additional peanuts being processed into products in the United States, exported to Canada or Mexico, and then imported back into the United States to displace some higher price-supported quota peanuts. The displaced quota peanuts could end up under Government loan to be disposed of by the Government, probably at a loss.

***Exports of Oil and Meal***

Roughly half of the world's peanut production is crushed into peanut oil and meal. Peanut oil is the higher valued product and, therefore, the primary output of the peanut crushing industry.

World trade in peanut oil, while fluctuating from year to year, trended upward during the 1960's and early 1970's in line with growing world demand for vegetable oils. World exports peaked in 1977 and averaged about 350,000 metric tons in the late 1980's. Increased competition from tropical oils and rapeseed oil limited peanut oil trade in the 1980's.

Senegal, China, Argentina, and Brazil are the leading peanut oil exporters. U.S. exports of peanut oil are small (5 percent of world trade) and fluctuate from year to year. Exports as a share of production have been volatile, ranging from as low as 1 percent in 1962 to 36 percent in 1985 and falling below 5 percent in 1986-87. U.S. export earnings from peanut oil averaged $2.6 million for fiscal years 1986-87, less than 1 percent of total vegetable oil export earnings during this period.

Major markets for U.S. peanut oil exports are the European Community, Canada, and Hong Kong. U.S. exports declined in the early 1980's due to the drought-reduced 1980 crop, the global recession, and the strong U.S. dollar which dampened sales. Large crops in 1984 and 1985 led to an unusually large crush and abundant peanut oil supplies in 1985/86. U.S. exports surged to 93 million pounds in 1985/86.

Peanut meal, the other product from crushing peanuts, is used primarily as a protein supplement in livestock feed rations. Because peanuts are primarily crushed for the higher valued oil, the supply of peanut meal is influenced by developments in the fats and oils market. World trade in peanut meal has been highly variable over the past two decades, reflecting year-to-year fluctuations in world peanut production and crush. World exports averaged 650,000 metric tons between 1985/86 and 1987/88 compared with 1.5 million metric tons in 1975/76-1977/78. The United States consumes essentially all of its peanut meal production.

***The Export Outlook***

The United States can export over 1 billion pounds of peanuts a year as shown by the experiences in 1978/79, 1979/80, and 1985/86. However, peanut exports can fall dramatically, especially when production falls. This happened in 1980/81 when U.S. exports were halved following the 1980 drought. Availability of supplies and a reputation as a reliable supplier are important, but other factors also will influence U.S. peanut exports in the 1990's.

U.S. peanut exports have generally commanded a price premium over peanuts from other origins in world trade because of a quality difference. Foreign suppliers have improved their quality in recent years and become more price competitive. There is increasing concern about chemical residues in peanuts and many other food crops. In the case of peanuts, aflatoxin is also a concern. Both domestic and foreign buyers are setting tighter standards for residues and aflatoxin. The maximum allowable aflatoxin level in a number of countries is well below the current U.S. limit. The peanut industry is responding to this demand for tighter standards by phasing in lower aflatoxin limits. New peanut handling practices and technology are being evaluated to improve peanut quality.

The Food Security Act of 1985 gave USDA the authority to use Commodity Credit Corporation (CCC) funds or commodities to counter or offset the adverse effects of unfair trade practices on U.S. agricultural exports. The program, known as the targeted export assistance (TEA) program, has provided funds to the National Peanut Council to promote U.S.-origin peanuts and peanut products in Europe. Funding began with $4.5 million for fiscal year 1987 and was $6 million in calendar year 1988. A $4-million allocation was approved for calendar year 1989.

The performance of the TEA program in Europe has been encouraging, despite the surge in prices of U.S. edible kernel peanuts in Europe caused by low U.S. crops in 1986 and 1987. U.S. exports to the TEA countries increased for the 1987/88 marketing year, despite high world prices, while exports to the non-TEA countries declined. TEA and other export programs could be factors affecting the peanut export outlook.

Exports will continue to be influenced by the purchasing power in importing countries, the value of the dollar, and the price of U.S. peanuts relative to peanuts from other origins. Exports will also depend on the supplies and prices of competing edible nuts (almonds, cashews, hazelnuts, Brazil nuts, walnuts, pistachios,

pecans, and macadamia nuts) as well as snack foods.

Developments in the fats and oils sector are likely to reduce the importance of peanuts as an oilstock. Expanded production and consumption of cheaper vegetable oils—particularly soybean, palm, rapeseed, and sunflowerseed—and the ease of substitution among the oils are likely to displace some peanut oil or force prices lower.

**Trends in Prices and Farm Returns**

U.S. yields averaged about 1,000 pounds per acre in the mid-1950's. By the late 1970's, yields averaged more than 2,600 pounds per acre. Factors responsible for the yield increases included improvements in peanut varieties and cultural and management practices. During this period, acreage was limited by allotments and price supports were above costs of production. This reduced the price risk and encouraged adoption of production-increasing technology and practices to increase yields on allotted acres. Shifting to higher yielding varieties, especially the Florunner, substantially increased yields. Improved mechanization, increased fertilizer applications, insect and weed control, and cultural practices also contributed to the increases in yields.

Yields averaged over 2,800 pounds per acre in 1984 and 1985, but droughts in 1986 and 1987 cut average yields to 2,407 pounds and 2,339 pounds per acre. These dry years increased interest in irrigation systems, especially in the Southeast. As more irrigation systems are installed, yields will be less susceptible to droughts.

Environmental and health concerns have led to restrictions on certain agricultural chemicals used in peanut production. This may curb yield increases if suitable substitutes are not found.

***Production Costs and Returns***

The Agriculture and Food Act of 1981 introduced a policy of unrestricted production for additional peanuts. This policy was consistent with expanding export demand and increasing production efficiency. Least-cost producers had an opportunity to expand, and new producers could enter the market in areas having a competitive advantage.

Unrestricted production has attracted only a small number of new growers because new growers are not eligible for the quota support price unless they buy or lease quota in a traditional peanut-growing area. State average quota lease rates since 1978 have ranged from less than 3 cents per pound to nearly 11 cents per pound, depending on year and location. State average quota sale prices have ranged from 9 cents per pound to 40 cents a pound. Quota sale prices incorporate buyers' expectations about the future of the peanut program. Buyers are assured of poundage quotas only for the years remaining under the current farm legislation. Quota peanuts are currently supported at $615.87 per ton and additionals at $149.75 per ton. Also, peanuts require investment in specialized equipment for production and specialized knowledge of cultural practices.

The basic national poundage quota for 1988 was 2.8 billion pounds, 70 percent of total peanut production. Production is larger than the national poundage quota for several reasons. First, quota holders may overplant to protect against low yields and ensure that they produce enough peanuts to market their quota. Second, under the current program, quota holders and growers without a quota become eligible for a share in increases in their State's poundage quota if they have a record of producing and marketing additional peanuts in 2 of the previous 3 years. Finally, there are some low-cost producers who can profitably produce additionals for the export market.

The national poundage quota increased 2.7 percent for 1989, suggesting that production will increase in 1989 if yields are average. In the longer run, peanut production will depend on the prospects for increases in poundage quotas and the competitiveness of U.S. peanuts in world markets. If peanut quotas were reduced or eliminated, peanut production would tend to shift to least-cost producers, whether they are current quota holders or not. Growth in demand may be uneven among end products that use different peanut types, which could affect the competitiveness of different regions.

U.S. cash receipts for peanuts peaked in 1984, with gross returns exceeding $725 per acre (table 6). Cash receipts have fallen each year since 1984, except for 1986. Cash receipts in 1987 were 13 percent below the level of 1984, due to lower yields, which have fallen from 2,828 pounds in 1984 to 2,281 pounds per planted acre in 1987.

Cash expenses per acre trended lower from about $450 per planted acre in 1981 to $395 in 1985 but exceeded $400 again in 1986 and 1987. Seed costs increased by 38 percent between 1985 and 1987 to surpass $82 an acre. Chemicals, the largest single cash expense, decreased slightly in 1987 after remaining

steady for the past 5 years at about $90. General farm overhead costs increased 45 percent between 1985 and 1986, rising from 6 percent to 9 percent of total cash expenses. Interest costs, which accounted for 19 percent of total cash expenses in 1986, were sharply lower in 1987, falling by nearly 35 percent.

Cash expenses per pound of peanuts ranged from 16 cents to 18 cents from 1981 to 1987, except in 1984 and 1985 when high yields reduced costs to 14.7 cents and 14.2 cents a pound. Returns after cash expenses ranged from 7 cents to 11 cents a pound of peanut production between 1981 to 1987. In 1980, a drought year, cash expenses were 22.5 cents a pound and returns above cash expenses were only 1.5 cents.

Returns above cash expenses increased in 1986 to $261 an acre, up $19 over those of 1985. Cash expenses and total receipts were lower in 1987, but because expenses fell just 3 percent while receipts fell 7 percent, returns after cash expenses declined 12 percent.

ERS' annual cost of production report describes peanut costs and returns for three regions: Virginia-Carolina; Georgia-Florida-Alabama (Southeast); and Oklahoma-Texas (Southern Plains). In the past 3 years, the Virginia-Carolina region had the highest returns per acre of the three regions. Virginia-Carolina had average receipts of $759 an acre during 1985-87. The Southeast averaged $669 an acre, and the Southern Plains averaged only $516 an acre during the same period.

Cash expenses averaged $455 an acre in the Virginia-Carolina region during 1985-87, $419 an acre in the Southeast, and $329 in the Southern Plains. Seed and chemical costs were much higher in Virginia-Carolina and the Southeast than in the Southern Plains.

Virginia-Carolina regional returns after cash expenses averaged $303 per acre in 1985-87, which was the highest during that time period. Although the Southeast had the highest return after expenses in 1985, its 1985-87 average was only $250 an acre, or $53 an acre less than Virginia-Carolina. Returns in the Southern Plains averaged $187 an acre during the same time.

## History of the Peanut Program

The U.S. Congress has established a number of programs since the early 1930's to support and stabilize farm prices and income and to adjust production to market needs for certain "basic" commodities. While the programs have varied from one period to another, several key peanut program features have remained in place through the years, including marketing quotas, price supports, and acreage allotments (acreage allotments were suspended in the Agriculture and Food Act of 1981).

### Early Programs

The failure of the Agricultural Marketing Act of 1929 and earlier programs to stabilize farm prices led to enactment of the Agricultural Adjustment Act of 1933. The aim of this legislation was to bolster the prices of certain basic commodities in surplus supply. Under the act, farmers could take land out of production in return for benefit payments financed largely by processing taxes on the commodities.

Peanuts came under production control and diversion provisions of the act after being designated as a basic crop in April 1934. The program included contracts with peanut growers obligating them to plant no more than 90 percent of the 1933 or 1934 planted acreage or

**Table 6—Peanut sector costs and returns, 1980–87**

| Crop Year | Cash receipts | Cash expenses | Returns above cash expenses | | |
|---|---|---|---|---|---|
| | | | Total | Nominal | Deflated [1] |
| | *Dollars per planted acre* | | | *Dollars per pound* | |
| 1980 | 376.45 | 343.31 | 33.14 | 0.022 | 0.026 |
| 1981 | 721.19 | 439.23 | 281.96 | .106 | .113 |
| 1982 | 668.05 | 419.82 | 248.23 | .094 | .094 |
| 1983 | 562.79 | 420.22 | 159.79 | .068 | .065 |
| 1984 | 726.46 | 416.49 | 309.97 | .110 | .102 |
| 1985 | 638.00 | 391.52 | 246.48 | .089 | .080 |
| 1986 | 677.32 | 416.37 | 260.95 | .111 | .097 |
| 1987 | 631.23 | 402.73 | 228.50 | .100 | .085 |

[1] Returns deflated to constant 1982 dollars by the GNP implicit price deflator.

the average acreage for those 2 years. The contract provided benefit payments for diverting peanuts into crushing for oil and meal. The program was successful in diverting 154 million pounds (farmers' stock) of the 1934 crop into oil and meal and reducing the 1935 crop by 1 percent.

In January 1936, the Supreme Court (Hoosac Mills decision) declared the production control features of the 1933 Act unconstitutional and voided the provisions on processing taxes. Thus, the program, involving contracts between the Federal Government and individual farmers and financed by processing taxes, was terminated. Congress then enacted the Soil Conservation and Domestic Allotment Act. This 1936 legislation authorized payments to farmers for voluntarily shifting acreage from soil-depleting surplus crops into soil-conserving legumes and hays. Peanuts were designated as a soil-depleting crop under this act.

