UNITED STATES TARIFF COMMISSION

SUMMARIES OF TRADE AND TARIFF INFORMATION

Prepared in Terms of the Tariff Schedules
of the United States (TSUS)

Schedule 1

Animal and Vegetable Products
(In 14 volumes)

Volume 6

Cereal Grains, Malts, Starches, and Animal Feeds

TC Publication 179
Washington, D.C.
1966

UNITED STATES TARIFF COMMISSION

The basic staff work in the preparation of this volume was done by Robert T. Roeder and Lowell C. Grant of the Agricultural Division, Louise M. Rovner and George C. Reeves of the Economics Division, and Leo Jablonski of the Office of the General Counsel.

The Summaries series will consist of 62 volumes, of which this volume is the first to be released.

Address all communications to
United States Tariff Commission
Washington, D.C. 20436

UNITED STATES TARIFF COMMISSION

SUMMARIES OF TRADE AND TARIFF INFORMATION

Prepared in Terms of the Tariff Schedules
of the United States (TSUS)

Schedule 1

Animal and Vegetable Products
(In 14 volumes)

Volume 6

Cereal Grains, Malts, Starches, and Animal Feeds

TC Publication 179
Washington, D.C.
1966

SUMMARIES OF TRADE AND TARIFF INFORMATION
BY SCHEDULES

Schedule 1 - Animal and Vegetable Products
(In 14 volumes)
Schedule 2 - Wood and Paper; Printed Matter
(In 5 volumes)
Schedule 3 - Textile Fibers and Textile Products
(In 6 volumes)
Schedule 4 - Chemicals and Related Products
(In 12 volumes)
Schedule 5 - Nonmetallic Minerals and Products
(In 5 volumes)
Schedule 6 - Metals and Metal Products
(In 11 volumes)
Schedule 7 - Specified Products; Miscellaneous and Nonenumerated Products
(In 8 volumes)
Schedule 8 - Special Classification Provisions
(In 1 volume)

Schedule 1 Volumes

1 - Animals and Meats
2 - Fish, Fresh, Chilled, Frozen, or Cured
3 - Fish Products, Shellfish, and Shellfish Products
4 - Dairy Products and Birds' Eggs
5 - Live Plants and Seeds
6 - Cereal Grains, Malts, Starches, and Animal Feeds
7 - Vegetables and Edible Nuts
8 - Edible Fruits and Fruit Products
9 - Sugar, Cocoa, Confectionery, Coffee, Tea, and Spices
10 - Beverages
11 - Tobacco and Tobacco Products
12 - Animal and Vegetable Oils
13 - Hides, Skins, Leather, Feathers, and Miscellaneous Articles of Animal Origin
14 - Edible Preparations, Natural Resins, and Miscellaneous Articles of Vegetable Origin

F O R E W O R D

In an address delivered before a Boston audience on May 18, 1917, Frank W. Taussig, the distinguished first chairman of the Tariff Commission, delineated the responsibility of the recently established Commission to operate as a source of objective factual information on all aspects of domestic production and trade. As an initial step in meeting this obligation, the chairman stated, the Commission was preparing--

> a handy source of reference . . . designed to have on hand, in compact and simple form, all available data on the growth, development, and location of industries affected by the tariff, on the extent of domestic production, on the extent of imports, on the conditions of competition between domestic and foreign products.

The first such report was issued in 1920, and subsequent general issues of tariff summaries were published in 1921, 1929, and 1948-50.

In the 50 years since its establishment the Commission has been assigned many duties by the Congress, but the primary obligation for factfinding and production of information has remained a continuous major responsibility. Through its professional staff of commodity specialists, economists, lawyers, statisticians, and accountants, the Commission maintains constant surveillance of trade in the thousands of articles provided for in the Tariff Schedules of the United States. In its files and in the accumulated knowledge of its staff, the Commission has, therefore, built up a large reservoir of data and understanding not only with respect to imports but also with regard to significant developments affecting individual products and their uses and to processing and manufacturing techniques, business practices, and world trade. The publication of the present Summaries of Trade and Tariff Information will make available a current broad cross section of this information and understanding.

Every effort has been made to include all pertinent information in the summaries so that they will meet the needs of wide and varied interests that include the Congress, the courts, Government agencies, importers, business concerns, trade associations, research organizations, and many others. The structure of the individual summaries conforms generally with the earlier admonition of Chairman Taussig that the work "be exhaustive in inquiry, and at the same time brief and discriminating in statement." The scope of the entire project is encyclopedic, requiring concise and accurate descriptions of thousands of products, with indications of their uses, methods of production, number of producers, world supplies, and appraisals of their importance in trade and in our economy. In a society such as ours that has become progressively more dynamic, the task of sifting the essential from the nonessential has become both more difficult and more

important. Nevertheless, the summaries include substantive analytical material with regard to the basic factors affecting trends in consumption, production, and trade, and those bearing on the competitive position and economic health of domestic industries.

The publication of tariff summaries is particularly appropriate at this time. On August 31, 1963, the 16 schedules in titles I and II of the Tariff Act of 1930, certain import-excise provisions, other provisions of law, and some administrative practices were superseded by the Tariff Schedules of the United States (abbreviated to TSUS in these volumes). These changes resulted in an extensive regrouping of imports under 8 new tariff schedules and in modifications of the nomenclature and rates of duty for many articles. The summaries present for the first time full information on tariff items under the new structure, including import data derived through use of the Tariff Schedules of the United States Annotated (which comprises the legal tariff text plus statistical annotations).

Commodities are generally identified in the summaries in nontechnical language, which will meet most requirements. As an aid where more complete information is desired, the applicable legal language from the TSUS is reproduced in each volume as appendix A, which includes the article description, together with the general headnotes and rules of interpretation, and the directly applicable headnotes. Thus each volume will permit convenient reference to the statutory tariff language pertinent to the summaries it contains.

Publication of the 62 volumes projected for the series is scheduled under a 3-year program. Individual volumes, however, will be released as rapidly as they are prepared. For practical reasons the sequence of the summaries in the volumes do not necessarily follow the numerical sequence of the TSUS; however, all item numbers of the tariff schedules will be covered. The titles of the volumes to be issued for a particular TSUS schedule are set forth on the inside cover of the volumes for that schedule.

We believe that the current series of summaries, when completed, will represent the most comprehensive publication of its kind and that the benchmark information it presents will serve the needs of many interests.

Paul Kaplowitz

Paul Kaplowitz,
Chairman.

SUMMARIES OF TRADE AND TARIFF INFORMATION

SCHEDULE 1

Volume 6

C O N T E N T S

Numerical List of TSUS Items in This Volume

Grains are grown on approximately 70 percent of the harvested acreage of the world. The United States is one of the world's principal producers, annually producing about 170 million tons of grains, almost 1 ton for each inhabitant. In the period 1960-64, the United States ranked first in the production of corn, oats, and grain sorghum, second in wheat and barley, seventh in rye, and twelfth in rice.

U.S. production of virtually all grains has been increasing for a number of years. Notwithstanding Government efforts to control production, the aggregate quantity of output rose by a third between 1950 and 1965, while the acreage harvested declined by a fifth. The increased use of fertilizers, improved seed and cultural practices, and favorable weather conditions were largely responsible for this phenomenon. The rise in production was accompanied by an increase in surplus stocks (mostly owned by the Government); indeed, only a substantial rise in U.S. exports prevented a larger accumulation of stocks. The aggregate annual quantity of yearend stocks averaged 3 times as large in the period 1961-63 as in 1950-52; with a moderate decline during 1963-65, yearend stocks in that period averaged about $2\frac{1}{2}$ times as large as in the early 1950's. The decline in stocks during 1963-65 reflects both an increase in domestic consumption and a rise in U.S. exports; a reduction in stocks of wheat and corn accounted for a large part of the decline in total stocks.

The Agricultural Adjustment Act of 1938 (7 U.S.C. 1282) declared in part that the policy of Congress was to conserve national resources; to assist in the marketing of agricultural commodities; and to regulate interstate and foreign commerce in cotton, wheat, corn, tobacco, and rice to the extent necessary to provide an orderly, adequate, and balanced flow of such commodities by certain means, including assisting farmers in obtaining parity prices for such farm commodities, insofar as practicable, while assuring consumers of an adequate supply of such commodities at fair prices. This policy has been reaffirmed from time to time, and price support is mandatory for seven grains (barley, corn, grain sorghum, oats, rice, rye, and wheat). Three of these--corn, rice, and wheat--are considered by the Congress to be basic to the U.S. economy. Producers of grains have been able to obtain cash loans from the Government at the time of harvest and later either deliver the grain to the Government to cancel the loan or pay off the loan with cash; the loans have ranged from 50 to 90 percent of the parity prices. 1/ In some years producers have been required to restrict the amount of acreage planted

1/ The "parity price" of individual commodities is determined by the Secretary of Agriculture according to a statutory formula and is, in effect, the price that a certain quantity of a specific commodity would have to command in order to give the grower the same equivalent purchasing power as existed during a statutory base period.

to the grains in surplus in order to qualify for the benefits of the support program. The Food and Agriculture Act of 1965 (Public Law 89-321) continues the major provisions of the support programs in effect since the early 1960's. Several important features of this law relating to the grains differ, however, from those in earlier legislation. First, the current legislation is to apply for 4 years, the longest period since World War II; such a period will permit more effective planning by both the Government and the producers. Second, in addition to the diversion of cropland on an annual basis, producers will be able to retire acreage to soil-conserving or non-agricultural uses for a period of 5 to 10 years, and thereby not only reduce the output of surplus commodities, but also develop the land for recreational purposes. Third, the farm price of wheat for domestic food use will be supported at approximately 100 percent of parity and that of wheat for export and for feed use will be supported at a level based essentially on the world market price, the feeding value of wheat in relation to feed grains, and the level at which price support is made available for feed grains.

A large share of the domestic output of grains has been exported, whereas U.S. imports have generally been small. In recent years the United States has supplied about 40 percent of the total world wheat and wheat flour exports, 50 percent of the corn exports, 75 percent of the grain-sorghum exports, and 30 percent of the barley exports. Each year U.S. exports have been equivalent to about half of the domestic wheat and rice crops and to about one-tenth of the feed grain crops. Programs developed by the Government, farmer organizations, and the trade, as well as an increase in purchasing power in other countries, have been largely responsible for these substantial exports.

The Agricultural Trade Development and Assistance Act of 1954 (Public Law 480, 83d Cong.) and the payment-in-kind export program initiated by the Department of Agriculture in 1956 comprise the principal Government programs to assist exports. Public Law 480 provided for sales for foreign currency, famine relief and donations, barter of farm products for strategic and other materials, and long-term credit sales. Under the payment-in-kind program, the Government reimburses commercial exporters of grain for the difference between domestic prices and lower foreign prices. These payments or allowances are generally made in the form of grain released from Government stocks--hence, they are termed "payment-in-kind." In the period 1962-65, U.S. feed grains in foreign markets were competitive in price with those from other sources, and payments in kind ceased.

The European Economic Community (EEC) has been an expanding and important market for U.S. grains. The volume of exports to that area in the future, however, will depend largely on EEC action. Effective July 30, 1962, variable import levies were substituted for all other

forms of import duties; these levies are designed to keep the cost of imported commodities to at least the level of the prices of EEC-produced commodities which are Government supported. The EEC has agreed on a level of grain prices scheduled to go into effect on July 1, 1967, that could by increasing prices give a stimulus to grain production in France, the member with the principal grain-producing capacity. If such an increase in production is accompanied by trade barriers, U.S. exports to the EEC will be adversely affected.

Inasmuch as U.S. market prices for grains have been substantially above world prices from time to time, the increased imports resulting from this disparity have on occasion tended to interfere with Government price-support programs. Accordingly, import quotas were established for wheat and wheat flour, oats and unhulled ground oats, rye and rye flour and meal, and barley and rolled or ground barley and barley malt under section 22 of the Agricultural Adjustment Act, as amended (7 U.S.C. 624). Wheat fit for human consumption and milled wheat products fit for human consumption are currently the only grain and grain product imports subject to restrictions under section 22.

Commodity	TSUS item
Barley:	
Grain	130.10
Milled, not fit for human consumption	131.50

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

The United States is the second-ranking producer of barley and supplies about a third of annual world exports. In recent years U.S. imports, mostly from Canada, have supplied less than 5 percent of domestic consumption.

Description and uses

Among the major grain crops grown in the United States, barley ranks fifth in value of the annual output, after corn, wheat, oats, and grain sorghum. The primary use for barley is as feed for livestock, in which use it is interchangeable, to some degree, with corn, grain sorghum, and wheat. A substantial part of the domestic barley is grown in feed surplus areas, particularly the northern Great Plains, and is shipped to areas with concentrated livestock production.

In addition to its use as feed for livestock, the grain is used in the manufacture of malt, pearl barley, and flour, and as seed. Barley is the principal grain used to make malt (see summary on item 132.20). Whereas all barley is suitable for feed, only the high-quality grain (i.e., heavy, plump, unbroken kernels) is suitable for making malt. The proportion of the U.S. crop suitable for malt varies not only from year to year in any given area, but also from area to area, depending upon weather conditions during the growing and harvesting seasons. Pearl barley is an ingredient in soups and pet foods, and barley flour is used mainly in baby foods (see summary on items 131.10 and 131.12). Some of the best barley is set aside each year for seed. Most of the imported barley is of the high quality suitable for making malt.

Milled barley products not fit for human consumption consist primarily of rolled or ground barley but also include small quantities of damaged flour. Not included in this category are the

byproducts or wastes resulting from the milling of barley; these by-products are discussed in the summary on item 184.70. Barley is generally rolled or ground so that animals can utilize it more efficiently. Although large quantities of rolled or ground barley are produced domestically, both by commercial millers and by livestock feeders, no data are available on such production. Foreign trade in rolled or ground barley is insignificant relative to the trade in the whole grain.

U.S. tariff treatment

The current column 1 rates of duty applicable to imports (see general headnote 3 in appendix A) are as follows:

TSUS item	Commodity	Rate of duty
130.10	Barley grain----------	7.5¢ per bu. of 48 lbs.
131.50	Milled barley, not fit for human consumption.	15¢ per 100 lbs.

The rate for the barley grain, which reflects a concession granted by the United States in the General Agreement on Tariffs and Trade (GATT), has been in effect since January 1948. The rate for the milled products not fit for human consumption, which approximates the rate applicable to the whole barley grain, was established by the TSUS, which became effective on August 31, 1963. Inasmuch as such products had previously been dutiable at the same rate as barley grain, the 15-cent rate is designated a GATT rate.

The average ad valorem equivalent of the duty on imports of barley grain in 1964 was 5.6 percent; although the ad valorem equivalents for individual months ranged from 1.3 to 7.0 percent, the duty for the bulk of the imports was equivalent to about 6 percent. For the imports in 1964 of the milled products not fit for human consumption, the ad valorem equivalent of the duty ranged from 4.2 to 8.0 percent on the entries by months, and averaged 6.5 percent for the total.

U.S. consumption

In the crop years beginning July 1 of 1959-64, annual U.S. apparent consumption of barley ranged from 350 million to 387 million bushels (table 1) and was on the average about 40 percent higher than in the comparable 6-year period a decade earlier. This expansion largely reflects an increase in the grain fed to livestock. The amount of barley used by maltsters and millers, as well as that used for seed, remained almost unchanged. Although U.S. production of beer has increased in the past decade, the amount of malt used to make a given quantity of the beverage has declined.

During the period 1959-64 about 65 percent of the barley consumed domestically was used as feed, about 25 percent was either made into malt or milled into pearl barley and flour, and the remainder was used for seed (table 2). Most of the barley fed to animals was rolled or ground.