In 1937, four regional growers' associations were organized to participate in the peanut diversion programs. The associations were reduced to three, the current number, in 1940. The associations were authorized to buy up to a certain quantity of peanuts at prices established by USDA which absorbed storage costs and losses on surplus peanuts diverted to crushing. This program was continued through 1940, with payments made only to growers who voluntarily participated in the conservation phase of the program. However, this voluntary program was ineffective in reducing production because of acreage expansion by nonparticipants.

**World War II and After**

The Agricultural Adjustment Act of 1938 was amended in April 1941 to authorize marketing quotas for peanuts and to re-establish peanuts as a basic crop. This act, as amended, made price supports mandatory for peanuts at 50-75 percent of parity. Peanut marketing quotas were also approved for the 1941-43 crops in a grower referendum, with penalties provided for noncompliance.

When the United States entered World War II, the penalties for noncompliance were not applied because of the increased demand for oil, food, and feed from peanuts. Likewise, acreage allotments and marketing quotas were not imposed for the period 1943-48. Consequently, U.S. peanut acreage expanded from a 1938-41 average of 1.9 million acres to 3.4 million acres during the 1943-48 period. The CCC was the only authorized purchaser of farmers' stock peanuts from 1943 to 1946. In December 1946, the growers' associations resumed purchasing operations.

To insure growers a share in the profit from defense contracts and to provide an incentive for wartime production, legislation raising loan rates up to 85 percent of parity was approved in May 1941 for selected crops. Peanuts were added to the list of selected crops in December 1941. Eligibility for the higher loan rate further required producer approval of marketing quotas for those crops and extended the increased loan rates through the 1946 crop year.

Generally, the Secretary of Agriculture is directed to proclaim marketing quotas when supplies of the authorized crop are excessive. Peanuts are an exception because marketing quotas must be proclaimed for peanuts without regard to the supply situation. Farmers can disapprove the quota in a referendum, but they never have. Again, unlike most crops, the vote on peanut quotas is for 3 years instead of 1 year. But, if quotas are disapproved, another referendum will be held the following year.

The 85 percent of parity loan rate was also extended to certain nonbasic commodities, including peanuts for oil, under the Steagall Amendment (approved July 1941). The support rate was further increased to 90 percent of parity for peanuts and peanuts for oil by an amendment to the Emergency Price Control Act of 1942 (approved October 1942). This level of support remained in effect for 2 years after the end of the war.

Price support rates were scheduled to revert to prewar parity levels upon expiration of wartime price supports on December 31, 1948. However, the Agricultural Act of 1948 continued mandatory price support at 90 percent of parity through 1949. Peanuts for oil were supported at 60 percent of parity.

The Agricultural Act of 1949 set support levels for basic commodities at 90 percent of parity for 1950 and between 80 percent and 90 percent for 1951. Producers were to receive price supports only if acreage allotments and marketing quotas were in effect. For 1952 and succeeding crop years, cooperating producers of basic commodities were to receive support prices at levels varying from 75 percent to 90 percent of parity, with the specific level depending on supply.

With the outbreak of the Korean war in 1950, the Secretary of Agriculture used the national security provision of the 1949 Act to keep price support levels for peanuts at 88 percent of parity. The support rate for peanuts was raised to 90 percent for the 1952-55 crops. From

1955 to 1977, the support price for peanuts varied between 75 percent and 86 percent of parity. The rate remained at the legal minimum of 75 percent from 1970 to 1977.

Marketing quotas and acreage allotments have been in effect for peanuts since 1949. The quotas originally were set above U.S. domestic needs to help alleviate the world food shortage. The national allotments were lowered each year from 1949 until 1954 when the legal minimum (established in 1941) of 1.61 million acres was reached. Short crops in 1955 and 1956 caused allotments to increase slightly for 1956 and 1957. Until they were suspended in 1982, the allotments remained at the legal minimum, except for some increases for types of peanuts in short supply, primarily Valencias.

To protect the domestic peanut price support program, the U.S. Government has, since 1953, set an annual import quota of 1,709,000 pounds (shelled basis), which is extremely small compared with about 1.6 billion pounds used in domestic foods. Some peanut products and peanut butter are not covered. Section 22 of the Agricultural Adjustment Act of 1933, as amended, gave the President authority to impose import quotas on farm commodities whenever imports interfered with the agricultural adjustment program. During the shortfall in domestic production in 1954 and 1980, larger quantities of peanuts were imported under emergency quotas.

The United States maintains relatively small import duties on imports of peanuts and peanut products. Shelled peanuts are charged 7 cents tariff per pound, unshelled peanuts are charged 4.25 cents per pound, peanut meal is charged 0.3 cents per pound, and peanut oil and peanut butter are charged 3 cents per pound.

Before 1978, the price support was based on parity and supports were substantially above world levels. Because of this, quantities taken under loan grew and Treasury costs for operating the program mounted, since the CCC had to dispose of surplus stocks at a price below the support.

In December 1967, legislation authorized the sale or lease of acreage allotments for the 1968 and 1969 crop years; these transfer provisions were made permanent by a 1969 law. The sale and lease of allotments were restricted to the same county.

### 1977 Legislation

The peanut program was an issue during deliberations on the 1977 farm legislation because of surplus production and mounting costs to the Government. The peanut program had been essentially unchanged since 1949. The minimum legal acreage allotment had been in effect since the 1957 crop, and the support price based on 75-90 percent of parity began trending up in the late 1960's as inflation took hold. This es-calation caused concern about the competitive position of peanuts in both domestic and foreign markets. Parity prices are those which will give farm products generally the same per-unit purchasing power in terms of goods and services farmers buy as that which prevailed in the base period of 1910-14. Over a period of years, as farms become larger and farm technology and yields change, price ratios alone provide a less accurate barometer of the financial well-being of farmers.

These profitable and stable conditions induced technological advancement in peanut production. The national average yield increased 2.5 times between 1957 and 1977. Domestic use increased at a slower rate, leading to surplus domestic supply.

The peanut program was substantially changed by the Food and Agriculture Act of 1977. The new peanut legislation was introduced to reduce Government costs and was envisioned as a transition for bringing production into line with demand with minimal economic hardship to peanut producers.

Unlike the voluntary programs for wheat, feed grains, rice, and cotton, the peanut program was still mandatory. Under mandatory programs, if at least two-thirds of the producers voting in a referendum approve the program, it becomes binding on all producers.

The 1977 Act implemented a two-price poundage quota program, retaining some elements of the old program such as acreage allotments and price supports. The acreage allotment system remained as an integral part of the new program. Producers still were required to have an allotment if they wished to grow and market peanuts. The minimum national acreage allotment was set at 1.614 million acres and apportioned among the States generally as in the past. The 1977 Act required that transfers of allotments within a county be allowed. Under the previous program, transfer of allotment within a county was permitted only if the Secretary of Agriculture approved it.

In addition to acreage allotments, each allotment holder was given a poundage quota. Producers could produce in excess of their quota, within their acreage allotments, but the quantity on which they could receive the higher of the two price support levels was limited to the quota. Peanuts in excess of quota are referred to as additionals.

The minimum national quota was set at 1.680 million tons for 1978 and decreased 5 percent each year to 1.596 million tons in 1979, 1.516 million tons in 1980, and 1.440 million tons in 1981. The poundage quota for an individual farm was computed through the following formula: Farm quota equaled farm base production poundage multiplied by a national factor. The farm base production poundage equaled the acreage allotment for the farm multiplied by the farm yield. Farm yield equaled the average yield on the farm for the best 3 years out of the 5 years 1973-77. Yield appraisals were made for farms that did not grow peanuts for at least 3 years during the base period and for those that had substantial changes in farm operation. The national factor was computed so that the sum of the farm quotas equaled the national quota.

Beginning with the 1979 crop, the farm quota was raised if individual producers undermarketed their quota the previous year and if they had planted sufficient acreage, based on their farm yield in the previous year, to have expected to market their quota. The total of the undermarketing carryovers was restricted to 10 percent of the national quota, but an individual's carryover was not limited unless the maximum was reached. Producers did not risk losing or having the allotment reduced if they planted enough acreage, based on their farm yield, to produce at least 75 percent of their quota.

A minimum price support for quota peanuts was set at $420 per ton on a national basis. The quota support continued to be adjusted (differentials) to reflect quality and type as in the past, but deductions for inspection, handling, or storage were no longer allowed. The price support on additional peanuts was mandated to be announced by February 15 and was based on the world market conditions for peanuts and the expected price of peanuts for crush. In addition, CCC announced a minimum export resale price for loan peanuts each year.

Even though quota and additional peanuts were grown in the same field, there was a significant difference in the application of the program. Producers grew quota peanuts mainly for the domestic market for edible uses and seed for the next year's crop, thus being assured of the higher of the two price supports. Quota peanuts could be contracted any time before harvest or placed under quota loan at harvest. Producers had a choice of two ways to market their additional peanuts. Producers could contract for sale with a handler. The contracts had to be signed before June 15, and the peanuts could be used only for crush or export and not for domestic food or seed uses. Additional peanuts could also be delivered to buying points at harvest and placed under loan, with the producers receiving the additional price support.

Once the peanuts were received and placed under loan, the producers no longer had control of them. The additional peanuts received for loan could be used for crush, export, or the domestic edible market. Use in the domestic edible market required the buyer to pay no less than the handling costs plus 100 percent of the quota loan if purchased at time of delivery during harvest, 105 percent of quota loan if purchased after delivery but before December 31, or 107 percent of the quota loan if purchased January 1 or after. This provision, plus the import quota, ensured that the domestic market would not be undercut. Any profits on the additional peanuts that accrued through the sale of additional loan peanuts into domestic edible uses were used to offset losses on quota loan peanuts of the same type in the same production area. Any remaining profits were distributed back to the producers based on the volume of delivered additional loan peanuts in a given area of a particular type.

**1981 Legislation**

The 1981 Act, which covered the 1982-85 crops, further modified the peanut program. The 1981 Act maintained the two-tier price system and continued the reduction in the poundage quota. A major change was the suspension of acreage allotments. Quota support prices were limited to quota holders and applied to the poundage quota, but since acreage constraints were removed, anyone was allowed to produce peanuts. However, additional peanuts were eligible only for the lower support price, and they were subject to marketing controls.

Use of additional loan peanuts in the domestic edible market was restricted to the provisions outlined in the 1977 Act, requiring purchasers to pay a quota peanut price plus handling and storage costs. Contract additional peanuts were restricted to the export or crush markets. The price support for additionals was based on the crush value for peanuts. The price support for additionals decreased from $200 per ton in 1982 to $148 per ton for 1985.

The carrying forward of undermarketed quota remained the same, although unused quotas from 1979 and prior marketing years could not be carried forward.

The contract deadline for additional peanuts for export or crush was moved from June 15 to April 15. Growers argued that June 15 was past the time crop planting

decisions were made and that it would be better to have contracts signed before planting. Domestic buyers were also concerned about ways of ensuring supplies for the domestic edible market since domestic demand exceeded the poundage quota level and contract additionals were for the export or crush markets. The supply of additional loan peanuts that could be bought back for domestic edible use was thought to be limited if producers mainly grow peanuts for quota and contract additionals. Thus, the use of a contract deadline and its timing remained issues.

The quota support price was established by law at no less than $550 per ton, up from $455 in 1981. Increases in quota support were to reflect increases in costs of production but not to exceed 6 percent per year. Peanuts are the only field crop, except flue-cured and burley tobacco, for which support price adjustments are based by law on cost of production. Questions were raised by producers about the accuracy of cost of production estimates and whether these estimates should be used to set the quota support rate. A minimum CCC export resale price for additional loan peanuts was announced each year and was $425 per ton for 1985.

Sale and lease of poundage quotas were still permitted only within a county in the major peanut-producing States. In States with less than 10,000 tons of quota in 1981, cross-county sale and lease were permitted.

The minimum poundage quota was reduced from 1.44 million tons in 1981 to 1.2 million tons in 1982 and then was reduced about 3 percent per year to 1.167 million tons in 1983, 1.134 million tons in 1984, and to 1.1 million tons for 1985. The annual percentage reductions were shared equally among States.

Quota reductions came, first, from farms owning quotas that did not have adequate tillable land to produce it; next, from farms where the quota had not been planted in 2 of the last 3 years; then, from farms where the quota had been leased away to another farm; and finally, from farms producing their own quota. In practice, the last two categories were combined for the 1982 and 1983 quota poundage reductions to give producers a chance to adjust to the new regulations. The 1984 and 1985 poundage reductions were made by category. The objective was to get quotas into the hands of actual growers.

### 1985 Legislation

The current peanut program continues the two-tiered price support program for quota and additional peanuts through 1990. The program is mandatory after a January 1986 referendum approved it for the 1986-90 marketing years.

The 1985 Act established that the annual national poundage quota must be set at a level equal to the estimated quantity of peanuts that will be devoted to domestic edible, seed, and related uses but not less than 1.1 million tons. The national quota level must be announced by December 15 preceding the marketing year. The 1986 national quota was allocated among States based on their 1985 allocations. Individual farm quotas were then granted to farms that had a quota in 1985. The national quota was 1.355 million tons in 1986 and 1987. The quota was increased to 1.402 million tons for 1988 and to 1.44 million tons for 1989.

The national average support rate for the 1986 crop of quota peanuts was set at the 1985 rate, adjusted for increases in an index of commodity and service prices, interest, taxes, and wages paid by producers during calendar years 1981-85. The 1986 quota support rate was $607.47 a ton. The support rate for the 1987-90 crops is the rate for the previous crop, adjusted to reflect any increases in the cost of production (excluding any change in the cost of land) during the previous calendar year. The support rate cannot be increased by more than 6 percent from the previous year. The quota support rate remained at $607.47 a ton for 1987 and increased to $615.27 and $615.87 a ton for 1988 and 1989.

The price support level for additional peanuts is set at a level that ensures no loss to CCC from sales or disposal of the peanuts. In determining this level, USDA must consider the demand for peanut oil and peanut meal, the expected prices for other vegetable oils and protein meals, and the demand for peanuts in foreign markets. The additional support rate has remained at $149.75 a ton for 1986-89. USDA has maintained for the 1986-89 peanut crops a minimum price of $400 a ton for additional peanuts sold for export edible use. The support rates for quota and additional peanuts must be announced by February 15.

The 1985 legislation maintained the 1981 provisions covering sale and lease of poundage quotas. Sale or lease of poundage quotas are still permitted only within a county in the major peanut-producing States. In States with less than 10,000 tons of quota for the preceding crop, farm poundage quotas may be sold, leased, or transferred anywhere in the State. If quota could be sold or leased across county or State lines, production would shift to the most profitable production

regions. This could affect some local economies. If no change is made, the production movement would be more gradual, coming from shifts in nonquota peanut production. Growth is expected in the Southeast.

The provisions of a minimum acreage allotment of 1.61 million acres and support based on 75-90 percent of parity are still in the statutes, and the peanut program will revert to them unless changed, or held in abeyance, in future legislation.

### Grower Associations

The peanut program is administered by three regional grower associations that act as agents for USDA. These associations keep records of quota and additional marketings, arrange warehousing for CCC loan peanuts, and operate the price support loan program. To get the support price, a grower places peanuts in storage arranged by the regional association. Once this is done, the grower no longer has control of them. Instead, the peanuts are part of a pool controlled by the association and CCC. Growers who have placed peanuts under loan are eligible for dividend payments if the association revenues from selling peanuts in the pool exceed costs of running the loan program. Although the regional associations operate independently of each other in most matters, they do share in each others' losses. This was the case in 1987/88 when revenues from the Virginia-Carolina region and the Southeast were used to offset losses in the Southwest.

## Program Effects

Peanut farmers voted in 1986 to approve the peanut program, thus making it mandatory with direct effects on producers, consumers, and taxpayers. The program also has indirect effects on the allocation and prices of resources.

### Producers

Peanuts have been under a marketing quota longer than any other crop, except tobacco. As a result, peanut producers concentrated on maximizing returns from their allotment. Support prices were tied to parity before 1978 and a legislated minimum acreage allotment applied before 1982. Growing peanuts was profitable under the peanut program in effect before 1978. Before the 1977 Act, few marketing decisions were required of the producer, who was paid the support price when peanuts were delivered to the warehouse or buying point. The production of additional peanuts under the 1977, 1981, and 1985 Acts and the price effects from the 1980, 1986, and 1987 droughts have made producers more market conscious.

USDA does not report separate prices received by farmers for quota and additional peanuts. The quota support rate, the minimum price that domestic manufacturers have to pay for edible use, has consistently been above the average contract price for additionals. For example, the average contract price for additional peanuts for export for the 1985-87 crops is estimated to be about $285 per ton, or $300 per ton lower than the average quota support rate.

It is a common practice for growers to market both quota and additional peanuts on a ratio basis. That is, growers sell their additionals and quota peanuts to the same buyer, negotiating both the quantity ratio and the prices of each. Typical ratios have been 3:1 and 1:1, quota peanuts to additional peanuts. Such contracts make it difficult to measure the actual price or revenue a grower receives for additional and quota peanuts. Furthermore, growers may place their additionals under loan and, depending on the performance of the loan pools, eventually receive more than the additional support price.

Estimating the price of peanuts in the absence of a program is difficult because peanuts have been under a program for so long. However, an approximation might be the per-unit total economic costs, which represent the breakeven longrun average price necessary to continue producing a crop. The 1985-87 average total economic costs for peanuts were about $410 a ton, or $183 lower than the $591-a-ton quota support rate. This is only an approximation of a nonprogram price because the cost estimates are based on behavior under the program where the location of production is largely determined by the historical quota allocations and because changes in trade have not been included.

Since the peanut program is mandatory, if approved in a referendum, the benefits of the high support accrue to all quota holders on the basis of their quota size. Program benefits accrue to quota holders whether or not they produce peanuts because farm quotas may be rented to other growers. According to a 1982 peanut cost of production survey, about half of the quota is owned and half rented. Quota rents vary widely among the production areas but had an estimated rental value of about 7.6 cents per pound in the Southeast in 1987 and 5 cents a pound in the other regions.

Over several decades, peanuts have become less and less competitive in the oil and meal markets and

the edible market has become more important as the only outlet that can absorb peanuts at the support price.

### Consumers

Assuming that the domestic price for peanuts for edible use is about $183 per ton above the longrun breakeven cost, U.S. consumers paid annually about $190 million more for farmers' stock peanuts to be used in domestic food products in 1985/86 to 1987/88. The high peanut support rates are reflected in higher consumer prices for peanut butter, peanut candy, peanut butter sandwiches, salted peanuts, and roasted peanuts, in-shell.

### Taxpayers

Since 1962, CCC net farm-related program expenditures have totaled nearly $1 billion, an average of about $40 million per year (app. table 4). Annual net CCC farm-related expenditures for the peanut program averaged $30 million in the 1960's, $62 million in the 1970's, and $10 million in the 1980's. The high program outlays in the mid-1970's reflect an administrative decision to only sell loan peanuts for at least the quota loan rate plus handling charges. Under the current peanut program, the cost to taxpayers should be minimal because the national poundage quota is set based on expected demand. Also, the additional loan rate is substantially below the export market price for edible peanuts and below the current crush value. As long as domestic demand equals or exceeds the quota, taxpayer costs should remain small.

### Indirect

The value of peanut allotments was capitalized into the value of the land originally assigned the historical allotment, giving these areas a higher tax base and the original recipients a value transfer. The sale or lease of acreage allotments within a given county was authorized starting with the 1968 crop. Allotments were discontinued under the 1981 Act, but the poundage quotas that were assigned to allotment holders under the 1977 Act were continued. The value of the original allotments are now reflected in the poundage quotas. The 1982-87 average sale price per pound for peanut quota ranged from 13.5 cents in Oklahoma to 33.8 cents in Georgia. The quota value increases the cost of entry for new producers who plan to grow quota peanuts.

Before the 1977 Act, the peanut program limited production to historical growing areas. Now additional peanuts can be grown anywhere, but the poundage quotas are still based on historical allotment areas and, thus, limit shifts in production areas.

The high support prices assured producers a price above the world market price and above production costs. Producers quickly adapted economical yield-enhancing production practices because they did not face the risk of falling prices during the growing season.

## Issues

Several issues will be debated in connection with legislation to succeed the 1985 Act that expires with the 1990 crop. If no new legislation is passed, the peanut program will revert to the provisions of permanent legislation. This would entail a return to the allotment system (restrictions on production) and parity-based price supports. Under current conditions, the immediate result would be surplus production and high Government costs. An important issue under reversion to permanent legislation would be the granting of an exclusive right to a high price support to historical holders of an allotment or quota.

Several issues are raised by proposals to continue the current two-tier poundage quota program:

- What would be the effects of further adjustments of the poundage quotas? Should the level of peanut stocks be considered when setting the national poundage quota?
- What would be the effects of different support price levels (for both quota and additional peanuts)? Government cost, consumer costs, and grower returns would be affected by this decision.
- What would be the effects of changing, eliminating, or keeping the contract deadline for additional peanuts for export?
- Should sales of poundage quotas across county and State lines be allowed?
- Can the peanut program with its Section 22 import quota be retained and trade liberalization goals achieved?

Another possibility is to include peanuts under a more general farm program, such as the soybean program. Poundage quotas could be eliminated, and a one-price level for peanuts based on world supply and demand conditions could evolve. Import quotas and export

restrictions to Canada and Mexico could also be eliminated.

An alternative is to eliminate or phase out the program entirely, leaving market forces to determine the size and location of domestic peanut production.

## Additional Readings


Dunmore, John, and James Longmire. *Sources of Recent Changes in U.S. Agricultural Exports.* Staff Report AGES831219. U.S. Dept. Agr., Econ. Res. Serv., Jan. 1984.

Fabre, Raymond, and Randal R. Rucker. *Lease Rates and Sale Prices for Peanut Poundage Quota: 1978-1987.* EIR No. 78. Dept. of Econ. and Bus., North Carolina State Univ., Feb. 1989.

Gardner, Bruce L. *The Governing of Agriculture.* Lawrence: Regents Press of Kansas, 1981.

Glaser, Lewrene. *Provisions of the Food Security Act of 1985.* AIB-498. U.S. Dept. Agr., Econ. Res. Serv., Apr. 1986.

Halcrow, Harold G. *Agricultural Policy Analysis.* New York: McGraw-Hill Book Co., 1984.

Johnson, James, Richard N. Rizzi, Sara D. Short, and Thomas R. Fulton. *Provisions of the Agriculture and Food Act of 1981.* Staff Report AGES811228. U.S. Dept. Agr., Econ. Res. Serv., Jan. 1982.

Knutson, Ronald D., J.B. Penn, and William T. Boehm. *Agricultural and Food Policy.* Englewood Cliffs, NJ: Prentice-Hall Inc., 1983.

McArthur, W.C., Verner Grise, Harry Doty, and Duane Hacklander. *U.S. Peanut Industry.* AER-493. U.S. Dept. Agr., Econ. Res. Serv., Nov. 1982.

Miller, Bill R. *Peanut Policy Issues for the 1981 Farm Bill: The Export Market.* Special Publ. No. 11. Univ. of Georgia College of Agr. Exp. Sta., Feb. 1981.

_____. *Peanut Policy Issues for the 1981 Farm Bill: The Role of the Commodity Credit Corporation in Peanut Oil Markets and Agriculture Policy.* Special Publ. No. 12. Univ. of Georgia College of Agr. Exp. Sta., Mar. 1981.

_____. *Peanut Policy Issues for the 1981 Farm Bill: Market Power and Price Discovery.* Special Publ. No. 15. Univ. of Georgia College of Agr. Exp. Sta., July 1981.

Rasmussen, Wayne, and Gladys L. Baker. *Price-Support and Adjustment Programs from 1933 through 1978: A Short History.* AIB-424. U.S. Dept Agr., Econ. Res. Serv., Feb. 1979.

Schaub, James D. "The Peanut Program and Its Effects," *National Food Review.* U.S. Dept. Agr., Econ. Res. Serv., Vol. 11, Issue 3, 1988.

U.S. Department of Agriculture, Economic Research Service. *Economic Indicators of the Farm Sector: Costs of Production, 1987.* ECIFS 7-3. Feb. 1989.