U.S. producers

In 1959 (the latest year for which data are available), farmers on 290,000 farms harvested 14 million acres of barley. The crop is but one source of income on most of the farms inasmuch as other crops and livestock are also important sources of income. The producers have sold about two-thirds of their output of barley in recent years, and the remainder has been either fed to their own livestock or used as seed. The majority of the producers are located in the North Central and Western States.

The producers of milled barley products not fit for human consumption number in the thousands. Commercial millers, as well as many livestock feeders who prepare feed for their own livestock, roll or grind barley.

U.S. production

Annual U.S. production of barley in the 6-year period 1959-64 averaged 416 million bushels, valued at $375 million. Output during this period was nearly 40 percent above the annual average for the corresponding 6-year period a decade earlier. The increase in production was largely a result of improved seed and cultural practices and favorable weather conditions, which resulted in higher-than-average yields per acre.

During 1959-64, yearend stocks of barley ranged from 102 million to 167 million bushels and averaged 138 million bushels, equivalent to a third of average annual domestic production. About 30 percent of the stocks of barley were owned by the Government during this period. In the years just prior to 1959, yearend stocks averaged about two-fifths of the annual domestic barley output, and nearly half of the stocks were owned by the Government.

Price-support operations

In recent years agricultural legislation has made it mandatory for the Government to support the price of barley at a level comparable to that for corn. Producers participating in the Government's feed grain program were able to obtain cash loans based on specified rates per bushel of grain produced; to obtain the cash loans in

1962-64, producers were required to limit the acreage planted to barley. Moreover, barley producers received compensation for land diverted to soil-conserving uses.

In the period 1959-64, the annual average loan rate ranged from 77 cents to 93 cents per bushel (table 3). The annual average farm price in the same period ranged from 10 cents per bushel above the loan rate (1964) to 1 cent below (1962). Inasmuch as the farm price was generally above the loan rate during the period under review, the quantity of barley that producers elected to deliver to the Government was small relative to domestic production; in the period 1959-64 from 0.4 percent to 6 percent of the crop was delivered to the Government each year. A larger share of the crop had been delivered in some earlier years; in 1957, for example, more than one-fourth of the crop--a record high--went into Government storage.

U.S. exports

In recent years the United States has been a net exporter of barley. In the period 1959-64, however, annual exports declined from 106 million to 58 million bushels (table 4). The decline in exports was largely a result of a rise in the output of grain for feed in Europe (a major market for U.S. exports) and the increased U.S. exports of corn and grain sorghum, which to some extent displaced exports of barley. In spite of the recent decline in exports, the annual exports in 1962-64 averaged more than twice as large as those a decade earlier, and exports continued to exceed imports by a very substantial margin. Major markets for U.S. barley during 1959-64 included the Republic of Korea, West Germany, Denmark, and the Netherlands; in 1963 and 1964 Japan was also an important purchaser of U.S. barley.

Exports of milled barley products not fit for human consumption have been negligible in recent years; data on such exports are not separately reported.

In a number of recent years a large share of the exports of barley were shipped under various Government export programs designed both to reduce surplus stocks and to increase the competitive position of domestic barley in world markets. In the early 1960's, however, prices of U.S. barley became competitive in world markets with those of barley from other countries, and Government-assisted exports declined. Virtually all exports of barley in the late 1950's were made with the benefit of Government assistance, compared with about 10 percent in 1964.

U.S. imports

In recent years no upward or downward trend has been evident in U.S. imports of barley. In the years 1959-64, imports, which

consisted largely of malting-quality grain, ranged from 2 million to 15 million bushels--equivalent to less than 5 percent of annual apparent consumption. Canada has supplied the bulk of the imports; Australia and France also have been important sources of imports in some years (table 5). The unusually small volume of imports in 1962 (2 million bushels) reflected the adequate domestic supplies of barley suitable for making malt and the lower-than-average stocks of such barley in Canada.

U.S. imports of milled barley products not fit for human consumption have been small in recent years compared with the quantity of domestic barley rolled and fed to livestock. In the period August 31, 1963, to June 30, 1964, 3.6 million pounds of such products (equivalent to about 70,000 bushels of the whole-kerneled barley) were imported; in the crop year 1964, imports amounted to 52,000 pounds (equal to about 1,000 bushels of the grain). Canada was the only source of imports.

In 1954 the United States established an absolute quota on imports of whole barley, rolled or ground barley, and barley malt pursuant to Proclamation No. 3075 by the President (3 CFR 1954-1958 Comp., p. 24). That proclamation was issued following a determination by the U.S. Tariff Commission, under the provisions of section 22 of the Agricultural Adjustment Act, as amended (7 U.S.C. 624), that imports of the aforementioned articles were in effect interfering with the Government's price-support program for barley. An absolute quota of 27.5 million bushels, of which Canada was allocated 99 percent, was put into effect from October 1, 1954, to September 30, 1955. Since that time the United States has not imposed import quotas on barley.

Foreign production and trade

Annual world production of barley increased by 40 percent in the decade from the early 1950's to the early 1960's. In the period 1961-63 annual production averaged nearly 4 billion bushels. However, less than a tenth of the output entered into international trade. Although virtually all countries produce barley, only a few are important exporters. During 1961-63, France, the United States, and Canada supplied 60 percent of the world exports. The bulk of the exports from the United States and Canada went to Western Europe and the United Kingdom, and most of those from France, to other countries in the European Economic Community.

Some important barley-producing countries, such as the United Kingdom, Turkey, West Germany, and Denmark, generally have not been substantial suppliers in the world market. The U.S.S.R. and mainland China, also important producers, confine their trade in barley largely to other Communist-dominated countries.

Table 1.--Barley: U.S. production, imports for consumption, exports of domestic merchandise, yearend stocks, and apparent consumption, crop years 1959-64

Year beginning July 1--	Production	Imports	Exports	Yearend stocks 1/	Apparent consumption	Ratio of imports to consumption
	Million bushels	Million bushels	Million bushels	Million bushels	Million bushels	Percent
1959	422	14	106	167	359	4
1960	431	11	83	153	373	3
1961	396	15	82	124	358	4
1962	436	2	65	147	350	1
1963	407	10	67	134	363	3
1964	403	10	58	102	387	3

1/ Includes private and Government stocks on farms, and in elevators, warehouses, and mills.

Source: Production, apparent consumption, and yearend stocks compiled from official statistics of the U.S. Department of Agriculture; imports and exports compiled from official statistics of the U.S. Department of Commerce.

Table 2.--Barley: U.S. apparent consumption, by use, crop years 1959-64

(In millions of bushels)

Year beginning July 1--	Feed	Industrial uses	Seed	Total
1959	237	97	25	359
1960	253	95	25	373
1961	238	97	23	358
1962	232	96	22	350
1963	248	96	19	363
1964	269	101	17	387

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

Table 3.--Barley: U.S. Government price-support operations, crop years 1959-64

Year beginning July 1--	Average loan rate	Average farm price	Quantity placed under price support	Deliveries to the Government		Government stocks at yearend
				Quantity	Ratio to production	
	Per bushel	Per bushel	Million bushels	Million bushels	Percent	Million bushels
1959	1/ $0.77	$0.86	41	9	2	69
1960	1/ .77	.84	47	17	4	51
1961	2/ .93	.98	44	14	4	29
1962	2/ .93	.92	40	26	6	38
1963	2/3/ .82	.90	28	7	2	29
1964	2/3/ .84	.94	15	2	4/	20

1/ Available to all producers.

2/ Available only to producers participating in the feed grain program.

3/ In addition, payments of 14 cents per bushel (in 1963) and 12 cents per bushel (in 1964) were available on that share of the output that was equivalent to the average production on the farm in 1959 and 1960.

4/ Less than 0.5 percent.

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

Table 4.--Barley: U.S. exports of domestic merchandise, by specified markets, crop years 1959-64 1/

Country	Year beginning July 1--					
	1959	1960	1961	1962	1963	1964
	Quantity (million bushels)					
West Germany	23	10	29	14	10	10
Republic of Korea	-	8	2/	11	10	7
Denmark	9	3	2	2	6	5
Netherlands	19	11	10	7	5	4
Poland	16	11	4	5	2	2
All other	39	40	37	26	34	30
Total	106	83	82	65	67	58
	Value (million dollars)					
West Germany	24	9	36	15	10	10
Republic of Korea	-	9	1	13	12	8
Denmark	10	3	3	2	6	5
Netherlands	19	10	12	8	5	4
Poland	17	12	6	6	2	2
All other	43	45	42	28	38	37
Total	113	88	100	72	73	66

1/ Table includes only consistent major markets.
2/ Less than 500,000 bushels.

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

Note.--It is believed that exports of milled barley products not fit for human consumption were negligible in the period 1959-64; data for such products are not separately reported.

Table 5.--Barley: U.S. imports for consumption, by principal sources, crop years 1959-64

Country	Year beginning July 1--					
	1959	1960	1961	1962	1963	1964
	Quantity (million bushels)					
Canada	13.7	11.1	11.3	1.9	8.6	7.8
France	-	-	.8	-	-	1.8
Australia	.5	1/	2.7	-	.9	.3
All other	.1	.3	.2	.1	.1	.1
Total	14.3	11.4	15.0	2.0	9.6	10.0
	Value (million dollars)					
Canada	17.9	14.1	14.9	2.7	11.2	10.0
France	-	-	1.2	-	-	2.8
Australia	.5	2/	3.1	-	1.0	.3
All other	.3	.3	.2	.1	.1	.3
Total	18.7	14.4	19.4	2.8	12.3	13.4

1/ Less than 50,000 bushels.
2/ Less than $50,000.

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

Note.--Imports of milled barley products not fit for human consumption were not separately reported prior to Aug. 31, 1963.

Commodity	TSUS item
Buckwheat grain	130.15
Milled buckwheat products:	
Fit for human consumption	131.15
Not fit for human consumption	131.57

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

Buckwheat is of minor importance as a grain crop, and U.S. imports of buckwheat and milled buckwheat products have been very small.

Description and uses

Buckwheat is either ground and used as a partial substitute for other grains in feeding livestock and poultry, or milled into flour or groats for human use. About three-fourths of the buckwheat grain harvested in recent years in the United States has been consumed as livestock and poultry feed. Nearly one-fifth of the crop has been milled into flour and groats, and about one-twentieth has been used for seed. The bulk of the imports of buckwheat grain are similarly used for feed, and the remainder are either milled or used for seed.

Most buckwheat flour is combined with wheat or corn flour and a leavening substance to make a pancake mixture. Buckwheat groats are used in soups, gravies, and dressings, and occasionally as a breakfast food. The high fat content of the flour and groats makes them susceptible to rancidity if they are stored for considerable periods of time. Imported buckwheat flour and groats are sometimes identical with the U.S. products and sometimes in special forms customary in the diet of certain immigrant groups. Milled products which have been damaged or spoiled are usually converted into livestock feed.

U.S. tariff treatment

The current column 1 rates of duty applicable to imports (see general headnote 3 in appendix A) are as follows:

TSUS item	Commodity	Rate of duty
130.15	Buckwheat grain	10¢ per 100 lbs.
	Milled buckwheat products:	
131.15	Fit for human consumption	0.2¢ per lb.
131.57	Not fit for human consumption	10¢ per 100 lbs.

These rates, which reflect concessions granted by the United States in the General Agreement on Tariffs and Trade, have been in effect since 1948. The ad valorem equivalent of the duty on buckwheat grain, based on imports in 1964, averaged 1.5 percent; for entries in individual months it ranged from 1.1 to 3.3 percent. Imports in 1964 of milled buckwheat products fit for human consumption consisted only of flour from Canada, for which the ad valorem equivalent of the duty was 2.8 percent. Imports in other recent years generally included buckwheat groats from Japan, which were much higher in unit value than flour.

There have been no imports of milled buckwheat products not fit for human consumption since a separate classification was established on August 31, 1963, and there probably were no imports in any recent preceding year.

The import duties on buckwheat and on milled buckwheat products have had no appreciable effect on the volume of imports.

U.S. consumption

The use of buckwheat for animal feed and for human food declined for many years until the late 1950's; since then the level of consumption has been relatively stable (tables 1 and 2). Other grains have been substituted for feeding animals. The general trend toward a reduced per capita consumption of starchy foods and a declining taste for buckwheat cakes and groats have influenced the level of consumption of milled buckwheat products.

In the period 1960-64 the annual U.S. apparent consumption of buckwheat grain averaged about 41 million pounds, of which about 7 million pounds per year was converted into some 4 million pounds of buckwheat flour and groats.

U.S. producers

In 1959 a total of 56,000 acres of buckwheat was harvested on 7,000 farms in the United States. In all probability the number of farms growing buckwheat has decreased since 1959, inasmuch as only

41,000 acres were harvested in 1964. New York, Pennsylvania, Michigan, and Wisconsin were the only States reporting buckwheat production in 1963 and 1964. Although growers sell about three-fifths of their annual output of buckwheat, sales of that grain supply only a minor share of the total cash income of most producers; other crops and livestock enterprises afford more important sources of income.

A few mills, generally located near the areas where buckwheat is grown, produce buckwheat flour and groats as a minor part of their overall operations.

U.S. production

Domestic production of buckwheat declined substantially between the 1920's and the late 1950's. The development of earlier maturing varieties of other grains and of improved farm machines permitting faster planting and harvesting has reduced the farmer's need for a quick-maturing crop such as buckwheat. In the 5-year period 1960-64, however, output showed no downward trend; it averaged about 39 million pounds annually. Following a long period of decline, the annual production of flour and groats has likewise remained relatively unchanged in recent years. The output of these products amounted to about 4 million pounds annually in the period 1960-64. Carryover stocks of both the grain and the milled products have been negligible.

There is no Federal price-support program for buckwheat. The availability of buckwheat for feed will be determined largely by the relative advantage to the farmer of retaining a crop such as buckwheat in the farm rotation. As indicated earlier, only about one-fifth of the crop has been milled into flour and groats. Although the taste for these products appears to be declining, the expected population growth will probably help to maintain consumption of them at approximately the present level for some time.

U.S. exports and imports

Exports of buckwheat have been small relative to domestic production; statistics are not separately reported. The bulk of the small amount of grain that was exported went to Western Europe. Exports of milled buckwheat products have been negligible or nil.

U.S. imports of buckwheat grain have varied widely from year to year (table 3). In the years 1960-63 such imports averaged 3.1 million pounds, but in 1964 they totaled only 152,000 pounds. Canada has been the principal source, and the supply there, as well as the price in Europe, the principal foreign market for Canadian buckwheat, influences the volume of U.S. imports. The bulk of the Canadian crop, which averaged 64 million pounds annually in 1960-64, has been grown and milled in Quebec, Ontario, and Manitoba.

Annual U.S. imports of milled buckwheat products in 1960-64 (table 4) ranged from 1,350 pounds (in 1961) to 330,000 pounds (in 1960), and the quantities imported appeared unrelated to the quantities of buckwheat grain imported in the same years. Imports of milled products consisted mainly of flour from Canada; groats comprised the small imports from Japan. International trade in milled buckwheat products not fit for human consumption is unimportant; imports have been negligible or nil for many years.

Imports of buckwheat grain supplied about 6 percent of the total U.S. apparent consumption of buckwheat in the 5-year period 1960-64. Imports of milled buckwheat products represented about 5 percent of U.S. apparent consumption of such products. In terms of grain equivalent the imports of buckwheat in all forms amounted to about 7 percent of total U.S. apparent consumption.

Table 1.--Buckwheat, hulled or not hulled: U.S. production, imports for consumption, and apparent consumption, 1960-64

(Quantity in thousands of pounds; value in thousands of dollars)

Year	Production	Imports	Apparent consumption 1/	Ratio (percent) of imports to consumption
	Quantity			
1960	38,880	5,418	44,000	12
1961	41,472	2,494	44,000	6
1962	34,992	2,212	37,000	6
1963	39,744	2,352	42,000	6
1964	39,360	152	40,000	2/
	Value			
1960	937	166	1,103	3/
1961	991	66	1,057	3/
1962	941	74	1,015	3/
1963	1,168	96	1,264	3/
1964	860	10	870	3/

1/ Production plus imports; exports and carryover stocks are believed to be negligible.

2/ Less than 0.5 percent.

3/ Not meaningful.

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

Table 2.--Milled buckwheat products fit for human consumption: U.S. production, imports for consumption, and apparent consumption, 1960-64

Year	Production 1/	Imports	Apparent consumption 2/	Ratio of imports to consumption
	1,000 pounds	1,000 pounds	1,000 pounds	Percent
1960	4,199	330	5,000	7
1961	4,479	1	4,000	3/
1962	3,779	175	4,000	4
1963	4,292	112	4,000	3
1964	4,251	50	4,000	1

1/ Estimated on the basis of U.S. Department of Agriculture reports that 18 percent of the domestic crop of buckwheat, as reported in table 1, is milled into flour.

2/ Production plus imports; exports and carryover stocks are believed to be negligible or nil.

3/ Less than 0.5 percent.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Note.--The value of production is not available. Imports of milled buckwheat products not fit for human consumption were not separately reported prior to Aug. 31, 1963; there were no imports of such products in the period Aug. 31, 1963-Dec. 31, 1964.

Table 3.--Buckwheat, hulled or not hulled: U.S. imports for consumption, by sources, 1960-64

Year	Canada	Republic of South Africa 1/	Japan	Total
	Quantity (1,000 pounds)			
1960	4,746	672	-	5,418
1961	2,493	-	1	2,494
1962	2,212	-	-	2,212
1963	1,302	1,050	-	2,352
1964	152	-	-	152
	Value (1,000 dollars)			
1960	142	24	-	166
1961	66	-	2/	66
1962	74	-	-	74
1963	55	41	-	96
1964	10	-	-	10
	Unit value (per 100 pounds)			
1960	$2.99	$3.56	-	$3.06
1961	2.65	-	$17.00	2.66
1962	3.34	-	-	3.34
1963	4.23	3.88	-	4.07
1964	6.76	-	-	6.76

1/ Name changed from Union of South Africa on May 31, 1961.
2/ Less than $500.

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

Note.--The unusually high unit value of imports from Japan in 1961 is believed to be due to a shipment of buckwheat for use as seed.

Table 4.--Milled buckwheat products fit for human consumption: U.S. imports for consumption, by sources, 1960-64

Year	Canada	Japan	Total
	Quantity (1,000 pounds)		
1960	326.9	2.7	329.6
1961	-	1.4	1.4
1962	173.2	1.8	175.0
1963	110.5	1.2	111.7
1964	50.0	-	50.0
	Value (1,000 dollars)		
1960	23.4	0.4	23.8
1961	-	.2	.2
1962	9.5	.3	9.8
1963	7.7	.2	7.9
1964	3.6	-	3.6
	Unit value (cents per pound)		
1960	7.1	15.7	7.2
1961	-	16.1	16.1
1962	5.5	16.3	5.6
1963	6.9	16.0	7.0
1964	7.2	-	7.2

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

Commodity	TSUS item
Canary seed	130.20

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

Although the domestic output of canary seed (a minor seed crop in the United States) has been increasing in recent years, imports have continued to supply a large part of domestic consumption; exports have been negligible.

Comment

Canary seed, the product of an annual grass (Phalaris canariensis), is used principally as a feed, either alone or in mixtures, for caged birds. The seed varies in quality according to size, gloss, hardness of the seedcoat, and content of foreign material. Imported and domestic recleaned canary seed are of comparable quality. Due to U.S. transportation costs, the imported seed is generally lower in price near the Atlantic, gulf, and Pacific coasts than the domestic seed, and higher in price elsewhere in the country.

The current column 1 rate of duty applicable to imports (see general headnote 3 in appendix A) is as follows:

TSUS item	Commodity	Rate of duty
130.20	Canary seed	0.25¢ per lb.

This rate, which has been in effect since June 1951, reflects a concession granted by the United States in the General Agreement on Tariffs and Trade. The ad valorem equivalent of the duty on imports in 1964, which averaged 4.9 percent, ranged from 1.9 to 7.0 percent depending on country of origin.

Canary seed is grown principally on idle wheat land in the Dakotas and Montana. The U.S. output, which varies from year to year, is determined largely by growers' prospects of the return from canary seed relative to that from other crops; canary seed production, however, is a minor part of a grower's overall operations.

In the late 1950's and early 1960's, when annual supplies in foreign countries were declining and U.S. demand was rising, the average unit value of U.S. imports increased from 3.5 cents per pound in 1958 to 9.5 cents per pound in 1962. Meanwhile, annual U.S. production rose from a negligible amount in the late 1950's to at least 10 million pounds in the early 1960's, and imports declined from 26 million pounds in 1958 to 17 million pounds in 1962. Reflecting an increase in world supplies, the average unit value of imports was nearly 50 percent lower in 1964 than in 1962. In 1964, U.S. production was about 15 million pounds, and U.S. imports, 14 million pounds.

The following tabulation, compiled from official statistics of the U.S. Department of Commerce, shows U.S. imports for consumption in the years 1960-64:

Year	Quantity	Value	Unit value
	1,000 pounds	1,000 dollars	Cents per pound
1960	19,705	1,117	5.67
1961	20,134	1,649	8.19
1962	17,456	1,660	9.51
1963	15,301	1,052	6.88
1964	13,999	720	5.14

The principal suppliers of U.S. imports have been Argentina, Turkey, and Morocco; Canada, Mexico, and Australia have also supplied substantial quantities in some years. U.S. exports have averaged about 500,000 pounds annually in recent years and have gone largely to Mexico.

Commodity	TSUS item
Corn or maize:	
Certified seed	130.30
Other grain	130.35, -.36
Milled, not fit for human consumption	131.60, -.61

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

In the United States, the leading world producer of corn, consumption is supplied almost entirely by domestic production, and imports are insignificant. In recent years exports have been equivalent to a tenth of the domestic output.

Description and uses

Corn is the most important cereal grown in the United States. In terms of acreage harvested, quantity produced, and value of production, it exceeds all other grains. Virtually all the corn grown in the United States today is known as hybrid corn; it is produced from seed developed by crossbreeding selected varieties. Yellow dent corn, the type of corn most widely cultivated in the United States, and flint corn are used predominantly as livestock feed, although small amounts of both are used in the manufacture of starch, sirup, sugar, oil, corn meal, breakfast foods, alcohol, and distilled spirits. Some grain, stalks, and leaves are fed to livestock as silage or forage. For use as livestock feed, corn is interchangeable to some extent with other grains, such as grain sorghum, wheat, and barley. Popcorn, grown almost exclusively for human consumption, is characterized by hard, small kernels containing a high proportion of gluten. The popping action results from the sudden release of pressure produced when heat is applied to the moisture contained in the kernel. Most types of corn are not suitable for popping. Sweet corn, a popular vegetable in the United States, is discussed in the summary on item 135.75.

Certified seed corn consists of quality seed of superior varieties grown and distributed to insure genetic identity and purity. In the United States, the production of such seed is controlled by crop-improvement associations composed of farmers and the staff of agricultural experiment stations. For imported seed to be classified as certified, the seed must have been verified by a responsible officer

of the foreign government as having been grown and approved especially for use as seed; further, the imported seed must be packaged in containers marked with the foreign government's official seed corn tags.

Milled corn products not fit for human consumption include such products as cracked corn and damaged flour, but they do not include byproducts or wastes resulting from the milling of corn. The latter products are primarily included in the summary on item 184.70, while corn meal, grits, and flour for human consumption are in the summary on item 131.20. Cracked corn is fed to animals because such corn can generally be utilized more efficiently than whole-kerneled corn. Although large quantities of cracked corn are produced domestically both by commercial millers and by livestock feeders, no data are available on such production. U.S. imports and exports of cracked corn and of milled corn not fit for human consumption have been negligible for many years.

The bulk of the imported corn, largely flint corn and white corn, is interchangeable in use with domestic yellow dent corn. However, a type of large-kerneled white corn imported from South America that is used to make an appetizer-type food has no close domestic substitute. Imported certified seed, mostly from Canada, consists of strains well adapted to use in northern areas of the United States.

U.S. tariff treatment

The current column 1 rates of duty applicable to imports (see general headnote 3 in appendix A) are as follows:

TSUS item	Commodity	Rate of duty
	Corn or maize:	
130.30	Certified seed----------	12.5¢ per bu. of 56 lbs.
130.35	Other grain----------	25¢ per bu. of 56 lbs.
130.36	If product of Cuba----------	10¢ per bu. of 56 lbs.
131.60	Milled, not fit for human consumption.	45¢ per 100 lbs.
131.61	If product of Cuba----------	18¢ per 100 lbs.

The rate for certified seed corn, which has been in effect since June 1951, reflects a concession granted by the United States in the General Agreement on Tariffs and Trade. The rates for corn or maize other than certified seed and milled corn products not fit for human consumption are derived from paragraph 724, Tariff Act of 1930, as originally enacted. They are not trade-agreement rates. The rates shown for items 130.36 and 131.61 are preferential rates for products of Cuba, which were suspended on May 24, 1962. Imports from Cuba have been prohibited since February 7, 1962.

The ad valorem equivalent for imports of certified seed corn in 1964, 1.7 percent, was representative for the bulk of the imports inasmuch as they were fairly similar in value. The average ad valorem equivalent of 13.2 percent for other unmilled corn is not representative because the imports ranged from noncertified seed and specialty white corn, both high in value, to corn for feed, which was much lower in value. The rate of duty for milled corn products not fit for human consumption as provided for by the tariff schedules is approximately the same as that for the unmilled grain; imports of such milled products have been nil in recent years.

U.S. consumption

The United States, which is by far the world's largest consumer of corn, has markedly increased its consumption of the grain during the past decade. Annual consumption in the early 1960's was about 15 percent higher than that in the mid-1950's and more than 30 percent higher than that in the early 1950's; in the crop years beginning October 1 of 1959-64, annual consumption averaged 3.4 billion bushels. In addition to the consumption of corn as grain, in recent years some 80 million tons of corn silage has been consumed annually; the silage was harvested from acreage equivalent to nearly 15 percent of that used for the production of the grain.

The greater use of corn for livestock feed--which accounts for about nine-tenths of the utilization of this grain--was largely responsible for the increase in consumption. In 1963 and 1964, however, the rise in the price of corn relative to prices of other grains, and also to prices of livestock, was responsible for a decline in the amount of corn fed to livestock (table 1). A large part of the corn consumed as feed was cracked or ground. Although the use of corn in the wet- and dry-milling and the alcohol and distilled-spirits industries accounts for only a small part of domestic consumption--about 10 percent of the total in 1964--it too has increased over the years.

The popularity of small electric poppers for home use and of popcorn confections has caused the consumption of popcorn to increase greatly since the early 1950's. In recent years the annual consumption of popcorn has averaged about 6 million bushels, virtually all supplied by domestic production.

Because fewer acres have been planted to corn in recent years than formerly, the quantity of corn used as seed has declined; seed corn accounts for less than 1 percent of the U.S. consumption of corn. Of the 11 million to 12 million bushels of seed planted annually in recent years, between 2 million and 3 million bushels have been certified.

U.S. producers

A large number of growers are engaged in the production of corn. In 1959 (the latest year for which data are available) corn was harvested for grain on nearly 2 million farms. Corn is grown in virtually all areas of the United States; the bulk is produced in the North Central States (principally Iowa and Illinois) comprising a region known as the Corn Belt. From 40 to 50 percent of the crop is sold by the growers; the bulk of the remainder is fed by the growers to their own livestock. In 1959, popcorn was harvested on nearly 17,000 farms; the principal popcorn-producing States are Indiana, Iowa, and Illinois.

The production of corn for seed is generally supervised by commercial seed companies. Although the actual number of producers of certified seed is not known, the number is small compared with the total number of seed corn producers. A majority of the producers are located in the Corn Belt.

The production of corn is one of several enterprises on most farms; a limited number of producers (principally in the Corn Belt), however, receive a large share of their income from the sale of corn.

The producers of milled corn products not fit for human consumption number in the thousands. In addition to commercial millers who grind corn for feed, many livestock feeders crack their own corn.

U.S. production and stocks

Whereas corn acreage has declined for many years (acreage harvested in 1962 was the smallest since 1919), improved seed and cultural practices have generally more than offset acreage reductions so that crops have increased. In the period 1959-63, the number of acres from which corn was harvested was reduced by 15 percent; however, the average yield per acre increased by 27 percent and the total production of corn rose by 7 percent. In 1964, unfavorable growing conditions in much of the Corn Belt reduced per acre yields, and output declined from the previous year by 500 million bushels to 3.5 billion bushels, valued at $4 billion. The crop harvested in the fall of 1965 amounted to a record high of 4.1 billion bushels, reflecting unusually high per acre yields. The U.S. output of corn discussed above consisted of large quantities of yellow dent corn and small amounts of popcorn and seed corn.

The production of popcorn frequently fluctuates substantially from one year to the next. A year or two of high prices for popcorn or of low prices for dent corn encourage growers to increase the acreage devoted to popcorn, even though a large part of the commercial popcorn acreage is usually contracted for in advance by popcorn

companies and seed houses. In the period 1959-63 the annual production of popcorn ranged between 4 million and 7 million bushels; in 1964, production amounted to 5 million bushels, valued at $10 million.

In recent years the U.S. output of seed corn has amounted to 11 million to 12 million bushels annually. About a fourth of the U.S. output of seed corn has been certified. More than 95 percent of the seed has been of hybrid varieties, compared with 65 percent at the end of World War II and less than 1 percent 30 years ago.

Stocks of corn held at the end of the crop year have been substantially larger since the mid-1950's than in earlier years. In the period 1959-64 about three-fifths of the corn stocks were owned by the Government. Stocks reached a record high of 2.0 billion bushels on September 30, 1961, and then declined to 1.2 billion bushels on September 30, 1965 (table 1). The decline in stocks reflects the increased sales of Government stocks in the domestic market, larger exports, and for 1964, a smaller-than-average output.

Price-support operations

Corn is one of the agricultural commodities for which price support is mandatory under existing legislation. A number of Government programs designed to raise corn prices directly or to limit the production of corn and thereby raise prices have been in operation. Producers participating in these programs obtain cash loans based on specified rates per bushel at the time of harvest and later either deliver the corn to the Government to cancel the loan, or pay off the loan with cash. Producers usually find it advantageous to pay cash only when the farm price for corn is higher than the loan rate. In addition to obtaining loans, producers have in some years received compensation for land diverted to soil-conserving uses.

In the period 1959-62, the average annual loan rate ranged from $1.06 to $1.20 per bushel (table 2) and was from 6 cents to 12 cents per bushel above the farm price. Deliveries of corn to the Government in this period averaged about 500 million bushels a year, equivalent to about 14 percent of domestic production. In 1963 and 1964 the loan rates, at $1.07 and $1.10 per bushel respectively, were slightly lower than the average farm prices, and most producers redeemed their corn. In those years annual deliveries to the Government averaged 58 million bushels, equivalent to 2 percent of domestic production. In addition to receiving a loan, each producer participating in the 1963 and 1964 programs was given a cash payment for the share of the crop that was equivalent to his average annual output in 1959 and 1960. In 1963 the cash payment was 18 cents per bushel and in 1964, 15 cents.

U.S. exports

The United States, which has been the world's principal exporter of corn since 1948, has generally accounted for more than half of the total world trade in corn. Corn has accounted for about a third of the U.S. exports of grain in recent years. During the 6 crop years 1959-64, annual U.S. exports of corn, except seed corn, averaged 385 million bushels, which was more than 1½ times the average for the preceding 6 crop years. Exports in the later period were equivalent to about 10 percent of domestic production. Exports of popcorn are believed to have been small relative to production; data are not separately reported.