_____. Economic Research Service. *Oil Crops Outlook and Situation.* OCS-21. Apr. 1989.

_____. Economic Research Service. *Peanuts: Background for 1985 Farm Legislation.* AIB-469. Sept. 1984.

_____. Foreign Agricultural Service. *World Oilseed Situation and Market Highlights.* FOP 10-88. Oct. 1988.

Vertrees, James, and Andrew Morton. *Crop Price-Support Programs: Policy Options for Contemporary Agriculture.* U.S. Congress, Congressional Budget Office, Feb. 1984.

**Appendix table 1—U.S. peanut acreage, yield, and production, 1950–88**

| Year | Planted | Harvested | Yield | Production |
|---|---|---|---|---|
| | *Million acres* | | *Pounds per acre* | *Million pounds* |
| 1950 | 2.63 | 2.27 | 898 | 2,035 |
| 1951 | 2.51 | 1.98 | 834 | 1,679 |
| 1952 | 1.84 | 1.44 | 936 | 1,356 |
| 1953 | 1.80 | 1.52 | 1,040 | 1,574 |
| 1954 | 1.82 | 1.39 | 727 | 1,008 |
| 1955 | 1.88 | 1.67 | 925 | 1,548 |
| 1956 | 1.83 | 1.38 | 1,161 | 1,607 |
| 1957 | 1.75 | 1.48 | 970 | 1,436 |
| 1958 | 1.70 | 1.52 | 1,205 | 1,814 |
| 1959 | 1.58 | 1.44 | 1,097 | 1,523 |
| 1960 | 1.53 | 1.40 | 1,232 | 1,718 |
| 1961 | 1.52 | 1.40 | 1,185 | 1,657 |
| 1962 | 1.51 | 1.40 | 1,228 | 1,719 |
| 1963 | 1.50 | 1.40 | 1,391 | 1,942 |
| 1964 | 1.49 | 1.40 | 1,502 | 2,099 |
| 1965 | 1.52 | 1.44 | 1,661 | 2,390 |
| 1966 | 1.49 | 1.42 | 1,700 | 2,416 |
| 1967 | 1.47 | 1.40 | 1,765 | 2,477 |
| 1968 | 1.50 | 1.44 | 1,770 | 2,547 |
| 1969 | 1.51 | 1.46 | 1,742 | 2,535 |
| 1970 | 1.52 | 1.47 | 2,030 | 2,983 |
| 1971 | 1.53 | 1.45 | 2,066 | 3,005 |
| 1972 | 1.53 | 1.49 | 2,203 | 3,275 |
| 1973 | 1.53 | 1.50 | 2,323 | 3,474 |
| 1974 | 1.52 | 1.47 | 2,491 | 3,668 |
| 1975 | 1.53 | 1.50 | 2,564 | 3,847 |
| 1976 | 1.55 | 1.52 | 2,464 | 3,739 |
| 1977 | 1.54 | 1.51 | 2,456 | 3,715 |
| 1978 | 1.54 | 1.51 | 2,619 | 3,952 |
| 1979 | 1.55 | 1.52 | 2,611 | 3,968 |
| 1980 | 1.52 | 1.40 | 1,645 | 2,303 |
| 1981 | 1.51 | 1.49 | 2,675 | 3,982 |
| 1982 | 1.31 | 1.28 | 2,696 | 3,440 |
| 1983 | 1.41 | 1.37 | 2,399 | 3,296 |
| 1984 | 1.56 | 1.53 | 2,878 | 4,406 |
| 1985 | 1.49 | 1.47 | 2,810 | 4,123 |
| 1986 | 1.57 | 1.54 | 2,407 | 3,701 |
| 1987 | 1.57 | 1.55 | 2,341 | 3,619 |
| 1988 | 1.64 | 1.61 | 2,445 | 3,981 |

**Appendix table 2—U.S. peanut use and ending stocks, 1950–87**

| Year beginning August 1 | Food | Crush | Exports | Seed, feed, and residual | Total use | Ending stocks | Stocks-to-use ratio |
|---|---|---|---|---|---|---|---|
| | *Million pounds* | | | | | | *Percent* |
| 1950 | 981 | 629 | 69 | 211 | 1,890 | 332 | 17.6 |
| 1951 | 1,015 | 432 | 8 | 120 | 1,575 | 416 | 26.4 |
| 1952 | 1,008 | 195 | 3 | 144 | 1,350 | 422 | 31.3 |
| 1953 | 1,017 | 303 | 239 | 151 | 1,710 | 286 | 16.7 |
| 1954 | 1,019 | 107 | 9 | 130 | 1,265 | 209 | 16.5 |
| 1955 | 955 | 257 | 6 | 157 | 1,375 | 387 | 28.1 |
| 1956 | 1,029 | 260 | 102 | 152 | 1,543 | 456 | 29.6 |
| 1957 | 1,084 | 239 | 48 | 162 | 1,533 | 361 | 23.5 |
| 1958 | 1,096 | 335 | 62 | 170 | 1,663 | 514 | 30.9 |
| 1959 | 1,154 | 292 | 72 | 96 | 1,614 | 424 | 26.3 |
| 1960 | 1,244 | 362 | 81 | 87 | 1,774 | 368 | 20.7 |
| 1961 | 1,265 | 256 | 34 | 84 | 1,639 | 389 | 23.7 |
| 1962 | 1,293 | 302 | 43 | 75 | 1,713 | 397 | 23.2 |
| 1963 | 1,347 | 380 | 97 | 107 | 1,931 | 410 | 21.2 |
| 1964 | 1,411 | 473 | 179 | 75 | 2,138 | 373 | 17.4 |
| 1965 | 1,445 | 517 | 238 | 153 | 2,353 | 412 | 17.5 |
| 1966 | 1,420 | 587 | 222 | 229 | 2,458 | 372 | 15.1 |
| 1967 | 1,419 | 644 | 198 | 236 | 2,497 | 353 | 14.1 |
| 1968 | 1,467 | 654 | 105 | 319 | 2,543 | 357 | 14.0 |
| 1969 | 1,498 | 581 | 140 | 321 | 2,539 | 353 | 13.9 |
| 1970 | 1,518 | 799 | 290 | 277 | 2,884 | 453 | 15.7 |
| 1971 | 1,515 | 814 | 552 | 187 | 3,068 | 392 | 12.8 |
| 1972 | 1,612 | 850 | 521 | 257 | 3,240 | 429 | 13.2 |
| 1973 | 1,712 | 683 | 709 | 247 | 3,351 | 553 | 16.5 |
| 1974 | 1,664 | 590 | 740 | 82 | 3,076 | 1,146 | 37.3 |
| 1975 | 1,749 | 1,447 | 434 | 313 | 3,934 | 1,060 | 26.9 |
| 1976 | 1,635 | 1,108 | 783 | 666 | 4,192 | 608 | 14.5 |
| 1977 | 1,675 | 487 | 1,025 | 556 | 3,743 | 581 | 15.5 |
| 1978 | 1,759 | 527 | 1,141 | 521 | 3,948 | 586 | 14.8 |
| 1979 | 1,777 | 571 | 1,057 | 522 | 3,927 | 628 | 16.0 |
| 1980 | 1,465 | 446 | 503 | 505 | 2,919 | 413 | 14.1 |
| 1981 | 1,696 | 573 | 576 | 795 | 3,640 | 757 | 20.8 |
| 1982 | 1,849 | 342 | 681 | 463 | 3,335 | 864 | 25.9 |
| 1983 | 1,856 | 387 | 774 | 564 | 3,551 | 611 | 17.2 |
| 1984 | 1,911 | 625 | 860 | 199 | 3,595 | 1,424 | 39.6 |
| 1985 | 2,023 | 812 | 1,043 | 826 | 4,704 | 845 | 18.0 |
| 1986 | 2,073 | 514 | 663 | 294 | 3,545 | 1,003 | 28.3 |
| 1987 | 2,071 | 560 | 618 | 543 | 3,792 | 833 | 21.9 |

**Appendix table 3—Peanut prices and ending stocks, 1950–87**

| Year | Ending stocks | | | Price received by farmers | Loan rate | | Export [2] |
|---|---|---|---|---|---|---|---|
| | CCC | Free [1] | Total | | Quota | Nonquota | |
| | *Million pounds* | | | *Cents per pound* | | | |
| 1950 | 7 | 325 | 332 | 10.9 | 10.80 | — | — |
| 1951 | 142 | 274 | 416 | 10.4 | 11.50 | — | — |
| 1952 | 92 | 330 | 422 | 10.9 | 12.00 | — | — |
| 1953 | 30 | 256 | 286 | 11.1 | 11.90 | — | — |
| 1954 | 0 | 209 | 209 | 12.2 | 12.20 | — | — |
| 1955 | 37 | 250 | 387 | 11.7 | 12.20 | — | — |
| 1956 | 151 | 305 | 456 | 11.2 | 11.40 | — | — |
| 1957 | 118 | 243 | 361 | 10.4 | 11.10 | — | — |
| 1958 | 196 | 318 | 514 | 10.6 | 10.66 | — | — |
| 1959 | 172 | 252 | 424 | 9.6 | 9.68 | — | — |
| 1960 | 103 | 265 | 368 | 10.0 | 10.06 | — | — |
| 1961 | 70 | 319 | 389 | 10.9 | 11.05 | — | — |
| 1962 | 105 | 292 | 397 | 11.0 | 11.07 | — | — |
| 1963 | 106 | 304 | 410 | 11.2 | 11.20 | — | — |
| 1964 | 65 | 308 | 373 | 11.2 | 11.20 | — | — |
| 1965 | 89 | 323 | 412 | 11.4 | 11.20 | — | — |
| 1966 | 114 | 258 | 372 | 11.3 | 11.35 | — | — |
| 1967 | 12 | 341 | 353 | 11.4 | 11.35 | — | — |
| 1968 | 0 | 357 | 357 | 11.9 | 12.01 | — | — |
| 1969 | 0 | 353 | 353 | 12.3 | 12.38 | — | — |
| 1970 | 11 | 442 | 453 | 12.8 | 12.75 | — | — |
| 1971 | 4 | 388 | 392 | 13.6 | 13.42 | — | — |
| 1972 | 24 | 405 | 429 | 14.5 | 14.25 | — | — |
| 1973 | 0 | 553 | 553 | 16.2 | 16.43 | — | — |
| 1974 | 552 | 594 | 1,146 | 17.9 | 18.30 | — | — |
| 1975 | 958 | 102 | 1,060 | 19.6 | 19.73 | — | — |
| 1976 | 0 | 608 | 608 | 20.0 | 20.70 | — | — |
| 1977 | 2 | 579 | 581 | 21.0 | 21.53 | — | — |
| 1978 | 0 | 586 | 586 | 21.1 | 21.00 | 12.50 | 20.00 |
| 1979 | 0 | 628 | 628 | 20.6 | 21.00 | 15.00 | 20.00 |
| 1980 | 0 | 413 | 413 | 25.2 | 22.75 | 12.50 | 21.75 |
| 1981 | 2 | 755 | 757 | 26.8 | 22.75 | 12.50 | 21.75 |
| 1982 | 0 | 864 | 864 | 25.1 | 27.50 | 10.00 | 23.70 |
| 1983 | 0 | 611 | 611 | 24.7 | 27.50 | 9.25 | 20.00 |
| 1984 | 0 | 1,424 | 1,424 | 27.9 | 27.50 | 9.25 | 21.25 |
| 1985 | 0 | 845 | 845 | 24.3 | 27.95 | 7.40 | 21.25 |
| 1986 | 0 | 1,003 | 1,003 | 29.2 | 30.37 | 7.49 | 20.00 |
| 1987 | 0 | 833 | 833 | 28.0 | 30.37 | 7.49 | 20.00 |

— = Not applicable.
[1] Basically commercial stocks.
[2] Minimum export price for CCC nonquota peanuts.