Rapidly developing livestock industries in the industrialized countries of Western Europe and Japan have been largely responsible for the upward trend in U.S. exports of corn (table 3). As their livestock production is expanded, these areas will probably continue to be important markets for U.S. corn and other feed grains. Canada and the United Kingdom have also been important markets for exports of corn.

Exports of seed corn, including both certified and noncertified seed, ranged between 240,000 and 442,000 bushels a year in the period 1959-64. Canada, Mexico, and West Germany generally have been important markets for seed corn.

In a number of recent years a large share of the exports have been shipped under various Government export programs. These programs are designed to reduce surplus stocks and to increase the competitive status of domestic grains in world markets. Prices of domestic corn became competitive in world markets with those of corn from other countries in the early 1960's, and Government-assisted exports declined. About 10 percent of the exports in 1964 were made with the benefit of Government assistance, whereas in the late 1950's virtually all of the exports were made with such assistance. The increase in total U.S. exports of corn in recent years, notwithstanding the substantial reduction in Government-assisted exports, indicates that prices of domestic corn have become competitive in world markets with those of corn from other countries.

U.S. imports

U.S. imports of corn are insignificant relative to consumption or exports. In the period 1959-64 imports of corn other than certified seed averaged about 1 million bushels a year (table 4). The bulk of the imports came from Argentina, Paraguay, and Brazil and entered the customs district of Puerto Rico, where they have no appreciable effect upon the price received by continental U.S. corn growers. Imports supplied about a fifth of Puerto Rico's consumption of corn; the bulk

of the remainder of the corn consumed there came from the continental United States.

In recent years Peru has exported to the United States a high-valued, large-kerneled white corn, which is processed into a food used as an appetizer in this country; in the period 1959-64 the value of annual imports from Peru ranged between $75,000 and $231,000. Imports from Cuba were negligible in the period 1959-61 and were embargoed as of February 7, 1962.

The small amounts of certified seed that are imported are generally used to improve domestic strains of seed. In the period 1959-64, imports of certified seed, virtually all of which came from Canada, ranged between 600 and 113,000 bushels a year. Imports in most of those years were equivalent to about 1 percent of U.S. production of certified seed corn.

Foreign production and trade

The United States has generally produced half of the world's corn crop and accounted for somewhat more than half of the international trade in that product. Other important suppliers have been Argentina and the Republic of South Africa. Even though these countries produce in the aggregate only about 5 percent of the world output of corn, in a recent 2-year period Argentina accounted for 13 percent and South Africa for 10 percent of world exports. Argentina exports more than half of each year's harvest. Argentine yellow flint corn commands a premium in countries such as Italy, which prefer such corn for the desirable yellow color that it imparts to dressed poultry. South Africa exports mostly white corn, which is used not only in livestock feeds but also in the manufacture of cornstarch in Western Europe and Japan.

Brazil, Mexico, countries in the Danube basin, the U.S.S.R., and mainland China have also produced substantial quantities of corn in recent years; these countries collectively produce somewhat less than a third of the world corn crop but are generally not large exporters of corn. Brazil and Mexico are prominent exporters only when supplies exceed their own requirements; the domestic consumption of corn is expanding in both of these countries. Of the Danube basin countries, only Yugoslavia exports corn to Western Europe; such exports, however, have been small. Mainland China is a significant importer of corn, largely from Argentina and South Africa.

Although Thailand is a small producer of corn, it is becoming an important supplier to Japan (a large market for U.S. corn) and other markets in the Far East.

If corn production in France continues upward, exports (which are currently relatively small) will probably increase--particularly to other Common Market countries. Italy, the other important corn-producing country in the Common Market, is a substantial net importer of the grain.

Table 1.--Corn, including certified seed corn: U.S. production, exports of domestic merchandise, yearend stocks, and apparent consumption, crop years 1959-64 1/

(In millions of bushels)

Year beginning Oct. 1--	Production	Exports	Yearend stocks 2/	Apparent consumption			
				Feed	Food and industrial use	Seed	Total 3/
1959	3,825	206	1,787	3,057	288	12	3,357
1960	3,908	272	2,008	3,130	275	11	3,416
1961	3,626	412	1,640	3,276	296	11	3,583
1962	3,637	397	1,346	3,221	302	12	3,535
1963	4,092	476	1,528	3,099	315	11	3,425
1964	3,549	549	1,160	3,031	327	11	3,369

1/ Data do not include popcorn, production of which ranged between 3.9 million and 6.9 million bushels a year in this period.

2/ Includes private and Government stocks on farms and in elevators, warehouses, and mills.

3/ Includes annual imports of approximately 1 million bushels (see table 4).

Source: Production, consumption, and yearend stocks compiled from official statistics of the U.S. Department of Agriculture; imports and exports compiled from official statistics of the U.S. Department of Commerce.

Table 2.--Corn: U.S. Government price-support operations, crop years 1959-64

Year beginning Oct. 1--	Average loan rate	Average farm price	Quantity placed under price support	Deliveries to the Government		Government stocks at yearend
				Quantity	Ratio to production	
	Per bushel	Per bushel	Million bushels	Million bushels	Percent	Million bushels
1959	1/ $1.12	$1.04	529	460	12	1,286
1960	1/ 1.06	1.00	638	480	12	1,327
1961	2/ 1.20	1.08	659	637	18	888
1962	2/ 1.20	1.10	592	480	13	810
1963	3/ 1.07	1.09	395	75	2	828
1964	3/ 1.10	1.16	215	40	1	540

1/ Available to all producers.

2/ Available only to producers participating in the Government crop-restriction program.

3/ Available only to producers participating in the feed grain program. In addition, payments of 18 cents per bushel (in 1963) and 15 cents per bushel (in 1964) were available on that share of the output that was equivalent to the average production on the farm in 1959 and 1960.

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

Table 3.--Corn, except seed corn: U.S. exports of domestic merchandise, by principal markets, crop years 1959-64

Country	Year beginning Oct. 1--					
	1959	1960	1961	1962	1963	1964
	Quantity (million bushels)					
Japan	8	21	39	36	63	90
Italy	1/	4	20	40	35	79
Canada	23	34	60	69	71	78
Netherlands	32	47	59	54	64	74
United Kingdom	71	75	101	62	68	63
Spain	1	9	11	30	25	38
West Germany	18	17	22	17	36	34
Belgium	11	18	23	21	25	32
All other	41	46	77	67	89	61
Total	205	271	412	396	476	549
	Value (million dollars)					
Japan	11	28	49	49	87	131
Italy	1	5	25	51	48	113
Canada	28	39	70	88	89	103
Netherlands	40	57	75	72	87	103
United Kingdom	91	93	124	79	92	88
Spain	1	12	14	40	34	55
West Germany	23	22	27	23	49	48
Belgium	14	23	29	27	34	44
All other	55	56	98	92	123	85
Total	264	335	511	521	643	770

1/ Less than 500,000 bushels.

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

Note.--U.S. exports of seed corn ranged from 0.2 million to 0.4 million bushels during the crop years 1959-64.

Table 4.--Corn, except certified seed: U.S. imports for consumption, by principal sources, crop years 1959-64

Country	Year beginning Oct. 1--					
	1959	1960	1961	1962	1963	1964
	Quantity (million bushels)					
Argentina	0.1	0.2	0.2	0.4	0.6	0.5
Paraguay	.2	.2	.2	.2	.1	.3
Brazil	-	-	-	.1	.1	.2
Dominican Republic	.7	.7	.6	.3	-	-
All other	.1	.1	1/ .3	2/	.1	.1
Total 3/	1.1	1.2	1.3	1.0	.9	1.0
	Value (million dollars)					
Argentina	0.1	0.3	0.3	0.6	1.1	0.7
Paraguay	.3	.3	.2	.2	.2	.4
Brazil	-	-	-	.1	.2	.2
Dominican Republic	1.2	1.1	1.1	.5	-	-
All other	.2	.3	1/ .7	.4	.2	.4
Total 3/	1.8	2.0	2.3	1.8	1.7	1.8

1/ Includes nearly 0.3 million bushels, valued at $0.4 million, imported from the Republic of South Africa.
2/ Less than 50,000 bushels.
3/ Because of rounding, figures may not add to the totals shown.

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

Note.--U.S. imports of seed corn and of milled corn products not fit for human consumption have been negligible for many years.

Commodity	TSUS item
Grain sorghum	130.40

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

The United States has been the world's principal producer and exporter of grain sorghum in recent years. U.S. imports have been negligible compared with domestic production.

Description and uses

Grain sorghum is harvested from an annual grass plant similar in appearance to corn except that the grain is borne in a panicle or head instead of on an ear. The principal use of the grain in the United States is as livestock feed which, on a pound-for-pound basis, has about 95 percent of the feeding value of corn. Small amounts of grain sorghum are milled into starch, made into alcohol, or used as seed. Some grain, stalks, and leaves are fed to livestock as silage or forage. Human consumption of grain sorghum is negligible in the United States, but is extensive in Asia and Africa in the form of bread and porridge and as an alcoholic drink similar to beer. Most of the imported grain sorghum has been of special varieties for use as seed.

U.S. tariff treatment

The current column 1 rate of duty applicable to imports (see general headnote 3 in appendix A) is as follows:

TSUS item	Commodity	Rate of duty
130.40	Grain sorghum	0.4¢ per lb.

This rate, which reflects a U.S. concession granted in the General Agreement on Tariffs and Trade, was derived from the rate, effective July 1, 1963, for unenumerated grass seeds (par. 763, Tariff Act of 1930). Grain sorghum of seed quality has comprised most imports of grain sorghum in recent years.

The ad valorem equivalent of the duty on imports in 1964 averaged 4.1 percent. For individual countries it ranged from 0.1 percent for imports from Jamaica to 5.2 percent for those from Argentina; the duty

on imports from Mexico, the principal foreign supplier, was equivalent to 3.9 percent ad valorem.

U.S. consumption

During the crop years beginning October 1 of 1959-64, the annual average U.S. consumption of grain sorghum was 425 million bushels, nearly 4 times as much as that in 1949-54. The substantial increase in consumption (largely as feed) reflects both a sharp rise in output and a price advantage of grain sorghum over corn. During the years 1959-64, farm prices were from 6 to 17 percent lower for grain sorghum than for corn (in terms of feeding value). In the same period, 413 million bushels of grain sorghum (equivalent to more than 95 percent of consumption) was annually fed to livestock, 11 million was consumed by millers and distillers, and 2 million was used as seed (table 1). In addition, some 12 million tons of grain sorghum in the form of silage is consumed annually; the acreage harvested for silage has been equivalent to about a tenth of that harvested for grain.

U.S. producers

In recent years, grain sorghum has been harvested from some 200,000 farms. The majority of the producers are located in the Great Plains States, with the largest number being in Texas, Kansas, and Nebraska. Inasmuch as three-fourths of the crop is sold from the farm, grain sorghum is an important source of income for many producers. By adopting improved seed and cultural practices, producers have greatly expanded their per acre output in recent years.

U.S. production and stocks

Domestic production of grain sorghum increased from an annual average of 165 million bushels in 1949-54 to one of 540 million bushels in 1959-64; the value of annual production in the latter period averaged $517 million. In the early 1950's the corn acreage that was suffering from drought and the acreage withdrawn from wheat and cotton by Government programs were generally shifted to grain sorghum. Moreover, from 1949 to 1964 the average yield of grain sorghum per acre more than doubled because of excellent moisture conditions, irrigation, and extensive use of newly developed hybrid seed.

In the period 1959-64 yearend stocks on farms and in elevators, warehouses, and mills ranged from 566 million to 702 million bushels and averaged nearly a fifth larger than the annual average U.S. production during the same period. Virtually all of these stocks were acquired by the Government as a result of its price-support operations for grain sorghum.

Price-support operations

It is currently mandatory for the Government to support the price of grain sorghum at a level deemed comparable to the support price of corn. Producers participating in the Government feed grain programs have been able to obtain cash loans on the grain sorghum harvested, and later either redeem the loan or deliver the grain to the Government. To obtain the cash loans in 1961-64, producers were required to limit the acreage planted to grain sorghum; they received compensation for land diverted to soil-conserving uses.

In the period 1959-64 the annual average loan rate ranged from 85 cents to $1.08 per bushel (table 2). The annual average farm price in the same period ranged from 7 cents per bushel below the loan rate (1961) to 7 cents above (1964). Inasmuch as the average loan rate has generally exceeded the average farm price, substantial quantities of grain sorghum have been placed under price support and delivered to the Government; in the period 1959-64 from 15 to 40 percent of the crop was delivered to the Government each year.

U.S. exports

During the period 1959-64 annual U.S. exports of grain sorghum averaged 106 million bushels, valued at $124 million, and were more than 2½ times as large as the annual average during 1949-54. Expanding markets for animal feeds in foreign countries were largely responsible for the rise in exports. Although exports went to a number of countries, the principal markets were Japan, the Netherlands, and Belgium (table 3). The sharp rise in purchases by Japan during 1959-64 reflected the partial substitution of grain sorghum for corn in mixed-feed formulas in that country. In recent years U.S. exports have been equivalent to about a fifth of domestic production.

In the late 1950's, when U.S. prices of grain sorghum were higher than foreign prices, a large part of the exports were made under Government programs designed to encourage such shipments. Such programs usually involved direct or indirect subsidies. In 1964, notwithstanding U.S. price-support programs, domestic grain sorghum was generally priced competitively in world markets, and less than 10 percent of the total exports were made with the benefit of Government assistance.

U.S. imports

U.S. imports of grain sorghum have been negligible relative to domestic production. As indicated earlier, most of the grain sorghum was imported for use as seed. Inasmuch as import statistics were not separately reported prior to August 31, 1963, the following tabulation, compiled from official statistics of the U.S. Department of Commerce, shows the imports, by sources, only for the crop years 1963 and 1964:

Country	1963	1964
	Quantity (bushels)	
Mexico	21,070	11,913
Colombia	-	1,376
Jamaica	24	31
Argentina	41,582	-
Republic of South Africa	223	-
Total	62,899	13,320
	Value	
Mexico	$122,388	$34,505
Colombia	-	2,818
Jamaica	5,065	570
Argentina	159,368	-
Republic of South Africa	3,042	-
Total	289,863	37,893

World production and trade

The United States produces about half and India a third of the world production of grain sorghum. In addition to these countries, Argentina, Egypt, Pakistan, and the Republic of South Africa also produce significant quantities of the grain. Only the United States and Argentina, however, are important exporters of grain sorghum; in recent years the former country has supplied nearly three-fourths and the latter one-fifth of total world exports. Europe has been the principal consumer of grain sorghum entering world trade.

Table 1.--Grain sorghum: U.S. production, exports of domestic merchandise, yearend stocks, and apparent consumption, crop years 1959-64

(In millions of bushels)

Year beginning Oct. 1--	Farm production	Exports	Yearend stocks 1/	Apparent consumption			
				Feed	Industrial uses	Seed	Total
1959	555	99	581	371	12	2	385
1960	620	70	702	416	11	2	429
1961	480	99	661	411	9	2	422
1962	510	113	655	391	10	2	403
1963	588	106	649	475	11	2	488
1964	490	148	566	412	11	2	425

1/ Includes private and Government stocks on farms and in elevators, warehouses, and mills.

Source: Production, yearend stocks, and consumption compiled from official statistics of the U.S. Department of Agriculture; exports compiled from official statistics of the U.S. Department of Commerce.

Note.--Imports of grain sorghum amounted to 63,000 bushels in 1963 and to 13,000 bushels in 1964; imports were not separately reported in earlier years.

Table 2.--Grain sorghum: Price-support operations, crop years 1959-64

Year beginning Oct. 1--	Average loan rate	Average price received by farmer	Quantity placed under price support	Deliveries to the Government		Government stocks at yearend
				Quantity	Ratio to production	
	Per bushel	Per bushel	Million bushels	Million bushels	Percent	Million bushels
1959	1/ $0.85	$0.86	115	96	17	549
1960	1/ .85	.83	203	175	28	666
1961	2/ 1.08	1.01	196	194	40	628
1962	2/ 1.08	1.02	219	217	43	627
1963	2/3/ .96	.97	141	130	22	615
1964	2/3/ .99	1.06	83	72	15	540

1/ Available to all producers.

2/ Available only to producers participating in the feed grain program.

3/ In addition, payments of 16 cents per bushel (in 1963) and 13 cents per bushel (in 1964) were available to producers on that share of the output that was equivalent to the average production of each farm in 1959 and 1960.

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

Table 3.--Grain sorghum: U.S. exports of domestic merchandise, by specified markets, crop years 1959-64

Country	Crop year beginning Oct. 1--					
	1959	1960	1961	1962	1963	1964
	Quantity (million bushels)					
Japan	2	5	14	27	35	46
Netherlands	23	22	31	23	32	40
Belgium	23	15	22	15	15	19
West Germany	10	1	6	4	4	8
United Kingdom	15	6	7	4	3	8
Israel	8	7	7	7	5	6
Poland	2	4	1	15	5	1
All other	16	10	11	18	7	20
Total	99	70	99	113	106	148
	Value (million dollars)					
Japan	2	6	16	32	41	57
Netherlands	26	25	34	27	39	48
Belgium	25	16	24	16	19	23
West Germany	11	1	6	4	5	9
United Kingdom	17	7	8	5	4	9
Israel	10	8	8	8	7	8
Poland	2	4	1	17	7	2
All other	18	13	14	21	7	25
Total	111	80	111	130	129	181

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

Note.--The table includes only consistent major markets.

Commodity	TSUS item
Oats:	
Grain	130.45
Milled, not fit for human consumption	131.65

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

The United States has been the world's principal producer of oats in recent years; U.S. exports and imports have been small compared with domestic production.

Description and uses

Oats, the seeds of an annual grass, are used primarily as a feed for livestock; they are exceeded in importance as a feed grain in the United States only by corn. Oats are also used as seed and, to some extent, in the manufacture of breakfast foods and flour. The bulk of the oats fed to livestock are ground without removing the fibrous hull (unhulled ground oats) and are considered milled oat products not fit for human consumption. Milled oat products fit for human consumption are discussed in the summary on items 131.25 and 131.27. Oatmeal and similar oat products which have been damaged are included in the category of milled oat products not fit for human consumption. By-products or wastes resulting from milling of oats are used chiefly for animal feed and are discussed in the summary on item 184.10.

On a pound-for-pound basis, oats have about nine-tenths the feeding value of corn and can readily be combined with or replaced by other grains in feed mixtures. The use of oats in such mixtures is determined largely on the basis of price. Most imports of oats have been used as feed. The international trade in unhulled ground oats has generally been small because such milled oats are bulky and expensive to ship.

Three-quarters of all domestically produced oats are used either as feed or seed on the farm on which they are grown; those used as feed are generally ground on the farm or by local mills. An additional sixth of the total is also used for feed, but is ground and mixed by commercial firms with other feeds or concentrates. Less than a tenth of the U.S. output of oats is processed for food for human consumption.

U.S. tariff treatment

The current column 1 rates of duty applicable to imports (see general headnote 3 in appendix A) are as follows:

TSUS item	Commodity	Rate of duty
	Oats:	
130.45	Grain	4¢ per bu. of 32 lbs.
131.65	Milled, not fit for human consumption	12.5¢ per 100 lbs.

The rates for items 130.45 and 131.65 were derived from concessions granted by the United States in the General Agreement on Tariffs and Trade, effective in January 1948 and June 1951, respectively.

The total duty applicable to imports of the unmilled product in 1964 was equivalent to 4.5 percent ad valorem. For entries of such oats in individual months in that year, the ad valorem equivalent ranged from 3.7 to 5.2 percent. The duty applicable to imports in 1964 of milled oat products not fit for human consumption was equivalent to 5.3 percent ad valorem. The ad valorem equivalent of the duty for entries in this category in individual months ranged from 4.9 to 6.2 percent.

U.S. consumption

The annual U.S. consumption of oats declined substantially between 1959 and 1964 (table 1). In the crop year beginning July 1, 1964, the apparent consumption, 914 million bushels, was about 20 percent smaller than that in 1959. The substitution of less expensive grains for oats in the feeding of livestock was largely responsible for this decline; such feeding accounts for nearly 90 percent of the apparent consumption of oats (table 2). Prices for oats in the period under review were 5 to 25 percent higher (in terms of feeding value) than those for corn. At the close of 1964 it appeared that the availability of adequate supplies of other feed grains at comparatively low prices would cause the downward trend in the feeding of oats to continue.

A reduction in acreage planted to oats was followed by a decline in the amount used as seed--from 83 million bushels in 1960 to 64 million bushels in 1964. In recent years the quantity of oats used in the manufacture of breakfast foods and flour has been fairly stable at about 40 million bushels annually, while the bulk of the expanding

aggregate market for breakfast foods has been supplied by products made with wheat and corn (see summary on item 182.30).

U.S. producers

In 1964, oats were harvested from 20 million acres on about 1 million farms. The majority of the producers were situated in the North Central States. In 1964, Minnesota, Iowa, and Wisconsin were the principal producing States. The sale of oats affords only a minor source of cash income for virtually all producers; the bulk of their output of oats is utilized as feed for their livestock. Various other farm enterprises provide oat producers with a large share of their income.

U.S. production and stocks

In the period 1959-64, the annual U.S. production of oats averaged 1 billion bushels, valued at $640 million. Production during this period averaged about a fifth less than in the early 1950's. The acreage devoted to the production of oats was smaller in 1964 than in any other year during the last 81 years. The raising of other crops, such as corn, grain sorghum, and soybeans, has been more profitable than that of oats because of the greater per acre returns received from such crops.

In the period 1959-64, the yearend stocks on farms and in elevators, warehouses, and mills ranged from 267 million to 325 million bushels; at the close of the 1964 crop year they were equivalent to nearly a third of the production in that year. During the aforementioned 6-year period yearend stocks owned by the Government averaged less than a tenth of the total stocks.

Price-support operations

It is currently mandatory for the Government to support the price of oats at a level deemed comparable to the support price of corn. Producers participating in Government feed grain programs have been able to obtain cash loans on the oats harvested and later either redeem the loan or deliver the oats to the Government. Whether the crop is delivered to the Government generally depends on the relation between the loan rate and the market price at the time the producer disposes of his crop. In 1959-64, the average loan rate ranged from 50 cents to 65 cents per bushel (table 3). Inasmuch as the average prices received by producers during this period usually equaled or exceeded the loan rates, the quantities placed under price support and delivered to the Government were insignificant. In 1964, producers

delivered only 30 million bushels of oats, which was equivalent to 3 percent of production. During the period 1959-64, the Government sold in the domestic market about nine-tenths of the oats thus accumulated; the remainder were sold for export.

U.S. exports

U.S. exports of oats have generally been unimportant relative to domestic production. Nevertheless, in recent years exports have exceeded imports. The volume exported has depended largely on the supplies of feed available in foreign countries, principally in Europe. It has also depended materially on the relationship between oat prices and those of other feed grains, both here and abroad, and particularly on the relationship between U.S. and Canadian oat prices. Therefore, exports have occasionally fluctuated substantially from year to year (table 4). In the decade of the 1950's, annual exports ranged from less than 500,000 bushels to more than 43 million bushels; in the period 1960-62 they averaged 23 million bushels. In 1963, however, U.S. exports amounted to only 5 million bushels; the decline reflected not only the substitution of other feeds for oats by European farmers, but also the reappearance of Canada as an important supplier of oats to Western Europe. In recent years the Netherlands and West Germany have been the principal markets for U.S. exports.

In the late 1950's, when U.S. prices for oats were higher than foreign prices, a large part of the exports were made under Government programs designed to encourage such shipments. Such programs usually involved direct or indirect subsidies. In 1962 and 1963, notwithstanding U.S. price-support programs, domestic oats were generally priced competitively in world markets with oats from other suppliers, and Government-assisted exports ceased.

U.S. imports

No long-time trend has been evident in the U.S. imports of oats. In the period 1959-64, imports were equal to less than 1 percent of the apparent domestic consumption. The volume of U.S. imports has depended not only on the respective supplies available in both the United States and Canada (virtually the only U.S. source of imports), but also on the world demand for oats and the resulting price relationships. The spread between the prices of Canadian and domestic oats is often several times the U.S. rate of duty. Accordingly, in years when prices in the United States are appreciably higher than those in Canada, Canadian oats enter in large volume; e.g., in 1950-53, annual U.S. imports averaged 70 million bushels. In 1959-61, when Canadian prices were generally considerably higher than U.S. prices, imports averaged only 1.4 million bushels a year (table 5). In 1962-64, however, imports averaged 3.8 million bushels each year,

reflecting increased production and lower prices in Canada. In the period 1959-64, the annual imports of milled oats not fit for human consumption (unhulled ground oats) accounted for less than 4 percent of the combined imports of the grain and the milled product. The bulk of the imports of both oats and milled oats generally enter at ports adjacent to the feed deficit areas of the Northeast.

In recent years less than 3 percent of the world oat crop has entered international trade. Production in Canada has averaged about a third of U.S. production. Canadian exports, which amounted to about 5 percent of that country's production in 1962-64, have gone principally to countries in Western Europe. Other important oat-exporting countries have been Argentina and Australia; the bulk of the shipments from these countries have gone to Europe and Asia.

Absolute quotas on U.S. imports were established pursuant to investigations made by the U.S. Tariff Commission in 1953 and 1954 under the provisions of section 22 of the Agricultural Adjustment Act, as amended (7 U.S.C. 624). In both investigations the Commission determined in effect that an increase in imports of oats and unhulled ground oats would interfere with the Government's price-support program for oats. The President issued Proclamation No. 3041 in 1953 (3 CFR 1949-1953 Comp., p. 213) and Proclamation No. 3070 in 1954 (3 CFR 1954-1958 Comp., p. 20) imposing quotas on imports of oats and unhulled ground oats. From December 23, 1953, to September 30, 1954, imports were limited to 2.5 million bushels from sources other than Canada. Meanwhile, Canada voluntarily limited its exports of oats to the United States to 23 million bushels during the period December 10, 1953, to September 30, 1954. From October 1, 1954, to September 30, 1955, the quota for all countries was 40 million bushels, of which Canada was allocated more than 98 percent. Since that time the United States has not imposed import quotas on oats, and Canada has not restricted exports to the United States.

Table 1.--Oats: U.S. production, imports for consumption, exports of domestic merchandise, yearend stocks, and apparent consumption, crop years 1959-64

(In millions of bushels)

Year beginning July 1--	Farm production	Imports 1/	Exports	Yearend stocks 2/	Apparent consumption
1959	1,052	2	37	267	1,116
1960	1,155	1	27	325	1,071
1961	1,011	1	19	277	1,041
1962	1,020	4	23	274	1,004
1963	979	4	5	315	937
1964	882	4	4	283	914

1/ Includes milled oat products not fit for human consumption.

2/ Includes private and Government stocks on farms and in elevators, warehouses, and mills.

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

Table 2.--Oats: Apparent consumption, by use, crop years 1959-64

(In millions of bushels)

Year beginning July 1--	Livestock feed	Seed	Food	Total
1959	995	79	42	1,116
1960	946	83	42	1,071
1961	921	76	44	1,041
1962	887	73	44	1,004
1963	826	67	44	937
1964	806	64	44	914

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

Table 3.--Oats: Price-support operations, crop years 1959-64

Year beginning July 1--	Average loan rate	Average price received by farmer	Quantity placed under price support	Deliveries to the Government		Government stocks at yearend
				Quantity	Ratio to production	
	Per bushel	Per bushel	Million bushels	Million bushels	Percent	Million bushels
1959	$0.50	$0.65	8	1/	2/	15
1960	.50	.60	20	1/	2/	9
1961	.62	.64	21	8	1	14
1962	.62	.62	32	20	2	17
1963	.65	.63	39	30	3	28
1964	.65	.63	43	30	3	42

1/ Less than 500,000 bushels.
2/ Less than 0.5 percent.

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

Table 4.--Oats: U.S. exports of domestic merchandise, by specified markets, crop years 1959-64

Country	Year beginning July 1--					
	1959	1960	1961	1962	1963	1964
	Quantity (million bushels)					
Netherlands	18.1	19.3	5.3	9.7	2.2	2.4
West Germany	12.3	1.9	6.0	4.6	.4	.8
Belgium and Luxembourg	1.8	2.4	.7	.9	.2	.5
Switzerland	1.3	2.0	.4	1.3	.2	.1
All other	3.8	1.2	6.2	6.3	1.8	.3
Total	37.3	26.8	18.6	22.8	4.8	4.1
	Value (million dollars)					
Netherlands	12.8	14.3	3.9	6.9	1.5	1.6
West Germany	9.9	1.3	4.2	3.4	.3	.5
Belgium and Luxembourg	1.3	1.7	.5	.6	.2	.3
Switzerland	.8	1.3	.3	.8	.1	.1
All other	2.7	.8	4.6	4.9	1.4	.4
Total	27.5	19.4	13.5	16.6	3.5	2.9

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

Table 5.--Oats (grain) and milled oats not fit for human consumption: U.S. imports for consumption, crop years 1959-64 1/

Year beginning July 1--	Grain	Milled oats not fit for human consumption 2/	Total
	Quantity (million bushels)		
1959	1.8	0.1	1.9
1960	1.3	3/	1.3
1961	1.1	3/	1.1
1962	3.8	.1	3.9
1963	3.5	.1	3.7
1964	3.5	.2	3.8
	Value (million dollars)		
1959	1.9	0.1	2.0
1960	1.4	4/	1.4
1961	1.2	4/	1.2
1962	3.3	.1	3.4
1963	3.0	.1	3.1
1964	3.1	.2	3.2

1/ Virtually all were imports from Canada.
2/ Converted from pounds to bushels at the rate of 32 pounds per bushel.
3/ Less than 50,000 bushels.
4/ Less than $50,000.

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

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

Commodity	TSUS item
Rice:	
Paddy or rough rice	130.50
Brown rice	130.55
Milled rice products:	
Fit for human consumption:	
Milled rice	131.30, -.31
Broken rice	131.33
Rice meal and flour	131.35
Patna rice	131.37
Not fit for human consumption	131.67

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

In recent years the United States has ranked third as an exporter of rice. During 1960-64, when 55 percent of U.S. rice production was exported, the average annual value of U.S. exports of rice and rice products was $154 million. U.S. imports have been negligible.

Description and uses

Rice is a cereal grain which is the staple food for about half of the world's population. Paddy or rough rice is rice which has been threshed but from which the hulls have not been removed. Most paddy rice is eventually milled for food or industrial use; the small remainder is used as seed or feed.

Brown rice consists of paddy rice from which only the hull has been removed. Although some brown rice is utilized for food, most is further processed to remove the bran layers and the germ, and is then known as milled, polished, or cleaned rice. Milled rice is usually coated with glucose and talc to improve its appearance. It is in this form that most rice is marketed in the United States for food.

During the milling process some of the kernels are broken, resulting in several grades of rice. The trade designates the grades as head rice, which is mostly whole kernels; second heads, which consist of the largest pieces of broken kernels; screenings, which are the next smaller pieces; and brewers' rice, the smallest pieces of broken kernels. For tariff purposes, broken rice (item 131.33) consists of broken kernels which will pass readily through a metal sieve with

round holes 11/128 inch in diameter, and milled rice (items 131.30 and 131.31) consists of whole kernels or larger pieces.

Head rice and second heads are ordinarily used as a table food after boiling; they are also used in various breakfast-food products. Screenings are generally used as livestock feed, in making fermented beverages, and in the manufacture of starch and flour. In the production of beer, brewers' rice is used as a malt adjunct or additive; it helps to clarify the beer and to make it retain its desired characteristics longer. Brewers' rice competes with corn grits in the brewing industry.