**Appendix table 4—CCC net farm-related peanut program expenditures, 1962–87**

| Fiscal year | Loan operations | | Net price support and related expenditures [1] |
|---|---|---|---|
| | Outlays | Repayments | |
| | | *Million dollars* | |
| 1962 | 47.8 | 37.1 | 10.7 |
| 1963 | 65.4 | 43.5 | 21.9 |
| 1964 | 52.8 | 24.5 | 28.3 |
| 1965 | 70.9 | 44.1 | 26.8 |
| 1966 | 85.4 | 39.1 | 46.3 |
| 1967 | 92.5 | 45.6 | 46.9 |
| 1968 | 81.5 | 45.6 | 35.9 |
| 1969 | 86.0 | 46.9 | 39.1 |
| 1970 | 80.6 | 45.8 | 34.8 |
| 1971 | 146.4 | 75.5 | 70.9 |
| 1972 | 179.9 | 83.4 | 96.5 |
| 1973 | 185.6 | 130.3 | 55.3 |
| 1974 | 174.5 | 170.5 | 4.0 |
| 1975 | 201.3 | 80.1 | 121.2 |
| 1976 [2] | 294.3 | 26.5 | 250.4 |
| 1977 | 125.6 | 126.4 | (.8) |
| 1978 | 109.9 | 149.1 | (39.1) |
| 1979 | 116.1 | 89.4 | 26.7 |
| 1980 | 115.6 | 87.7 | 27.8 |
| 1981 | 78.2 | 50.4 | 27.8 |
| 1982 | 153.4 | 141.2 | 12.2 |
| 1983 | 76.0 | 82.3 | (6.2) |
| 1984 | 68.7 | 67.5 | 1.2 |
| 1985 | 168.0 | 155.8 | 12.2 |
| 1986 | 214.6 | 182.2 | 32.4 |
| 1987 | 31.5 | 23.2 | 8.3 |

[1] Loans and purchases, storage and handling expenses, and other outlays less sales proceeds, loan repayments, and other receipts, excluding PL 480 commodity costs. Parentheses indicate net receipts.

[2] Includes July–September 1976 to allow for shift from July/June to October/September fiscal years.

**Appendix table 5—World peanut supply and disappearance, 1983–87** [1]

| Item | 1983/84 | 1984/85 | 1985/86 | 1986/87 | 1987/88 |
|---|---|---|---|---|---|
| | | | *1,000 metric tons* | | |
| Production: | | | | | |
| India | 7,086 | 6,436 | 5,120 | 6,060 | 4,800 |
| China | 3,951 | 4,815 | 6,664 | 5,882 | 6,170 |
| United States | 1,495 | 1,998 | 1,870 | 1,679 | 1,642 |
| Senegal | 568 | 560 | 587 | 842 | 963 |
| Indonesia | 747 | 755 | 780 | 750 | 780 |
| Burma | 532 | 667 | 560 | 544 | 559 |
| Nigeria | 591 | 500 | 400 | 400 | 475 |
| Argentina | 329 | 270 | 439 | 518 | 450 |
| Sudan | 413 | 390 | 275 | 450 | 400 |
| Zaire | 367 | 375 | 375 | 380 | 380 |
| South Africa, Rep. of | 72 | 196 | 111 | 119 | 207 |
| Other | 2,576 | 2,720 | 2,754 | 2,828 | 2,935 |
| Total | 18,727 | 19,682 | 19,935 | 20,452 | 19,761 |
| Imports: | | | | | |
| EC–12 | 506 | 525 | 586 | 562 | 577 |
| Netherlands | 125 | 142 | 149 | 177 | 199 |
| United Kingdom | 106 | 130 | 178 | 147 | 145 |
| Germany, Fed. Rep. of | 76 | 99 | 106 | 111 | 111 |
| France | 117 | 85 | 81 | 51 | 50 |
| Italy | 41 | 31 | 34 | 32 | 33 |
| Spain | 25 | 28 | 30 | 29 | 25 |
| Japan | 118 | 108 | 126 | 114 | 130 |
| Canada | 91 | 91 | 101 | 107 | 105 |
| USSR | 67 | 79 | 88 | 86 | 80 |
| Singapore | 36 | 57 | 75 | 75 | 80 |
| Hong Kong | 27 | 36 | 76 | 72 | 75 |
| Indonesia | 30 | 24 | 49 | 66 | 65 |
| Switzerland | 23 | 27 | 33 | 40 | 35 |
| Other | 122 | 124 | 154 | 158 | 146 |
| Total | 1,020 | 1,071 | 1,288 | 1,280 | 1,293 |
| Exports: | | | | | |
| United States | 337 | 390 | 473 | 301 | 280 |
| China | 209 | 213 | 332 | 398 | 359 |
| Argentina | 121 | 117 | 186 | 170 | 160 |
| Sudan | 51 | 15 | 11 | 10 | 75 |
| India | 60 | 40 | 15 | 40 | 10 |
| South Africa, Rep. of | 6 | 47 | 21 | 1 | 37 |
| Gambia | 34 | 33 | 25 | 40 | 55 |
| Brazil | 12 | 20 | 12 | 8 | 8 |
| Paraguay | 6 | 17 | 18 | 23 | 19 |
| Vietnam | 33 | 35 | 45 | 40 | 40 |
| Malawi | 2 | 13 | 20 | 20 | 42 |
| Other | 132 | 157 | 207 | 215 | 224 |
| Total | 1,003 | 1,097 | 1,365 | 1,266 | 1,309 |
| Crush: | | | | | |
| India | 5,544 | 5,241 | 4,210 | 4,840 | 3,854 |
| China | 1,954 | 2,532 | 3,482 | 3,015 | 3,219 |
| Senegal | 285 | 185 | 284 | 500 | 640 |
| Burma | 426 | 534 | 443 | 435 | 447 |
| United States | 176 | 283 | 369 | 233 | 254 |
| Nigeria | 227 | 210 | 174 | 184 | 212 |
| Argentina | 123 | 129 | 142 | 350 | 249 |
| EC–12 | 95 | 75 | 52 | 31 | 30 |
| Other | 1,285 | 1,396 | 1,253 | 1,336 | 1,367 |
| Total | 10,115 | 10,585 | 10,414 | 10,924 | 10,272 |
| Food: | | | | | |
| China | 1,474 | 1,703 | 2,342 | 2,010 | 2,146 |
| United States | 835 | 858 | 895 | 940 | 939 |
| Indonesia | 643 | 650 | 691 | 687 | 706 |
| India | 461 | 418 | 330 | 390 | 310 |
| Zaire | 219 | 224 | 224 | 229 | 229 |
| Senegal | 187 | 275 | 181 | 222 | 207 |
| Japan | 139 | 135 | 144 | 139 | 145 |
| EC–12 | 369 | 402 | 450 | 498 | 490 |
| Other | 2,130 | 2,165 | 2,207 | 2,470 | 2,541 |
| Total | 6,457 | 6,830 | 7,464 | 7,585 | 7,713 |

[1] Local marketing years.

**Appendix table 6—World peanut meal supply and disappearance, 1983–87** [1]

| Item | 1983/84 | 1984/85 | 1985/86 | 1986/87 | 1987/88 |
|---|---|---|---|---|---|
| | | | *1,000 metric tons* | | |
| Production: | | | | | |
| India | 2,328 | 2,201 | 1,768 | 2,033 | 1,618 |
| China | 782 | 1,013 | 1,393 | 1,206 | 1,288 |
| Senegal | 107 | 68 | 109 | 200 | 256 |
| Burma | 164 | 205 | 170 | 165 | 169 |
| United States | 72 | 120 | 152 | 98 | 104 |
| Nigeria | 87 | 81 | 67 | 70 | 82 |
| Argentina | 48 | 52 | 58 | 144 | 100 |
| EC–12 | 39 | 30 | 21 | 13 | 9 |
| Other | 490 | 554 | 477 | 512 | 520 |
| Total | 4,117 | 4,324 | 4,215 | 4,441 | 4,146 |
| Imports: | | | | | |
| Eastern Europe | 274 | 204 | 179 | 379 | 310 |
| Poland | 194 | 121 | 138 | 269 | 250 |
| German Democratic Rep. | 10 | 28 | 21 | 40 | 20 |
| Czechoslovakia | 70 | 55 | 20 | 70 | 40 |
| EC–12 | 253 | 167 | 203 | 241 | 232 |
| France | 23 | 37 | 75 | 93 | 103 |
| Netherlands | 30 | 41 | 41 | 68 | 60 |
| USSR | 27 | 31 | 43 | 50 | 40 |
| Thailand | 2 | 2 | 33 | 35 | 50 |
| Other | 41 | 19 | 66 | 44 | 55 |
| Total | 597 | 423 | 524 | 749 | 687 |
| Exports: | | | | | |
| India | 300 | 225 | 200 | 300 | 250 |
| Senegal | 89 | 67 | 105 | 190 | 243 |
| Sudan | 57 | 50 | 40 | 50 | 60 |
| China | 11 | 8 | 94 | 90 | 50 |
| Argentina | 28 | 30 | 22 | 40 | 45 |
| EC–12 | 36 | 12 | 14 | 13 | 16 |
| Other | 45 | 69 | 53 | 34 | 35 |
| Total | 566 | 461 | 528 | 717 | 699 |
| Consumption: | | | | | |
| India | 2,028 | 1,976 | 1,568 | 1,733 | 1,368 |
| China | 77 | 1,005 | 1,299 | 1,116 | 1,238 |
| Eastern Europe | 277 | 207 | 183 | 382 | 313 |
| Poland | 194 | 121 | 138 | 269 | 250 |
| Czechoslovakia | 73 | 58 | 24 | 73 | 43 |
| German Democratic Rep. | 10 | 28 | 21 | 40 | 20 |
| Burma | 164 | 205 | 170 | 165 | 169 |
| United States | 68 | 111 | 158 | 98 | 99 |
| EC–12 | 253 | 186 | 218 | 234 | 227 |
| France | 38 | 55 | 96 | 94 | 104 |
| Netherlands | 10 | 33 | 32 | 65 | 50 |
| Nigeria | 87 | 81 | 67 | 70 | 82 |
| Thailand | 17 | 14 | 45 | 47 | 61 |
| USSR | 27 | 31 | 43 | 50 | 40 |
| Other | 451 | 448 | 481 | 541 | 550 |
| Total | 4,143 | 4,264 | 4,232 | 4,436 | 4,147 |

[1] Local marketing years.

**Appendix table 7—World peanut oil supply and disappearance, 1983–87** [1]

| Item | 1983/84 | 1984/85 | 1985/86 | 1986/87 | 1987/88 |
|---|---|---|---|---|---|
| | | | *1,000 metric tons* | | |
| Production: | | | | | |
| India | 1,608 | 1,520 | 1,221 | 1,404 | 1,119 |
| China | 490 | 632 | 871 | 754 | 805 |
| Senegal | 94 | 56 | 93 | 165 | 211 |
| Burma | 136 | 171 | 143 | 139 | 143 |
| United States | 5484 | | 117 | 72 | 79 |
| Nigeria | 73 | 67 | 56 | 59 | 68 |
| Argentina | 31 | 32 | 37 | 94 | 64 |
| EC–12 | 40 | 24 | 17 | 12 | 9 |
| Other | 400 | 449 | 387 | 418 | 429 |
| Total | 2,926 | 3,035 | 2,942 | 3,117 | 2,927 |
| Imports: | | | | | |
| EC–12 | 279 | 244 | 238 | 260 | 269 |
| France | 154 | 122 | 121 | 131 | 134 |
| Italy | 31 | 37 | 37 | 42 | 45 |
| Germany, Fed. Rep. of | 22 | 21 | 19 | 14 | 16 |
| Netherlands | 20 | 12 | 9 | 14 | 19 |
| United Kingdom | 10 | 10 | 10 | 11 | 12 |
| Hong Kong | 25 | 32 | 31 | 35 | 25 |
| Switzerland | 10 | 10 | 10 | 10 | 10 |
| Singapore | 0 | 0 | 6 | 6 | 5 |
| United States | 0 | 0 | 1 | 5 | 15 |
| Other | 29 | 27 | 11 | 8 | 10 |
| Total | 343 | 313 | 297 | 324 | 334 |
| Exports: | | | | | |
| Senegal | 92 | 42 | 81 | 100 | 136 |
| China | 49 | 40 | 80 | 80 | 60 |
| Argentina | 30 | 28 | 33 | 77 | 55 |
| Brazil | 26 | 79 | 14 | 34 | 30 |
| EC–12 | 62 | 45 | 43 | 37 | 43 |
| Belgium-Luxembourg | 26 | 25 | 25 | 25 | 25 |
| France | 11 | 6 | 8 | 6 | 9 |
| Netherlands | 18 | 10 | 7 | 5 | 5 |
| South Africa, Rep. of | 0 | 6 | 13 | 0 | 11 |
| United States | 3 | 13 | 42 | 3 | 3 |
| Other | 33 | 21 | 24 | 22 | 23 |
| Total | 295 | 274 | 330 | 353 | 361 |
| Consumption: | | | | | |
| India | 1,608 | 1,520 | 1,221 | 1,404 | 1,119 |
| China | 441 | 592 | 791 | 674 | 745 |
| Burma | 136 | 171 | 143 | 139 | 143 |
| EC–12 | 254 | 226 | 212 | 233 | 239 |
| France | 173 | 138 | 126 | 127 | 128 |
| Italy | 30 | 38 | 38 | 45 | 48 |
| United States | 51 | 78 | 57 | 81 | 91 |
| Nigeria | 77 | 78 | 56 | 59 | 68 |
| Sudan | 41 | 52 | 35 | 58 | 55 |
| Senegal | 2 | 14 | 12 | 65 | 75 |
| Zaire | 40 | 41 | 41 | 41 | 41 |
| Hong Kong | 23 | 30 | 28 | 32 | 20 |
| Other | 297 | 283 | 277 | 307 | 320 |
| Total | 2,970 | 3,085 | 2,873 | 3,093 | 2,916 |

[1] Local marketing years.