Rice meal and flour (item 131.35) are obtained by grinding milled rice and are used principally in the manufacture of infant and breakfast foods. Patna rice (item 131.37) is the commercial designation for several varieties of long grain, hard rice that are especially suited, after parboiling, for use in the manufacture of soups and other processed foods because the kernels do not disintegrate under pressure cooking. Parboiling is the process whereby the rice is soaked in water, steamed, and dried. The parboiled rice is then milled in the usual way.

This summary also includes all the milled rice products that are not suitable for human use (item 131.67), usually because of damage or contamination. Excluded are wild rice (item 182.70) and byproducts and wastes of milling rice, such as rice bran (included in item 184.10), particles of polish (included in item 184.70), and hulls (included in item 184.40).

U.S. tariff treatment

The current column 1 rates of duty applicable to imports (see general headnote 3 in appendix A) are as follows:

TSUS item	Commodity	Rate of duty
	Rice:	
130.50	Paddy or rough rice	1.25¢ per lb.
130.55	Brown rice	1.5¢ per lb.
	Milled rice products:	
	Fit for human consumption:	
131.30	Milled rice	2.5¢ per lb.
131.31	If product of Cuba	2¢ per lb.
131.33	Broken rice	0.3125¢ per lb.
131.35	Rice meal and flour	0.3125¢ per lb.
131.37	Patna rice	Free
131.67	Not fit for human consumption	31.25¢ per 100 lbs.

For products of the Philippine Republic (which in recent years have accounted only for a small portion of the annual imports of milled rice provided for in item 131.30), the current rates of duty are--as indicated in part c of general headnote 3 mentioned above--40 percent of the column 1 rates, e.g., 1 cent per pound for item 131.30.

The rates of duty applicable to broken rice and to rice meal and flour reflect concessions granted by the United States in the General Agreement on Tariffs and Trade; these rates have been in effect since January 1948. The rate applicable under the new provision of the TSUS for rice products not fit for human consumption is also considered to be a trade-agreement rate. Prior to August 31, 1963--the effective date of the TSUS--the various provisions for milled rice included rice fit for human consumption and that unfit for human consumption. The present rate of duty on milled rice products not fit for human consumption is equal to the lowest rate formerly applicable to dutiable milled rice products. The rates applicable to paddy rice, brown rice, milled rice, and patna rice are those originally provided in the Tariff Act of 1930, not trade-agreement rates. The rate shown for item 131.31, the preferential rate for products of Cuba, was suspended on May 24, 1962. Imports from Cuba have been prohibited since February 7, 1962.

Imports of seed or paddy rice into the United States are prohibited from all countries except Mexico by U.S. Department of Agriculture Plant Quarantine No. 55, which became effective in September 1923; imports from Mexico must be inspected. The purpose of the quarantine is to prevent the introduction of certain plant diseases and insect pests.

Based on imports in 1964, the ad valorem equivalent of the 2.5-cent rate for milled rice (item 131.30) was equivalent to 12.5 percent ad valorem; for the imports from the Philippine Republic, which were dutiable at 20 percent of the column 1 rate (0.5 cent per pound), the ad valorem equivalent was 2.9 percent. In 1964 the rate for broken rice (item 131.33) was equivalent to 5.0 percent; that for rice meal and flour (item 131.35), to 1.9 percent; and that for milled rice products not fit for human consumption (item 131.67), to 2.1 percent. During 1960-64 there were no imports of paddy rice (item 130.50) or of milled rice that was the product of Cuba (item 131.31).

After the TSUS became effective on August 31, 1963, brown rice and wild rice were both classified as brown rice under item 130.55 and were dutiable at the rate of 1.5 cents per pound. Prior to August 31, 1963, imports of wild rice were classified under the provision for raw or unmanufactured articles not specially provided for, Tariff Act of 1930, as modified, and were dutiable at 5 percent ad valorem. This rate was reestablished by Public Law 89-241, effective December 7, 1965, with the establishment of a new provision for wild rice (item 182.70). Imports entered in 1964 under item 130.55 as brown rice consisted primarily of wild rice and mixtures of brown and wild rice from

Canada; they had an average value of $1.82 per pound, compared with 12 cents per pound for the small imports in 1963 of the types of rice commercially known as brown rice. Accordingly, the ad valorem equivalent of the 1.5-cent-per-pound duty based on 1963 imports--12.4 percent--is more representative of the level of the current duty on the brown rice of commerce than is the corresponding computation based on 1964 imports--0.8 percent. Patna rice is duty free if it has been cleaned and is imported for use in the manufacture of canned soups; other patna rice is dutiable under one of the various other provisions for rice, depending on the stage of processing.

U.S. consumption

In the period 1960-64 the total annual quantity of rough rice processed, sown, and fed to animals in the United States increased from 5,241 million pounds to 7,061 million pounds (table 1) and averaged about 23 percent more than it did during the period 1955-59. Approximately 96 percent of the annual output of the rough rice was milled, and virtually all of the remainder was used as seed, with only small amounts fed to livestock. About half of the annual disappearance (consumption including milling, and exports) of rough rice during the late 1950's and early 1960's was accounted for by rice which was milled for export. The apparent U.S. consumption of rice (U.S. production and imports, less exports) during the years 1960-64 is shown in the following tabulation:

Year	Million pounds rough rice equivalent
1960	2,936
1961	3,118
1962	2,571
1963	2,544
1964	2,839

Annual U.S. consumption of milled rice, which averaged about 1,851 million pounds during 1950-64 (table 2), was only 2 percent greater in 1964 than in 1960 despite a concurrent growth in the population of about 6 percent. Annual per capita consumption of milled rice in the United States, which has averaged about 6.5 percent in recent years, is small in comparison with per capita consumption in the Far East (203 pounds) or world per capita consumption (101 pounds). U.S. per capita consumption of rice in 1960-64 was highest in Puerto Rico, Hawaii, and parts of the Southern States.

The consumption of rice in the manufacture of beer reached a peak of 345 million pounds in 1960 and declined to 292 million pounds in 1964. Brewers have, to some extent, replaced rice with corn; however, rice has certain desirable properties and many brewers are reluctant to change their brewing formulas.

U.S. producers

Texas, Arkansas, Louisiana, and California, in descending order of the size of their 1964 crops, were the principal rice-producing States. In 1959, according to the Census of Agriculture, 10,445 farms produced rice. Rice is the major crop for most producers of this grain, which requires irrigation and special equipment.

In 1963, 74 establishments, with 4,256 employees, were engaged in the milling of rice. The mills were concentrated in the rice-growing areas of Louisiana, with 29 mills, Texas, with 16 mills, and California, with 11. For most of the establishments the milling of rice is the principal source of income.

U.S. production

For many years the trend of annual U.S. production of rough rice has been upward, partly because of Federal programs which have allowed expanded acreage and partly because of increasing yields per acre. In the period 1958-64 the annual rice crop increased 62 percent. The crop harvested during August-November 1963 (the bulk of which was disposed of in 1964) amounted to 7,027 million pounds.

Since only small amounts of rough rice are utilized or exported without being milled, the trend of U.S. production of milled rice (including brown rice) parallels the trend of the production of rough rice. In recent years about 96 percent of the rice crop has been milled; approximately 140 pounds of rough rice is required to produce 100 pounds of milled rice. Thus, in the period 1958-64 the annual output of milled rice increased from 3,052 million to 4,915 million pounds. Approximately 85 percent of the milled rice usually consists of head rice or whole kernels; 6 percent, of second head rice; 6 percent, of brewers' rice; and 3 percent, of screenings.

In the years 1959-64, stocks of milled rice on July 31 ranged from 599 million pounds in 1959 to 148 million pounds in 1963. Stocks of rough rice in the same period ranged from 781 million pounds in 1960 to 314 million pounds in 1962.

Price-support operations

Rice is one of the commodities for which price support is mandatory under existing legislation. A number of programs designed to increase producers' receipts directly or to limit the production of rice and thereby raise market prices have been in operation. Producers participating in these programs have been able to obtain cash loans based on specified rates per hundredweight at the time of harvest with the option of delivering the rice to the Government or

paying off the loan with cash. Producers usually find it advantageous to pay off the loan with cash only when the farm price is higher than the loan rate.

In the period 1960-64 the average annual loan rate ranged from $4.38 to $4.71 per hundredweight (table 3) and was 13 cents to 43 cents below the corresponding average farm price. Annual deliveries of rice to the Government in this period ranged from 3 million to 703 million pounds.

U.S. exports

The United States was a net exporter of both rough rice and milled rice from the 1940's to the early 1960's. In the period 1960-64, annual U.S. exports of rough rice ranged between 50 million pounds in 1960 and 8 million pounds in 1962 (table 4). The exports declined as a result of the loss of the Cuban market and the shift from rough rice to milled rice in the shipments to Canada. Since 1961, Venezuela has been the principal market for U.S. exports of rough rice.

In recent years more than 98 percent of the exports of rice were in the milled form (including brown rice). In 1960-64, annual exports of milled rice ranged from 1,837 million pounds in 1961 to 2,971 million pounds in 1964 (table 5). Milled rice is exported to many countries; the principal destinations have been India, Indonesia, the Republic of South Africa, Nansei and Nanpo Islands, Canada, West Germany, the United Kingdom, Dominican Republic, Liberia, Saudi Arabia, and Ghana. Exports to Cuba, formerly a large market, have been nil since 1960. Exports of brown and parboiled rice have each accounted for about 10 percent of U.S. exports of milled rice in recent years. Canada, West Germany, Israel, the Republic of South Africa, the United Kingdom, and Japan have been the principal markets for brown rice, while Saudi Arabia, the Republic of South Africa, and Liberia have been the principal destinations for parboiled rice. In recent years virtually all exports of milled rice have been under Government programs or have received Government assistance in the form of export payments.

During World War II, U.S. foreign trade in rice and rice products was controlled by licensing both imports and exports. These controls continued until the lapse of section 104 of the Defense Production Act on June 30, 1953. Since that time the Department of Agriculture has continued to promote and assist the exportation of milled rice in connection with its price-support programs for rice and in accord with the broader aims of the Government's foreign aid program.

U.S. imports

U.S. imports of rice, which consisted almost entirely of milled rice products, declined from 62 million pounds in 1960 to 2 million

pounds in 1964. In the period 1960-64, annual imports of milled rice averaged less than 1 percent of domestic production or consumption. Imports of broken rice, the principal import item, were substantially lower in 1963 and 1964 than in any recent earlier year (table 6). Decreased usage of broken rice by the brewing industry and increased supplies from domestic milling operations were largely responsible for the reduction in imports. Belgium, West Germany, and the Netherlands were formerly the principal sources of imports of broken rice; however, in 1963-64 Canada was the only supplier (table 7). All of these countries have highly developed rice-milling facilities although they do not grow rice; they purchase rough or brown rice from the United States, Italy, and various countries in southeast Asia and Latin America.

The small amount of milled rice (item 131.30) imported--309,000 pounds in 1964--consisted of high-valued specialty packs, principally from Italy. U.S. Food and Drug Administration requirements concerning sanitation and insect infestation tend to restrict imports from southeast Asia, the world's largest rice-producing area. The small imports of rice meal and flour (item 131.35) have consisted of specialty packs, principally from Hong Kong. Imports of brown rice and milled rice products not fit for human consumption have been very small. There were no imports of patna rice during 1960-64, and the small imports of paddy or rough rice reported for 1963 are believed to have consisted of products other than paddy or rough rice.

Foreign production and trade

World production and consumption of rice are centered in the Far East; however, the production of rice in other areas is becoming increasingly important. Most rice-deficit areas are striving to increase production. The long-term trend has been toward increased rice production; world output has increased at the rate of about 2 percent per year for the last two decades. The increased production is primarily the result of added acreage, although a few countries have increased their average yields per acre. The 1964 world rice crop is estimated at 362 billion pounds of rough rice, compared with the annual average of 291 billion pounds in 1955-59.

Although world rice production has been increasing, world trade in rice has not expanded in recent years. Most of the rice that enters international trade is handled through direct government-to-government transactions. World exports of rice averaged 12 billion pounds a year during the last decade and showed no upward or downward trend. In the period 1959-64 five Asian countries (Burma, Thailand, mainland China, Cambodia, and Vietnam) annually supplied about two-thirds of the world's rice exports (table 8), while five other Asian countries (Ceylon, India, Indonesia, Pakistan, and Malaya) and Hong Kong accounted for about half of the world rice

imports (table 9). Recently Vietnam has become a net importer of rice, due to disruption of rice production and marketing by war. Japan, a large rice producer and formerly a major rice importer, is now nearly self-sufficient. Virtually all the rice entering international trade was milled to some extent.

Long and medium grain rice, which is produced mainly in southeast Asia and the United States, accounts for about 85 percent of world trade in rice. Round grain rice is produced in the more temperate areas of Asia, the Mediterranean area, and parts of Latin America; its share of world trade is much smaller today than in the pre-World War II period.

Production methods, degree of mechanization, use of irrigation, and yield per acre vary greatly among the rice-producing countries. Rice production is mechanized in Italy and the United States; partially mechanized in Latin America, Africa, and Japan; and essentially accomplished by hand labor in the remainder of Asia.

About 35 percent of the paddy rice area in the Far East is irrigated; about half of this is in India. Most of the rice grown in Latin America and Africa is upland rice, grown without irrigation. The paddy rice grown in North America, Europe, Australia, and Egypt is wholly dependent on irrigation.

Table 1.--Paddy or rough rice: U.S. production, exports of domestic merchandise, stocks on July 31, and apparent consumption, 1960-64

(In millions of pounds)

Year	Farm production 1/	Exports	Stocks on July 31	Apparent consumption			
				For milling 2/	For seed	For feed	Total
1960	5,365	50	781	5,016	209	16	5,241
1961	5,459	15	734	5,263	212	16	5,491
1962	5,420	8	314	5,583	233	16	5,832
1963	6,604	14	565	6,086	237	3/ 16	6,339
1964	7,027	12	519	6,803	242	3/ 16	7,061

1/ On a crop-year basis, beginning Aug. 1 of the preceding year.
2/ See table 2 for supplies and consumption of milled rice (i.e., brown rice and milled rice products).
3/ Estimated.

Source: Production, apparent consumption, and stocks on July 31 compiled from official statistics of the U.S. Department of Agriculture; exports compiled from official statistics of the U.S. Department of Commerce.

Note.--Although negligible quantities of paddy rice were reported to have been imported during the period 1960-64, these imports are believed to have been products other than paddy rice.

Table 2.--Brown rice and milled rice products: U.S. production, imports for consumption, exports of domestic merchandise, stocks on July 31, and apparent consumption, 1960-64

(In millions of pounds, milled basis 1/)

Year	Production 2/	Imports	Exports	Stocks on July 31	Apparent consumption 3/
1960	3,484	62	1,918	305	1,922
1961	3,693	14	1,837	194	1,981
1962	3,969	21	2,310	157	1,717
1963	4,328	1	2,630	148	1,708
1964	4,915	2	2,971	169	1,925

1/ About 140 pounds of rough rice is required to produce 100 pounds of milled rice.

2/ On a crop-year basis, beginning Aug. 1 of the preceding year.

3/ Takes into account the changes in Government and private stocks.

Source: Production and stocks on July 31 compiled from official statistics of the U.S. Department of Agriculture; imports and exports compiled from official statistics of the U.S. Department of Commerce.

Note.--The value of the milled rice produced in 1963 was about $391 million, as reported by the Census of Manufactures.

Table 3.--Rice: U.S. Government price-support operations, for crops of 1959-64

Crop harvested beginning Aug. 1 of--	Average loan rate	Average farm price	Quantity placed under price support	Quantity delivered to the Government
	Per 100 pounds	Per 100 pounds	Million pounds	Million pounds
1959	$4.38	$4.59	937	703
1960	4.42	4.55	1,310	486
1961	4.71	5.14	637	3
1962	4.71	5.04	1,222	183
1963	4.71	5.01	1,003	77
1964	4.71	4.93	763	78

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

Table 4.--Rice, paddy or rough: U.S. exports of domestic merchandise, by principal markets, 1960-64

Country	1960	1961	1962	1963	1964
	Quantity (million pounds)				
Venezuela	3.8	8.5	6.3	9.1	7.9
Peru	-	-	-	1/	3.0
Mexico	.6	1.9	-	3.4	.4
Canada	9.4	1.9	.6	.5	.2
Cuba	34.5	.9	-	-	-
All other	1.4	2.1	1.4	.6	.9
Total	49.7	15.3	8.3	13.6	12.4
	Value (1,000 dollars)				
Venezuela	345	745	511	762	631
Peru	-	-	-	2/	267
Mexico	64	172	-	320	40
Canada	529	104	41	45	24
Cuba	3,052	73	-	-	-
All other	124	176	142	59	70
Total	4,114	1,270	694	1,186	1,032

1/ Less than 50,000 pounds.
2/ Less than $500.

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

Table 5.--Milled rice: U.S. exports of domestic merchandise, by principal markets, 1960-64

Country	1960	1961	1962	1963	1964
	Quantity (million pounds)				
India	708.5	426.1	493.0	736.8	608.9
Republic of South Africa	46.2	98.4	86.7	112.6	128.7
Nansei and Nanpo Islands	51.2	44.5	57.6	192.0	135.8
Canada	20.9	27.7	85.4	99.3	88.7
West Germany	48.7	162.9	159.1	111.1	112.0
United Kingdom	50.3	70.9	73.8	99.1	98.8
Dominican Republic	-	-	12.6	86.7	77.2
Liberia	40.8	50.0	59.4	83.2	77.5
Saudi Arabia	12.3	20.1	46.8	83.9	73.3
Ghana	34.3	85.6	122.1	59.1	73.6
Indonesia	183.8	252.8	492.2	485.7	84.3
All other	720.8	598.4	621.4	481.0	1,412.5
Total	1,917.8	1,837.4	2,310.2	2,630.5	2,971.3
	Value (1,000 dollars)				
India	46,524	26,442	30,779	50,040	43,957
Republic of South Africa	2,751	5,896	6,176	8,721	10,285
Nansei and Nanpo Islands	3,392	2,415	3,384	11,133	9,523
Canada	2,307	2,776	7,274	8,336	7,449
West Germany	2,611	9,026	10,534	7,367	7,407
United Kingdom	2,765	4,128	5,144	6,977	7,182
Dominican Republic	-	-	806	5,703	6,256
Liberia	1,980	2,437	3,778	5,628	5,635
Saudi Arabia	997	1,501	3,590	6,283	5,437
Ghana	1,981	4,861	8,063	4,007	4,947
Indonesia	9,674	13,096	30,094	29,241	4,885
All other	51,036	38,915	43,075	33,597	93,745
Total	126,018	111,490	152,697	177,033	206,708

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

Table 6.--Milled rice products: U.S. imports for consumption, by types, 1960-64

Year	Broken rice	Milled rice	Rice meal and flour	Brown rice	Total
	Quantity (million pounds)				
1960	61.7	0.3	0.3	1/	62.3
1961	13.2	.2	.2	-	13.6
1962	20.9	.3	.2	1/	21.4
1963	.7	.3	.2	1/	1.2
1964	1.1	.3	.3	2/	1.7
	Value (1,000 dollars)				
1960	2,518	33	33	3/	2,584
1961	658	24	31	-	713
1962	1,122	33	30	3/	1,185
1963	47	41	33	5	126
1964	71	62	46	2/	179

1/ Less than 50,000 pounds.
2/ Reported imports of brown rice in 1964 (222 thousand pounds, valued at 402 thousand dollars) are believed to have consisted entirely of wild rice; see U.S. tariff treatment section.
3/ Less than $500.

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

Note.--There have been no imports of patna rice, and imports of milled rice products not fit for human consumption have been negligible in recent years.

Table 7.--Broken rice: U.S. imports for consumption, by principal sources, 1960-64

Country	1960	1961	1962	1963	1964
	Quantity (million pounds)				
Canada	3.9	4.0	-	0.7	1.1
Belgium and Luxembourg	2.7	6.7	8.0	-	-
West Germany	51.3	1.1	5.0	-	-
Netherlands	3.8	1.4	5.0	-	-
Mexico	-	-	2.8	-	-
All other	1/	-	.1	-	-
Total	61.7	13.2	20.9	.7	1.1
	Value (1,000 dollars)				
Canada	235	226	-	47	71
Belgium and Luxembourg	129	323	421	-	-
West Germany	2,013	51	282	-	-
Netherlands	140	58	276	-	-
Mexico	-	-	138	-	-
All other	1	-	5	-	-
Total	2,518	658	1,122	47	71

1/ Less than 50,000 pounds.

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

Table 8.--Rice: Exports, by principal exporting countries, 1959-64

(In millions of pounds, milled equivalent)

Country	1959	1960	1961	1962	1963	1964
Thailand	2,428	2,652	3,501	2,831	3,039	4,180
Burma	3,740	3,857	3,508	3,789	3,683	3,394
United States	1,554	2,198	1,841	2,315	2,639	2,981
China (mainland)	3,750	2,804	772	1,241	1,455	1,587
Egypt	108	669	566	447	912	1,162
Cambodia	428	783	523	283	826	1,047
Italy	341	289	480	397	325	140
Vietnam	542	750	341	185	707	108
All other	1,399	1,310	2,229	2,384	2,038	2,107
Total	14,290	15,312	13,761	13,872	15,624	16,706

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

Table 9.--Rice: Imports, by principal importing countries, 1959-64

(In millions of pounds, milled equivalent)

Country	1959	1960	1961	1962	1963	1964
Indonesia	2,072	2,256	2,466	2,315	2,557	2,425
Ceylon	1,286	1,164	1,135	905	888	1,451
India	698	1,568	893	888	1,124	1,395
Malaya	1,500	1,490	1,420	1,293	1,663	1,316
Japan	611	385	277	392	979	915
Hong Kong	779	817	868	941	908	903
Pakistan	666	714	498	453	538	263
All other	7,298	6,982	5,726	6,416	6,857	7,516
Total	14,910	15,376	13,283	13,603	15,514	16,184

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

Commodity	TSUS item
Rye:	
Grain	130.60
Milled, not fit for human consumption	131.70

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

Since 1960 the great bulk of the domestic consumption of rye, a minor grain crop in the United States, has been supplied by domestic production; although the quantity of annual exports has varied widely, it has been greater than imports.

Description and uses

Rye grain (Secale cereale) is the seed of an annual cereal grass. (For the rye grass seed used for lawns (genus Lolium), see the summary on item 126.77.) In the United States about two-fifths of the acreage planted to rye is harvested for grain; the rye on the remainder is used for pasture or silage or as a winter cover crop, principally in the Southern States. The bulk of the grain is harvested in the Great Plains States. Rye grain is used in the United States primarily for feeding animals; it is also used for seeding and for making flour, alcohol, whiskey, and malt. Currently the bulk of the imports of rye are used in making whiskey and flour; only small quantities of the imports are used for feed and seed. In other parts of the world rye is an important bread grain because of its adaptability to poor soils and cool climates.

Rye grain for use as feed is often ground because animals can utilize it more efficiently in the ground form; as the milling standards for animal feed are lower than those for food products, milled feed products are generally unfit for human consumption. Such milled rye, as well as damaged flour, is included in this summary; however, no data on their domestic output are available, and imports have been negligible or nil for many years. Not included in this summary are the byproducts or wastes resulting from the milling of rye, which are primarily included in the summary on mixed feeds and byproducts obtained in milling grains, item 184.70. Milled rye products fit for human consumption are discussed in the summary on item 131.38.

U.S. tariff treatment

The current column 1 rates of duty applicable to imports (see general headnote 3 in appendix A) are as follows:

TSUS item	Commodity	Rate of duty
	Rye:	
130.60	Grain	6¢ per bu. of 56 lbs.
131.70	Milled, not fit for human consumption.	10.5¢ per 100 lbs.

The rate for rye grain reflects a concession granted by the United States in the General Agreement on Tariffs and Trade (GATT), which became effective in January 1948. There have been no imports of milled rye products not fit for human consumption since August 31, 1963, when a separate classification was established therefor, and imports were probably nil in the years immediately preceding that change. The rate of duty for this category is approximately the same as that applicable to the whole rye grain. Inasmuch as the milled products had previously been dutiable at the same rate as the grain, the 10.5-cent rate is designated a GATT rate.

The ad valorem equivalent of the duty on the whole grain, based on imports in 1964, averaged 4.7 percent, although it ranged from 2.0 to 5.3 percent for individual months. The bulk of the imports had similar unit values and entered at a duty equivalent to 5.1 percent ad valorem.

U.S. consumption, production, and stocks

The annual consumption of rye has not altered significantly for a number of years (table 1). In the crop years beginning July 1 of 1960-64, annual U.S. consumption averaged 24 million bushels. Approximately two-fifths of the total was utilized in feeding livestock, about a fourth was seeded, and a fifth was milled into flour; the remainder (about a sixth) was used in the production of alcohol, whiskey, and malt (table 2).

Rye has been harvested for grain on some 60,000 farms in recent years. The principal producing States have been North Dakota, South Dakota, Nebraska, Kansas, and Washington. Rye generally contributes but a small part of the total farm income of most growers, since other crop and livestock enterprises are usually their major sources of income. Wheat, barley, and flaxseed, the predominant crops grown in most of the major rye-producing areas, generally afford higher returns per acre than rye. However, rye is frequently sown on less productive land, or with poorer seedbed preparation, than is customary for wheat;

moreover, rye can be planted in the fall to protect the soil during the winter from erosion by wind.

Annual domestic production has fluctuated widely for a number of years. In 1960-64, annual U.S. production of rye grain ranged from 28 million to 41 million bushels and averaged 33 million bushels, valued at $33 million (in terms of farm income).

Yearend stocks on farms and in elevators, warehouses, and mills during 1960-64 varied widely, from 5 million to 14 million bushels; nearly a third of the stocks were owned by the Government. Inasmuch as the annual domestic requirements for rye have not fluctuated much in recent years, the volume of both production and exports largely determines the level of stocks.

Price-support operations

The U.S. Government is currently required by law to support the price of rye at a level deemed comparable to the support price of corn in an attempt to stabilize the relationship of these grains as animal feed. Producers participating in Government programs have been able to obtain cash loans on the rye harvested and later either redeem the loans or deliver the rye to the Government. During 1960-64 the annual average loan rate ranged from 90 cents to $1.07 per bushel (table 3). Inasmuch as the annual average prices received by producers during this period were never substantially below the loan rates, only small quantities of rye were placed under price support and delivered to the Government. In 1960-64 the quantity of rye that producers delivered to the Government ranged from 400,000 bushels in 1963 (equivalent to less than 1 percent of the output in that year) to 5 million bushels in 1964 (equivalent to 15 percent of production). Government acquisitions were much greater in the mid-1950's, when the average farm prices were substantially below the loan rates.

U.S. exports

In the period 1960-64, annual exports of rye varied widely, from 3 million to 21 million bushels, and averaged 10 million bushels, valued at $13 million (table 4). Fluctuations in exports generally respond to the supply-demand situation in Europe, the traditional market for U.S. rye. For example, the rye crop in West Germany in 1961 was about a third smaller than average; in the following year U.S. exports to that country were about $3\frac{1}{2}$ times as large as they were in 1961. Moreover, the decline in annual exports from 1962 to 1964 reflects the substitution of corn for rye as a feed by West German farmers.

In the late 1950's and early 1960's, when U.S. prices of rye were generally higher than foreign prices, a large part of U.S. exports were made under Government programs designed to encourage their exportation. Such programs usually involved direct or indirect subsidies. During 1962-64, notwithstanding U.S. price-support programs, domestic rye was generally priced competitively in world markets with rye from other suppliers, and Government-assisted exports ceased.

U.S. imports

Annual U.S. imports declined from 2.7 million bushels in 1960 to 0.5 million bushels in 1962 and then increased to 2.4 million bushels, valued at $2.9 million, in 1964. In 1960-64, annual imports accounted for 2 to 11 percent of apparent consumption. Canada was the only source of imports during this period; the bulk of the rye entered at the Chicago customs district. U.S. imports are influenced by the size of the U.S. and Canadian supplies and the market demand in Europe for North American rye.

In investigations made in 1954, 1955, 1957, and 1959, under the provisions of section 22 of the Agricultural Adjustment Act, as amended (7 U.S.C. 624), the U.S. Tariff Commission determined in effect that rye and rye flour and meal were practically certain to be imported under such conditions and in such quantities as to interfere materially with the Government's price-support program for rye. After consideration of the Commission's findings in those investigations, the President issued Proclamations Nos. 3048, 3101, 3189, and 3306, respectively (3CFR, 1954-1958 Comp., pp.6, 45, and 117; 1959-1963 Comp., p.42), establishing absolute quotas on U.S. imports of rye. For the crop years 1954-60, the absolute annual quotas averaged 186 million pounds (3.3 million bushels), of which not more than 15,000 pounds could consist of the milled products. Imports of certified or registered seed rye for use in seeding or crop-improvement purposes were exempt from the quota. Beginning July 1, 1955, the quotas were allocated among supplying countries; Canada's share was 98 percent. The quota was permitted to expire on June 30, 1961, because of a drought. Since 1961, annual imports have been less than the 1960 quota of 3.3 million bushels.

World production and trade

World production of rye has been at a lower level in recent years than in the 1920's and 1930's. In the early 1960's rye comprised about 5 percent of world grain output. The decline in output has been largely in response to (1) the diminishing popularity of rye, both as a bread grain and as a feed grain in Western Europe, (2) Government price policies in many countries which generally lack incentives to

produce rye, and (3) the minimal and unstable export markets for rye. During 1960-64 the U.S.S.R. produced 41 percent of the world output; Poland, 23 percent; West Germany, 10 percent; East Germany, 5 percent; and the United States, 3 percent.

International trade in rye has generally been small compared with that in other grains. During 1960-64, the U.S.S.R. supplied 58 percent of the world exports; the United States, 15 percent; Canada, 7 percent; and West Germany, 5 percent. The bulk of the exports from the U.S.S.R. have gone to Eastern Europe and to mainland China, while the remaining exporting countries have had their principal markets in Western Europe.

Table 1.--Rye grain: U.S. production, imports for consumption, exports of domestic merchandise, yearend stocks, and apparent consumption, crop years 1960-64

Year beginning July 1--	Farm production	Imports	Exports	Yearend stocks 1/	Apparent consumption	Ratio of imports to consumption
	Million bushels	Million bushels	Million bushels	Million bushels	Million bushels	Percent
1960	33.0	2.7	7.7	14.2	24.3	11
1961	27.5	.7	7.5	7.9	27.0	3
1962	40.8	.5	20.7	6.9	21.6	2
1963	29.2	.6	10.0	5.3	21.4	3
1964	33.3	2.4	3.5	12.9	24.6	10

1/ Includes private and Government stocks on farms and in elevators, warehouses, and mills.

Source: Production, apparent consumption, and stocks compiled from official statistics of the U.S. Department of Agriculture; imports and exports compiled from official statistics of the U.S. Department of Commerce.