**Appendix table 8—U.S. peanut exports, 1983–87** [1] [2]

| Country | 1983/84 | 1984/85 | 1985/86 | 1986/87 | 1987/88 |
|---|---|---|---|---|---|
| | | | *Metric tons* | | |
| Greece | 23 | 108 | 0 | 35 | 0 |
| Belgium-Luxembourg | 1,295 | 3,385 | 4,848 | 1,362 | 1,375 |
| Denmark | 3 | 33 | 20 | 6 | 18 |
| France | 29,934 | 25,999 | 11,668 | 3,590 | 2,871 |
| Germany, Fed. Rep. of | 6,796 | 11,466 | 12,152 | 11,348 | 18,129 |
| Ireland | 1 | 0 | 100 | 153 | 315 |
| Italy | 2,336 | 7,340 | 5,126 | 4,105 | 2,882 |
| Netherlands | 46,132 | 55,120 | 107,845 | 69,757 | 74,090 |
| United Kingdom | 50,428 | 61,709 | 60,527 | 44,522 | 36,171 |
| Portugal | 16 | 108 | 40 | 2,688 | 1,807 |
| Spain | 6,103 | 7,614 | 10,883 | 9,723 | 10,092 |
| Total EC | 143,079 | 172,882 | 213,209 | 147,289 | 147,750 |
| Canada | 63,642 | 57,494 | 55,946 | 41,888 | 30,748 |
| Japan | 25,691 | 27,399 | 30,765 | 21,487 | 16,835 |
| Mexico | 34 | 2,263 | 858 | 86 | 2,221 |
| Norway | 2,137 | 3,713 | 2,083 | 1,918 | 2,366 |
| Panama | 279 | 216 | 247 | 140 | 106 |
| Sweden | 1,874 | 1,484 | 1,792 | 3,071 | 3,304 |
| Switzerland | 6,495 | 4,125 | 6,700 | 4,785 | 579 |
| Trinidad-Tobago | 2,426 | 2,013 | 2,195 | 685 | 528 |
| Venezuela | 127 | 4 | 0 | 31 | 164 |
| New Zealand | 2,145 | 4,174 | 3,451 | 1,625 | 2,350 |
| Australia | 3,236 | 706 | 766 | 376 | 595 |
| Nigeria | 0 | 11,087 | 33,828 | 0 | 0 |
| Other | 2,656 | 5,920 | 4,004 | 2,835 | 3,292 |
| Total | 253,821 | 293,480 | 355,844 | 226,216 | 210,838 |

[1] August–July marketing year.
[2] Includes all export kernel categories (edible kernels, in-shell, prepared and preserved, and oilstock) converted to shelled-weight basis.

**Appendix table 9—U.S. peanut oil exports, 1982–87** [1] [2]

| Country | 1982/83 | 1983/84 | 1984/85 | 1985/86 | 1986/87 | 1987/88 |
|---|---|---|---|---|---|---|
| | | | | *Metric tons* | | |
| France | 1,000 | 0 | 0 | 5,294 | 0 | 0 |
| Germany, Fed. Rep. of | 0 | 0 | 0 | 0 | 3 | 0 |
| Italy | 0 | 0 | 830 | 12,716 | 0 | 0 |
| Netherlands | 17 | 40 | 1,552 | 10,978 | 0 | 0 |
| United Kingdom | 0 | 1,059 | 3,346 | 5,198 | 0 | 0 |
| Spain | 0 | 1 | 0 | 0 | 0 | 0 |
| Total EC | 1,017 | 1,100 | 5,728 | 4,186 | 3 | 0 |
| Canada | 1,191 | 751 | 1,128 | 1,787 | 1,818 | 1,917 |
| Hong Kong | 0 | 101 | 543 | 5,180 | 968 | 731 |
| Malaysia | 0 | 4 | 43 | 1 | 0 | 327 |
| Switzerland | 0 | 0 | 5,825 | 0 | 0 | 0 |
| Sweden | 0 | 582 | 0 | 0 | 0 | 0 |
| Other | 142 | 681 | 61 | 939 | 122 | 164 |
| Total | 2,350 | 3,219 | 13,328 | 42,093 | 2,911 | 3,199 |

[1] August–July marketing year.
[2] Crude and refined oil combined.

**Appendix table 10—U.S. exports of peanuts and peanut products [1] [2]**

| Item | 1983/84 | 1984/85 | 1985/86 | 1986/87 | 1987/88 |
|---|---|---|---|---|---|
| | | | *Metric tons* | | |
| Shelled, for oil stock | 41,957 | 38,270 | 68,148 | 11,688 | 6,902 |
| Shelled, not for oil stock | 185,830 | 219,581 | 235,179 | 170,151 | 153,169 |
| Prepared and preserved, blanched | 3,391 | 6,464 | 17,105 | 15,894 | 19,806 |
| Prepared and preserved, excluding blanched | 4,467 | 4,363 | 6,921 | 2,735 | 4,988 |
| In-shell | 13,441 | 24,803 | 28,490 | 25,748 | 25,973 |
| Total peanuts | 253,821 | 293,480 | 355,844 | 226,216 | 210,838 |
| Crude peanut oil | 3,055 | 12,792 | 37,743 | 2,391 | 2,384 |
| Refined peanut oil | 164 | 536 | 4,350 | 521 | 815 |
| Total peanut oil | 3,219 | 13,328 | 42,093 | 2,912 | 3,199 |
| Peanut butter | 4,575 | 4,571 | 4,505 | 5,866 | 5,854 |

[1] August–July marketing year.
[2] Shelled basis. To convert from in-shell to shelled basis multiply the in-shell weight by 0.7519.

**Appendix table 11—World supply and utilization, major oilseeds, 1982–87 [1]**

| Item | 1982/83 | 1983/84 | 1984/85 | 1985/86 | 1986/87 | 1987/88 |
|---|---|---|---|---|---|---|
| | | | *Million metric tons* | | | |
| Production: | | | | | | |
| Soybean | 93,306 | 82,800 | 93,140 | 97,030 | 97,980 | 103,070 |
| Cottonseed | 27,323 | 26,090 | 33,910 | 30,630 | 27,120 | 30,960 |
| Peanut | 17,630 | 18,400 | 19,680 | 19,990 | 20,270 | 20,390 |
| Sunflowerseed | 16,506 | 15,430 | 17,990 | 19,560 | 19,250 | 20,660 |
| Rapeseed | 15,063 | 14,270 | 16,930 | 18,570 | 19,470 | 23,060 |
| Flaxseed | 2,648 | 2,130 | 2,320 | 2,350 | 2,660 | 2,270 |
| Copra | 4,484 | 3,810 | 4,680 | 5,310 | 4,710 | 4,320 |
| Palm kernel | 1,800 | 1,970 | 2,270 | 2,560 | 2,560 | 2,620 |
| Total | 178,760 | 164,900 | 191,070 | 196,130 | 194,080 | 207,490 |
| Exports: | | | | | | |
| Soybean | 28,506 | 26,140 | 25,270 | 26,070 | 28,560 | 30,050 |
| Cottonseed | 114 | 250 | 290 | 280 | 250 | 280 |
| Peanut | 1,013 | 950 | 1,100 | 1,370 | 1,270 | 1,310 |
| Sunflowerseed | 1,922 | 1,960 | 2,180 | 1,980 | 1,820 | 2,200 |
| Rapeseed | 2,394 | 2,580 | 3,150 | 3,630 | 4,580 | 4,570 |
| Flaxseed | 499 | 680 | 610 | 670 | 710 | 600 |
| Copra | 274 | 290 | 320 | 440 | 320 | 270 |
| Palm kernel | 135 | 180 | 140 | 130 | 130 | 140 |
| Total | 34,857 | 33,030 | 33,060 | 34,550 | 37,710 | 39,510 |
| Imports: | | | | | | |
| Soybean | 27,999 | 25,460 | 25,450 | 27,570 | 29,180 | 28,740 |
| Cottonseed | 114 | 180 | 270 | 260 | 250 | 290 |
| Peanut | 994 | 960 | 1,070 | 1,260 | 1,270 | 1,260 |
| Sunflowerseed | 1,875 | 1,840 | 2,130 | 1,890 | 1,940 | 2,020 |
| Rapeseed | 2,528 | 2,680 | 3,290 | 3,650 | 4,920 | 4,340 |
| Flaxseed | 492 | 610 | 630 | 730 | 800 | 600 |
| Copra | 247 | 250 | 330 | 380 | 330 | 290 |
| Palm kernel | 140 | 110 | 110 | 110 | 120 | 100 |
| Total | 34,389 | 32,090 | 33,280 | 35,850 | 38,800 | 37,630 |
| Crush: | | | | | | |
| Soybean | 77,343 | 71,050 | 73,860 | 77,450 | 85,550 | 84,880 |
| Cottonseed | 21,517 | 21,080 | 26,670 | 23,920 | 21,180 | 23,680 |
| Peanut | 10,727 | 10,030 | 10,590 | 10,460 | 10,790 | 10,530 |
| Sunflowerseed | 14,371 | 13,570 | 15,770 | 16,710 | 16,460 | 17,790 |
| Rapeseed | 14,073 | 13,300 | 15,510 | 16,990 | 18,430 | 20,870 |
| Flaxseed | 2,081 | 2,110 | 1,940 | 1,790 | 1,870 | 1,780 |
| Copra | 4,266 | 3,680 | 4,230 | 5,320 | 4,660 | 4,290 |
| Palm kernel | 1,734 | 1,790 | 2,150 | 2,460 | 2,400 | 2,590 |
| Total | 146,112 | 136,610 | 150,710 | 155,100 | 161,330 | 166,410 |

[1] Trade and crush are aggregated using individual marketing years.

**Appendix table 12—Provisions of peanut programs, 1961–89**

| Provision | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 |
|---|---|---|---|---|---|---|
| Parity price (¢/lb) [1] | 12.90 | 13.50 | 14.00 | 14.10 | 14.50 | 14.80 |
| Support price (¢/lb) | 11.05 | 11.07 | 11.20 | 11.20 | 11.20 | 11.35 |
| Nonrecourse loan (¢/lb): | | | | | | |
| Quota peanut loan rate | 11.05 | 11.07 | 11.20 | 11.20 | 11.20 | 11.35 |
| Non-quota peanut loan rate | — | — | — | — | — | — |
| National marketing poundage quota (1,000 tons) | 970.0 | 1,006.0 | 1,006.3 | 1,066.6 | 1,187.4 | 1,368.5 |
| National allotment (1,000 acres) | 1,612.4 | 1,612.6 | 1,612.1 | 1,612.6 | 1,613.5 | 1,613.0 |
| CCC domestic sales: [2] | | | | | | |
| Announced minimum (¢/lb) [3] | — | — | — | — | — | — |

| Provision | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 |
|---|---|---|---|---|---|---|
| Parity price (¢/lb) [1] | 15.10 | 15.50 | 16.30 | 17.00 | 17.90 | 19.00 |
| Support price (¢/lb) | 11.35 | 12.01 | 12.38 | 12.75 | 13.425 | 14.25 |
| Nonrecourse loan (¢/lb): | | | | | | |
| Quota peanut loan rate | 11.35 | 12.01 | 12.38 | 12.75 | 13.425 | 14.25 |
| Non-quota peanut loan rate | — | — | — | — | — | — |
| National marketing poundage quota (1,000 tons) | 1,428.9 | 1,489.3 | 1,549.6 | 1,537.6 | 1,553.7 | 1,634.2 |
| National allotment (1,000 acres) | 1,612.8 | 1,612.8 | 1,612.3 | 1,612.9 | 1,612.7 | 1,612.8 |
| CCC domestic sales: [2] | | | | | | |
| Announced minimum (¢/lb) [3] | — | — | — | — | — | — |

| Provision | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|---|---|
| Parity price (¢/lb) [1] | 21.90 | 24.40 | 26.30 | 27.60 | 28.70 | 31.50 |
| Support price (¢/lb) | 16.425 | 18.3 | — | — | — | — |
| Nonrecourse loan (¢/lb): | | | | | | |
| Quota peanut loan rate | 16.425 | 18.3 | 19.725 | 20.7 | 21.525 | 21.0 |
| Non-quota peanut loan rate | — | — | — | — | — | 12.5 |
| National marketing poundage quota (1,000 tons) | 1,771.0 | 1,900.0 | 1,899.8 | 2,004.0 | 2,068.9 | 1,680.0 |
| National allotment (1,000 acres) | 1,614.0 | 1,614.0 | 1,613.5 | 1,614.0 | 1,614.2 | 1,614.0 |
| CCC domestic sales: [2] | | | | | | |
| Announced minimum (¢/lb) [3] | — | 18.3 | 19.725 | — | — | [4] 22.05 + CC |

| Provision | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 |
|---|---|---|---|---|---|---|
| Parity price (¢/lb) [1] | 35.80 | 38.10 | 41.50 | 43.30 | 44.00 | 45.90 |
| Support price (¢/lb) | — | — | — | — | — | — |
| Nonrecourse loan (¢/lb): | | | | | | |
| Quota peanut loan rate | 21.0 | 22.75 | 22.75 | 27.5 | 27.5 | 27.5 |
| Non-quota peanut loan rate | 15.0 | 12.5 | 12.5 | 10.0 | 9.25 | 9.25 |
| National marketing poundage quota (1,000 tons) | 1,596.0 | 1,516.0 | 1,440.0 | 1,200.0 | 1,167.0 | 1,134.0 |
| National allotment (1,000 acres) | 1,614.0 | 1,614.0 | 1,734.0 | Suspended | Suspended | Suspended |
| CCC domestic sales: [2] | | | | | | |
| Announced minimum (¢/lb) [3] | — | — | — | — | — | — |

| Provision | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|
| Parity price (¢/lb) [1] | 45.50 | 44.80 | 46.70 | 48.90 | 50.60 |
| Support price (¢/lb) | — | — | — | — | — |
| Nonrecourse loan (¢/lb): | | | | | |
| Quota peanut loan rate | 27.95 | 30.37 | 30.37 | 30.76 | 30.79 |
| Non-quota peanut loan rate | 7.40 | 7.49 | 7.49 | 7.49 | 7.49 |
| National marketing poundage quota (1,000 tons) | 1,100.0 | 1,355.5 | 1,355.5 | 1,402.2 | 1,440.0 |
| National allotment (1,000 acres) | Suspended | Suspended | Suspended | Suspended | Suspended |
| CCC domestic sales: [2] | | | | | |
| Announced minimum (¢/lb) [3] | — | 30.37 + CC | 30.37 + CC | 30.76 + CC | 30.79 + CC |

[1] Average parity price of peanuts for July.
[2] Sales made at fixed prices or through competitive bids.
[3] In any event, the CCC can not sell stock holdings at less than the going market price.
[4] The sales price increased to 22.47 cents plus costs if sold after December 31, 1978.

Source: Robert C. Green. *A Database for Support Programs of Program Crops, 1961–90.* Staff Report (forthcoming). U.S. Department of Agriculture, Economic Research Service.

## Glossary for Soybeans and Peanuts

**Acreage allotment.** An individual farm's share of the national acreage that the Secretary of Agriculture determines is needed to produce sufficient supplies of a particular crop. The farm's share is based on its previous production.

**Acreage reduction program (ARP).** A voluntary land retirement system in which farmers must idle a portion of their base acreage; the remaining base acreage must be planted in the base crop. Farmers must participate to be eligible for benefits like Commodity Credit Corporation loans and deficiency payments.

**Agricultural inputs.** Components of agricultural production, such as land, labor, and the capital needed to acquire other inputs, including machinery, fertilizer, seed, and pesticides.

**Agricultural Research Service (ARS).** A USDA agency that conducts basic, applied, and developmental research of regional, national, or international scope in areas including livestock, plants, food safety, nutrition, and food processing.

**Agricultural Stabilization and Conservation Service (ASCS).** A USDA agency responsible for administering farm price- and income-support programs and some conservation and forestry cost-sharing programs.

**Basic commodities.** Six crops (corn, cotton, peanuts, rice, tobacco, and wheat) declared by legislation as price-supported commodities.

**Cargo preference.** A law that requires a certain portion of goods or commodities financed by the U.S. Government be shipped on U.S. flag ships. The law has traditionally applied to PL 480 and other concessional financing or donation programs.

**Carryover.** Existing supplies of a farm commodity at the beginning of a new harvest for a commodity (end of the marketing year). It is the remaining stock carried over into the next year.

**Cash grain farm.** A farm on which corn, grain sorghum, wheat, oats, barley, other small grains, soybeans, or field beans and peas account for at least 50 percent of the value of the products sold.

**Census of Agriculture.** A survey taken by the Bureau of the Census every 5 years to determine the number of farms, land in farms, crop acreage and production, livestock numbers and production, farm spending, farm facilities and equipment, farm tenure, value of farm products sold, farm size, type of farm, and so forth. Data are reported by various farm characteristics for States and counties.

**Commodity Credit Corporation (CCC).** A federally owned and operated corporation within the U.S. Department of Agriculture created to stabilize, support, and protect farm income and prices through loans, purchases, payments, and other operations. All money transactions for agricultural price and income support and related programs are handled through the CCC; the CCC also helps maintain balanced, adequate supplies of agricultural commodities and helps in their orderly distribution. The CCC does not have any operating personnel or facilities.

**Concessional sales.** Credit sales of a commodity in which the buyer is allowed more favorable payment terms than those on the open market (such as low-interest, long-term credit).

**Conservation practices.** Methods or devices which reduce soil erosion and retain soil moisture, including conservation tillage and grassed waterways.

**Conservation reserve program (CRP).** A major provision of the Food Security Act of 1985 designed to reduce erosion on 40-45 million acres of farmland. Under the program, producers who sign contracts agree to convert highly erodible cropland to approved conservation uses for 10 years. In exchange, participating producers receive annual rental payments and cash or inkind payments to share up to 50 percent of the cost of establishing permanent vegetative cover.

**Conserving uses.** Land idled from production and planted in annual, biennial, or perennial grasses, or other soil-conserving crop.

**Cost of production.** An amount, measured in dollars, of all purchased inputs, allowances for management, and rent, that is necessary to produce farm products.

**Crop acreage base.** The average of the wheat, feed grains, upland and extra-long staple (ELS) cotton, or rice acreage planted for harvest on a farm, plus land not planted because of acreage reduction or diversion programs or the conservation reserve during a period specified by law.

**Crop rotation.** The practice of growing different crops in recurring succession on the same land usually for the purpose of increasing soil fertility.

**Crop year.** The year in which a crop is planted; used interchangeably with marketing year.

**Deficiency payment.** A Government payment to farmers who participate in wheat, feed grain, rice, or cotton programs. The payment rate is per bushel, pound, or hundredweight, based on the difference between the price level established by law (target price) and the higher of the market price during a period specified by law or the price per unit at which the Government will provide loans to farmers to enable them to hold their crops for later sale (loan rate). The payment is equal to the payment rate multiplied by the permitted acreage planted for harvest and then by the program yield established for the particular farm.

**Developing countries.** Countries whose economies are mostly dependent on agriculture and primary resources and do not have a strong industrial base.

**Direct payments.** Payments in the form of cash or commodity certificates made directly to producers for such purposes as deficiency payments, annual land diversion, or conservation reserve payments.

**Disaster Assistance Act of 1988 (PL 100-387).** The legislation signed into law August 11, 1988, designed to provide $3.9 billion in relief to farmers and ranchers who suffered losses because of natural disasters during 1988.

**Economic Research Service.** A USDA agency responsible for economic data and analyses and social science information needed to develop, administer, and evaluate agricultural and rural policies and programs.

**Ending stocks.** Existing supplies of a farm commodity at the end of a marketing year.

**Erosion.** The process in which water or wind moves soil from one location to another.

**European Community (EC).** Established by the Treaty of Rome in 1957, also known as the European Economic Community and the Common Market. Originally composed of six European nations, it has expanded to 12. The EC attempts to unify and integrate member economies by establishing a customs union and common economic policies, including the Common Agricultural Policy (CAP).

**Exchange rate.** Number of units of one currency that can be exchanged for one unit of another currency at a given time.

**Export allocation or quota.** Controls applied by an exporting country to limit the amount of goods leaving that country.

**Export credit guarantee program (GSM-102).** The largest U.S. agricultural export promotion program, functioning since 1982; guarantees repayment of private, short-term credit for up to 3 years.

**Export enhancement program (EEP).** Begun in May 1985 under a Commodity Credit Corporation charter to help U.S. exporters meet competitors' prices in subsidized markets. Under the EEP, exporters are awarded bonus certificates which are redeemable for CCC-owned commodities, enabling them to sell certain commodities to specified countries at prices below those of the U.S. market.

**Export subsidies.** Special incentives, such as cash payments, tax exemptions, preferential exchange rates, and special contracts, extended by governments to encourage increased foreign sales; often used when a nation's domestic price for a good is artificially raised above world market prices.

**Exports.** Domestically produced goods and services that are sold abroad.

**Farm.** A tract or tracts of land, improvements, and other appurtenances available to produce crops or livestock, including fish. The Bureau of the Census defined a farm in 1974 as any place that has or would have had $1,000 or more in gross sales of farm products.

**Farm acreage base.** The annual total of the crop acreage bases (wheat, feed grains, upland cotton, and rice) for a farm, the average acreage planted to soybeans, peanuts, and other approved nonprogram crops, and the average acreage devoted to conserving uses.

**Farm value.** A measure of the return or payment received by farmers calculated by multiplying farm prices by the quantities of farm products equivalent to food sold at retail.

**Farm-to-retail price spread.** A measure of all processing, transportation, wholesaling, and retailing charges incurred after products leave the farm.

**Feed grains.** Any of several grains most commonly used for livestock or poultry feed, including corn, grain sorghum, oats, and barley.

**Food Security Act of 1985 (PL 99-198).** The omnibus food and agriculture legislation signed into law on December 23, 1985, that provides a 5-year framework for the Secretary of Agriculture to administer various agriculture and food programs. The act amends the Agricultural Adjustment Act of 1938 and the Agricultural Act of 1949 for the 1986-90 crop years (see permanent legislation).

**Foreign Agricultural Service.** A USDA agency responsible for promoting U.S. agricultural exports and administering export assistance programs.

**General Agreement on Tariffs and Trade (GATT).** An agreement originally negotiated in Geneva, Switzerland, in 1947 among 23 countries, including the United States, to increase international trade by reducing tariffs and other trade barriers. The agreement provides a code of conduct for international commerce and a framework for periodic multilateral negotiations on trade liberalization and expansion.

**Generic advertising.** Promotes purchases of a commodity without reference to the specific farmer or manufacturer. Generic advertising has been used to overcome competition from another product, to increase awareness of lesser known products, and to alter negative opinions about an item. Examples are dairy and beef promotion campaigns. Overseas market development is another application of generic advertising.

**Generic commodity certificates.** Negotiable certificates, which do not specify a certain commodity, that are issued by USDA in lieu of cash payments to commodity program participants and sellers of agricultural products. The certificates, frequently referred to as payment-in-kind (PIK) certificates, can be used to acquire stocks held as collateral on Government loans or owned by the Commodity Credit Corporation.

**Gramm-Rudman-Hollings Deficit Reduction Act.** Common name for The Balanced Budget and Emergency Deficit Control Act of 1985 (PL 99-177). The law mandates annual reductions in the Federal budget deficit to eliminate it by 1991. If Congress and the President cannot agree on a targeted budget package for any specific fiscal year, automatic cuts occur for almost all Federal programs.

**Gross farm income.** Income which farm operators realize from farming; includes cash receipts from the sale of farm products, Government payments, value of food and fuel produced and consumed on farms where grown, and other items.

**Harvested acres.** Acres actually harvested for a particular crop. Usually somewhat smaller at the national level than planted acres because of abandonment due to weather damage or other disasters or market prices too low to cover harvesting costs.

**Highly erodible land.** Land that meets specific conditions primarily relating to its land/soil classification and current or potential rate of erosion. The classifications are used in determining eligibility of land for the conservation reserve program.

**Import quota.** The maximum quantity or value of a commodity allowed to enter a country during a specified time period. A quota may apply to amounts from specific countries.

**International trade barriers.** Regulations imposed by governments to restrict imports from, and exports to, other countries, including tariffs, embargoes, and import quotas.

**International Trade Commission (ITC).** An agency of the U.S. Government established to monitor trade, provide economic analyses, and make recommendations to the President in cases of unfair trade practices.

**Legume.** A family of plants, including many valuable food and forage species, such as peas, beans, soybeans, peanuts, clovers, alfalfas, and sweetclovers. Legumes can convert nitrogen from the air and build up nitrogen in the soil (nitrogen fixation). Many of the nonwoody species are used as cover crops and are plowed under for improvement of the soil.

**Loan rate.** The price per unit (bushel, bale, or pound) at which the Government will provide loans to farmers to enable them to hold their crops for later sale.

**Marketing loan program.** Authorized by the Food Security Act of 1985, this program allows producers to repay nonrecourse price support loans at less than the announced loan rates. Marketing loans have been implemented for rice and upland cotton.

**Marketing quota.** Authorized by the Agricultural Adjustment Act of 1938, marketing quotas are used to regulate the marketing of some commodities when supplies are excessive. The quota represents, in general, the quantity USDA estimates to be required for domestic use and exports during the year. Marketing quotas are binding upon all producers if two-thirds or more of the producers holding allotments for the production of a crop vote for quotas in a referendum. When marketing quotas are in effect, growers who produce more of a

commodity than their farm acreage allotments should yield are subject to marketing penalties on the "excess" production and are ineligible for Government price-support loans. Quota provisions have been suspended for wheat, feed grains, and cotton since the 1960's; rice quotas were abolished in 1981. Poundage quotas are still used for domestically consumed peanuts, but not for exported peanuts. Marketing quotas are used for major tobacco types.

**Marketing year.** Generally, the period from the beginning of a new harvest through marketing the following year.

**Multilateral trade negotiations.** Discussions of trade issues involving three or more countries.

**National Agricultural Statistics Service (NASS).** A USDA agency that conducts surveys and publishes reports detailing data on production, stocks, prices, labor, weather, and other information of interest to those associated with agriculture.

**Net cashflow.** A financial indicator that measures cash available to farm operators and landlords in a given year; indicates the ability to meet current obligations and provide for family living expenses, and to undertake investments.

**Nonrecourse loans.** The major price support instrument used by the Commodity Credit Corporation (CCC) to support the price of feed grains, soybeans, wheat, cotton, peanuts, and tobacco. Farmers who agree to comply with all commodity program provisions may pledge a quantity of a commodity as collateral and obtain a loan from the CCC. The borrower may elect either to repay the loan with interest within a specified period and regain control of the collateral commodity or default on the loan. In case of a default, the borrower forfeits without penalty the collateral commodity to the CCC.

**Oilseeds crops.** Primarily soybeans, peanuts, cottonseed, sunflower seeds, and flaxseed used for the production of edible and/or inedible oils, as well as protein meals. Other oil crops are rapeseed, safflower, castor beans, and sesame.

**Paid land diversion.** If the Secretary of Agriculture determines that planted acres for a program crop should be reduced, producers may be offered a paid voluntary land diversion. Farmers are given a specific payment per acre to idle a percentage of their crop acreage base. The idled acreage is in addition to an acreage reduction program.

**Parity index.** See prices-paid index.

**Payment-in-kind (PIK).** A payment made to eligible producers in the form of an equivalent amount of commodities owned by the Commodity Credit Corporation.

**Permanent legislation.** Legislation that would be in force in the absence of all temporary amendments and temporarily suspended provisions. The Agricultural Adjustment Act of 1938 and the Agricultural Act of 1949 serve as the principal laws authorizing major commodity programs. These laws are frequently amended—provisions are added, suspended, and repealed. For the past several decades, periodic omnibus agriculture acts have provided for specific fixed-period commodity programs by adding temporary amendments to these laws, and suspending conflicting provisions of those laws for the same period. The temporarily suspended provisions of the 1938 and 1949 Acts go back into effect if current amendments, such as the Food Security Act of 1985, lapse and new legislation is not enacted.

**Permitted acreage.** The maximum acreage of a crop which may be planted for harvest within a program. The permitted acreage is computed by subtracting the acreage reduction program requirement from the crop acreage base minus the diversion acreage (if applicable). For example, if a farm has a crop acreage base of 100 acres and 10-percent acreage reduction is required, the permitted acreage is 90 acres.

**Price support programs.** Government programs that aim to keep farm prices received by participating producers from falling below specific minimum prices. Price-support programs for major commodities are carried out by providing loans to farmers so that they can store their crops during periods of low prices. The loans can later be redeemed if commodity prices rise sufficiently to make the sale of the commodity on the market profitable, or the farmer can forfeit the commodity to the Commodity Credit Corporation (CCC). In the latter case, the commodity is stored and is not available to the market until prices rise above statutory levels that allow the CCC to sell the commodities.

**Prices-paid index.** An indicator of changes in the prices farmers pay for goods and services (including interest, taxes, and farm wage rates) used for producing farm products and those needed for farm family living, referred to as the parity index when computed on a 1910-14 = 100 base.

**Producer.** A person who, as owner, landlord, tenant, or sharecropper, is entitled to a share of the crops available for marketing from the farm or a share of the proceeds from the sale of those commodities.

**Production expenses.** Total cash outlays for production. Capital expenses are figured on annual depreciation rather than on yearly cash outlays for capital items.

**Program crops.** Federal support programs are available to producers of wheat, corn, barley, grain sorghum, oats, rye, extra-long staple and upland cotton, rice, soybeans, tobacco, peanuts, and sugar.

**Program yield.** The farm commodity yield of record determined by averaging the yield for the 1981-85 crops, dropping the high and low years. Program yields are constant for the 1986-90 crops. The farm program yield applied to eligible acreage determines the level of production eligible for direct payments to producers.

**Public Law 480 (PL 480).** Common name for the Agricultural Trade Development and Assistance Act of 1954, which seeks to expand foreign markets for U.S. agricultural products, combat hunger, and encourage economic development in developing countries.

**Referendum.** The referral of a question to voters to be resolved by balloting. For example, marketing quotas, acreage allotments, or marketing agreements have been subject to referenda.

**Resources.** The available means for production, including land, labor, and capital.

**Section 22.** A section of the Agricultural Adjustment Act of 1933 that authorizes the President to restrict imports by imposing quotas or fees if the imports interfere with Federal price support programs or substantially reduce U.S. production of products processed from farm commodities.

**Set-aside.** A voluntary program to limit production by restricting the use of land. When offered, producers must participate to be eligible for Federal loans, purchases, and other payments.

**Spot market.** Market in sales contracts for immediate delivery, or delivery within a few days.

**Subsidy.** A direct or indirect benefit granted by a government for the production or distribution of a good.

**Target price.** A price level established by law for wheat, feed grains, rice, and cotton. Farmers participating in the Federal commodity programs receive the difference between the target price and the higher of the market price during a period prescribed by law or the unit price at which the Government will provide loans to farmers to enable them to hold their crops for later sale (the loan rate).

**Tariffs.** Taxes imposed on commodity imports by a government; may be either a fixed charge per unit of product imported (specific tariff) or a fixed percentage of value (*ad valorem* tariff).

**Temporary Emergency Food Assistance Program (TEFAP).** Established in 1983 to allow donation of commodities owned by the Commodity Credit Corporation to States in amounts relative to the number of unemployed and needy persons. The food is distributed by charitable organizations to eligible recipients.

**Trade barriers.** Regulations used by governments to restrict imports from, and exports to, other countries including tariffs, embargoes, and import quotas.

**Two-price plan.** Price discrimination between the domestic and export markets by selling commodities for export at a different price than in the domestic market. Governments or firms may adopt a two-price plan to expand markets, dispose of surpluses, and increase returns.

**Upland cotton.** The predominant type of cotton grown in the United States and in most major cotton-producing countries of the world. The staple length of these fibers ranges from about 3/4 inch to 1 1/4 inch, averaging nearly 1 3/32 inches.

**World price.** Often refers to the cost, insurance, and freight (c.i.f.) price of a commodity at the principal port of a major importing country or area.

# Get these timely reports from USDA's Economic Research Service

These periodicals bring you the latest information on food, the farm, and rural America to help you keep your expertise up-to-date. Order these periodicals today to get the latest facts, figures, trends, and issues from ERS.

***Agricultural Outlook.*** Presents USDA's farm income and food price forecasts. Emphasizes the short-term outlook, but also presents long-term analyses of issues ranging from international trade to U.S. land use and availability. 11 issues annually. *1 year, $26; 2 years, $51; 3 years, $75.*

***Farmline.*** Concise, fact-filled articles focus on economic conditions facing farmers, how the agricultural environment is changing, and the causes and consequences of those changes for farm and rural people. 11 issues annually. *1 year, $12; 2 years, $23; 3 years, $33.*

***National Food Review.*** Offers the latest developments in food prices, product safety, nutrition programs, consumption patterns, and marketing. 4 issues annually. *1 year, $11; 2 years, $21 3 years, $30.*

***Economic Indicators of the Farm Sector.*** Updates economic trends in U.S. agriculture. Each issue explores a different aspect of income and expenses: national and State financial summaries, production and efficiency statistics, and costs of production for major field crops and livestock and dairy. 5 issues annually. *1 year, $14; 2 years, $27; 3 years, $39.*

***Rural Development Perspectives.*** Crisp, nontechnical articles on the results of new rural research and what those results mean. 3 issues annually. *1 year, $9; 2 years, $17; 3 years, $24.*

***The Journal of Agricultural Economics Research.*** Technical research in agricultural economics, including econometric models and statistics focusing on methods employed and results of USDA economic research. 4 issues annually. *1 year, $8; 2 years, $15; 3 years, $21.*

***Foreign Agricultural Trade of the United States.*** Updates the quantity and value of U.S. farm exports and imports, plus price trends. 8 issues annually. *1 year, $25; 2 years, $49; 3 years, $72.*

***Situation and Outlook Reports.*** These reports provide timely analyses and forecasts of all major agricultural commodities and related topics such as finance, farm inputs, land values, and world and regional developments. Each *Situation and Outlook* title costs *1 year, $12; 2 years, $23; 3 years, $33.* Titles include:

| | | | |
|---|---|---|---|
| *Agricultural Exports* | *Cotton and Wool* | *Oil Crops* | *Vegetables and Specialties* |
| *Agricultural Income and Finance* | *Dairy* | *Rice* | *Wheat* |
| *Agricultural Resources* | *Feed* | *Sugar and Sweeteners* | *World Agriculture* |
| *Aquaculture* | *Fruit and Tree Nuts* | *Tobacco* | *World Agriculture Regionals* |

Also available: *Livestock and Poultry:* 1 year, $17; 2 years, $33; 3 years, $48.
*Livestock & Poultry Update (monthly):* 1 year, $15; 2 years, $29; 3 years, $42.
*U.S. Agricultural Trade Update (monthly):* 1 year, $15; 2 years, $29; 3 years, $42.

***Add 25 percent for shipments to foreign addresses (includes Canada).***

**To subscribe to these periodicals, or for more information, call toll free, 1-800-999-6779 (8:30-5:00 ET in the United States and Canada; other areas please call 301-725-7937), or write to:**

**ERS-NASS**
**P.O. Box 1608**
**Rockville, MD 20849-1608**

UNITED STATES DEPARTMENT OF AGRICULTURE
ECONOMIC RESEARCH SERVICE
1301 NEW YORK AVENUE, NW.
WASHINGTON, DC 20005-4788