Table 2.--Rye grain: Apparent consumption, by use, crop years 1960-64

(In millions of bushels)

Year beginning July 1--	Feed	Seed	Food	Alcohol and distilled spirits	Total
1960	9.1	5.7	4.5	5.0	24.3
1961	11.5	6.5	4.5	4.5	27.0
1962	7.1	6.1	4.7	3.7	21.6
1963	6.7	6.3	4.7	3.7	21.4
1964	9.9	6.0	4.9	3.8	24.6

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

Table 3.--Rye grain: Price-support operations, crop years 1960-64

Year beginning July 1--	Average loan rate	Average price received by farmer	Quantity placed under price support 1/	Deliveries to the Government		Government stocks at yearend
				Quantity	Ratio to production	
	Per bushel	Per bushel	Million bushels	Million bushels	Percent	Million bushels
1960	$0.90	$0.88	5.1	2.0	6	4.3
1961	1.02	1.01	1.6	.6	2	2.6
1962	1.02	.95	6.1	1.4	3	1.6
1963	1.07	1.08	1.5	.4	1	.8
1964	1.07	1.03	5.3	4.8	14	5.0

1/ Growers received loans on all rye placed under support. Rye for which the loans were not repaid became the property of the Government.

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

Table 4.--Rye grain: U.S. exports of domestic merchandise, by principal markets, crop years 1960-64

Country	Year beginning July 1--				
	1960	1961	1962	1963	1964
	Quantity (million bushels)				
West Germany	0.4	3.4	12.4	1.3	2.4
Netherlands	1.6	3.2	5.5	4.3	.4
Canada	1/	1/	.4	2.2	.3
Japan	2.4	.2	.1	.2	.1
Norway	2.0	.5	1.1	.6	-
All other	1.3	.2	1.2	1.4	.3
Total	7.7	7.5	20.7	10.0	3.5
	Value (million dollars)				
West Germany	0.4	4.9	16.4	1.8	1.3
Netherlands	1.9	4.2	7.3	6.1	.5
Canada	2/	2/	.5	2.9	.4
Japan	2.9	.2	.2	.3	.1
Norway	1.9	.7	1.5	.9	-
All other	1.4	.1	1.6	2.2	.4
Total	8.5	10.1	27.5	14.2	2.7

1/ Less than 50,000 bushels.
2/ Less than $50,000.

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

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

Commodity	TSUS item
Wheat:	
Grain not fit for human consumption	130.65
Other grain	130.70
Milled, not fit for human consumption:	
Flour	131.72
Other	131.75

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

Wheat grain is the leading agricultural export of the United States in terms of dollar value. In 1959-64 the volume of U.S. exports, equivalent to nearly half of domestic production, supplied about 40 percent of the world trade in wheat. U.S. imports have been negligible; those of wheat for human consumption have been under quota restriction.

Description and uses

Wheat, the seed of an annual cereal grass, is generally classified as hard, soft, or durum wheat on the basis of kernel characteristics. Most wheat is milled into flour and meal and further processed to make products for human consumption. Hard wheat is high in protein and gluten, and the flour made from it is preferred for making bread. Breakfast foods to be prepared by the consumer, such as farina, are also made from hard wheat. Soft wheat, containing less protein, is used mainly for cake, cracker, biscuit, and pastry flours; prepared breakfast foods, such as wheat flakes, are also made from soft wheat. In addition to these uses, wheat is used in significant quantities for seeding purposes and as livestock feed and, in small amounts, for the manufacture of starch, gluten, and alcohol. A large part of the wheat used as feed is ground either on the farm or by feed mills.

Imported wheat is in effect classified according to use, i.e., for human consumption or other use. An import quota presently limits imports fit for human use to a fixed quantity, virtually all of which is milled into flour. Imports of wheat not fit for human consumption consist of two quite different classes: (1) chemically treated seed wheat and (2) wheat not of milling quality because it has been damaged in shipment, by frost, or otherwise. Of these two classes, seed wheat is the more important. The imported seed, principally from Canada, consists of strains well adapted to certain areas of the United States.

Milled wheat products not fit for human consumption consist of flour, cracked and ground wheat, and similar milled products which have been damaged, spoiled, or otherwise rendered unfit for human use; these products usually have commercial value only as feed or feed additives. Products in this category, which does not include by-products and wastes resulting from milling, have been insignificant in international trade. Byproducts and wastes resulting from milling are primarily included in the summary on animal feeds (item 184.70 et al). Wheat flour fit for human consumption (item 131.40) is generally higher in both quality and value than the milled products not fit for human consumption.

U.S. tariff treatment and other restrictions on imports

The current column 1 rates of duty applicable to imports (see general headnote 3 in appendix A) are as follows:

TSUS item	Commodity	Rate of duty
	Wheat:	
130.65	Grain not fit for human consumption-----	5% ad val.
130.70	Other grain----------	21¢ per bu. of 60 lbs.
	Milled, not fit for human consumption:	
131.72	Flour----------	2.5% ad val.
131.75	Other----------	5% ad val.

The above rates were derived from concessions granted by the United States in the General Agreement on Tariffs and Trade; the concessions have been in effect since January 1948. Although the ad valorem equivalents of the duty on imports of wheat fit for human consumption entered in individual months in 1964 ranged from 3.6 to 11.1 percent, the ad valorem equivalent of the duty on the bulk of the imports in that year was 11.0 percent.

Bureau of Customs Regulations, sec. 10.106 (19 CFR 10.106), presently require importers to file a declaration for each entry of wheat not fit for human consumption. When the importer's declaration shows that all of the wheat is to be used otherwise than in the manufacture of food products, the usual requirement is that the shipment consist of "wheat containing 30 percent or more by weight of damaged kernels" (T.D. 47577, Mar. 13, 1936). When the wheat is to be used for the manufacture of products for human consumption, the shipment is classified as other wheat (item 130.70).

In an investigation made in 1941 under the provisions of section 22 of the Agricultural Adjustment Act, as amended (7 U.S.C. 624), the

U.S. Tariff Commission determined in effect that wheat for human consumption and wheat flour were practically certain to be imported under such conditions and in such quantities as to interfere materially with the Government's price-support program for wheat. After consideration of the Commission's findings, the President on May 29, 1941, issued Proclamation No. 2489 (3 CFR, Cum. Supp., p. 235), establishing, effective on that date, absolute annual import quotas of 800,000 bushels of wheat fit for human consumption and 4 million pounds of wheat flour fit for human consumption. That proclamation was modified in 1942 by Presidential Proclamation No. 2550 (3 CFR, Cum. Supp., p. 299), which exempted distress shipments and experimental or seed wheat from the quota. Canada was allotted 795,000 bushels (99.4 percent) of the wheat quota, and the remainder, 5,000 bushels, was apportioned among the 13 other countries which had exported wheat to the United States during the period from January 1, 1929, to December 31, 1933. For the allocation of the quota by countries, see item 950.60 in appendix A.

U.S. consumption

In recent years more than half of the annual U.S. wheat crop has been domestically consumed as food, seed, or feed; the remainder has been either exported as grain, or placed in storage (table 1). In the crop years beginning July 1 of 1959-64, annual U.S. apparent consumption of wheat averaged some 700 million bushels; of this amount about 500 million bushels was utilized as food (chiefly in the form of flour used for baking purposes), 100 million bushels was domestically processed and exported as flour, 60 million was used as seed, and about 45 million was fed to livestock (table 2). Only a small amount of wheat (less than 1 percent of apparent consumption) was used in the manufacture of distilled spirits and other industrial products.

The demand for wheat for food consumption in the United States has generally been insensitive to price changes. Instead, dietary dependence on foods with wheat content has varied inversely with the standard of living, and per capita human consumption of wheat foods (e.g., flour, breakfast foods) has declined in the United States as per capita disposable income has risen. Annual per capita consumption of these products declined from 210 pounds in 1910 to 115 pounds in 1964. The decline in per capita consumption, however, has been sufficiently offset by the increase in population to have resulted in a slight increase in the level of aggregate human consumption of wheat.

There has been no significant change in the annual quantities of wheat used for seed purposes in recent years inasmuch as the number of acres planted to wheat has not changed materially. The small quantity of wheat fed to livestock fluctuates from year to year; the prices of wheat in relation to those of the traditional feed grains largely determine the amount of wheat fed to livestock. During the 1964 crop year, wheat prices were at feed grain levels in many areas, and about $2\frac{1}{2}$ times as much wheat was fed that year as in 1963 or 1962.

The bulk of the wheat consumed as a feedstuff is fed on farms where it is grown, mainly in the Northeast and the South.

U.S. producers

In 1964, 49 million acres of wheat were harvested on about 900,000 farms that represented approximately a fourth of all the farms in the United States. The five principal producing States in 1964 were Kansas, North Dakota, Oklahoma, Montana, and Washington; these States together produced nearly half of the domestic crop. The major area of production of hard wheat is in the Great Plains, extending from the Dakotas to Texas, whereas the areas of production of soft wheat are east of the Mississippi River and on the west coast; most durum wheat is grown in the northern Great Plains. Wheat is the major source of income on many farms although almost all of these farms have other crops and livestock. Each year about 95 percent of the domestic wheat crop is sold from the farms; the remainder is used on the farms for seed and feed.

The number of farms on which wheat is grown has been declining in recent decades. The remaining farms have become larger, and many have diversified their operations. Although producers have reduced their acreage planted to wheat, they have expanded their output by the use of improved cultural practices.

U.S. production and stocks

Notwithstanding attempts by the Government to reduce domestic wheat production, no downward trend in output has been evident for a number of years. During 1959-64, annual U.S. production averaged 1.2 billion bushels; hard wheat comprised 68 percent of the total output, soft wheat, 29 percent, and durum wheat, 3 percent. Although the annual acreage harvested averaged about 30 percent less in 1959-64 than in a similar period a decade earlier, production remained virtually unchanged, largely because of a 50-percent increase in the average yield per acre.

At the close of 4 of the 6 crop years in the period 1959-64, total stocks on farms and in elevators, warehouses, and mills were higher than the corresponding annual output; yearend stocks in 1963 were equivalent to four-fifths of the production in that year, and those in 1964, to nearly two-thirds of the production. During the aforementioned 6-year period, nearly 90 percent of the yearend stocks were owned by the Government. An annual decline in yearend stocks from 1960 to 1964 was due largely to the high level of exports, to an increase in domestic use, and to the disposal of some stocks by the Government in conjunction with its programs limiting acreage. Stocks declined by such an extent that they are expected to be equivalent,

at the end of the 1965 crop year, to about 1 year's supply for domestic food consumption and seed. Government funds to compensate growers that voluntarily diverted wheat acreage to other uses in 1962-64 were derived from sales of wheat from Government stocks.

Price-support operations

Wheat is one of the commodities for which price support is mandatory under existing law. Government programs designed to raise wheat growers' receipts directly, or to limit the production of wheat and thereby raise market prices, have been in operation for many years. Producers participating in these programs have been able to obtain cash loans at specified rates per bushel at the time of harvest and later either redeem the loans or deliver the wheat to the Government. In most years, participants in the price-support programs were required to restrict their wheat acreages to their proportional shares of the national mandatory acreage allotment. The national allotment was 55.0 million acres each year in the period 1959-63, 49.5 million acres in 1964 and 1965, and 47.8 million acres in 1966. An increase in the allotment for the 1967 crop to 55.0 million acres reflects the expectation that total demand for U.S. supplies will continue high. Whether a particular crop is delivered to the Government generally depends on the relation of the market price to the loan rate at the time the producer disposes of his crop. In addition to obtaining loans, in some years producers have received compensation for land diverted to soil-conserving uses.

In the period 1959-63, the annual average loan rate available to producers ranged from $1.78 to $2.00 per bushel (table 3). In 1964, price support was available to producers at three levels. The loan rate, which averaged $1.30 per bushel, was available to all producers planting within their farm acreage allotments. To producers diverting part of their allotments to soil-conserving uses, additional payments in the form of domestic and export marketing certificates were made. The domestic certificates, issued for 45 percent of the normal production of the farm allotment, were valued at 70 cents per bushel; the export certificates, issued for an additional 45 percent of normal allotment production, were valued at 25 cents per bushel. Therefore, the price support for domestic food wheat amounted to $2.00 per bushel and that for export wheat, to $1.55 per bushel; the remaining 10 percent of the output was supported at $1.30 per bushel. Processors and exporters of wheat were required to purchase marketing certificates from the Government for the amounts of wheat they milled or exported. The funds from the purchases of the certificates were used to pay the producers of wheat. The annual average farm prices during 1959-64 did not vary materially from the loan rates. During 1959-63, the amount of wheat delivered to the Government in each crop year by producers ranged from 70 million to 258 million bushels and averaged 155 million bushels. The substantial reductions in deliveries in 1963

and 1964 (compared with those in other years) are largely attributable to sharply increased exports, which caused domestic farm prices to rise above the loan rates. Therefore, producers elected to dispose of their wheat in the market rather than deliver it to the Government.

U.S. exports

The United States has long been a net exporter of wheat, and during 1959-64 accounted for about 40 percent of world exports. In this period, annual U.S. exports of wheat ranged from 414 million to 750 million bushels (table 4) and averaged 582 million bushels, valued at $1.0 billion. Additional exports of wheat in the form of flour and processed food products averaged 100 million bushels (grain equivalent) a year in the period 1959-64. Exports of the grain were equivalent to about half of domestic production, and to four-fifths of apparent consumption. Exports will probably continue to be large to meet world requirements for U.S. wheat.

U.S. exports fluctuate widely from year to year, principally because of annual changes in supplies of food grains available in importing countries. An example of an unexpected market development causing such fluctuations was the consummation of a substantial sale of U.S. wheat to the U.S.S.R. in 1963. Of the more than 50 countries to which the United States regularly exports wheat, 10 countries received 70 percent of the U.S. wheat exports in the period 1959-64. A large part of U.S. exports went to countries in Asia and Europe (table 4).

The bulk of the U.S. exports of wheat since World War II have been made with the benefit of Government assistance because (1) price-support programs have maintained domestic wheat prices at levels above those in foreign countries, and (2) many underdeveloped countries have been unable to buy wheat without financial assistance. U.S. exports, therefore, would probably have been at a lower level in the absence of Government export programs. About 70 percent of the exports during 1959-64 were under programs which included sales for foreign currencies, barter sales for strategic materials, and donations. The remaining 30 percent consisted of commercial sales by U.S. exporters that received an export payment from the Government to compensate for the differences between foreign prices and U.S. prices. In 1964 the average export payment ranged from 16 cents to 24 cents per bushel (the difference depending on the class of wheat and the port of export).

U.S. imports

U.S. imports of wheat have been negligible in recent years. In the period 1959-64, annual U.S. imports ranged from 1 million to 8

million bushels and averaged a little under 5 million bushels, a quantity equivalent to less than 1 percent of apparent consumption. Virtually all imports came from Canada.

U.S. imports during 1959-64 consisted largely of wheat not fit for human consumption, inasmuch as an absolute annual quota limited wheat fit for human consumption to 800,000 bushels (table 5). The bulk of the imports of wheat not fit for human consumption consisted of chemically treated seed, whereas all of the wheat entered within the quota was for milling into flour. Small amounts of wheat fit for human use but actually imported for seeding or experimental purposes have been exempt from the quota restriction (see U.S. tariff treatment section). The following tabulation shows U.S. imports of wheat, by kind, for the 10-month period September 1963-June 1964 and the crop year beginning July 1, 1964:

Item	Not fit for human consumption		Fit for human consumption	
	Seed	Other	Seed	Other
September 1963-June 1964: 1/				
Quantity---------1,000 bushels--	2,382	242	6	704
Value------------1,000 dollars--	5,090	411	14	1,327
Unit value per bushel----------	$2.14	$1.70	$2.14	$1.89
July 1964-June 1965:				
Quantity---------1,000 bushels--	741	6	4	91
Value------------1,000 dollars--	1,543	7	19	185
Unit value per bushel----------	$2.08	$1.21	$4.33	$2.02

1/ Data on imports of wheat, by kind, before September 1963 are not available.

Seed wheat is generally higher in value than either wheat for milling or wheat for feeding to livestock.

The decline in U.S. imports during 1960-64 is attributed to the rising prices of Canadian wheat caused by that country's unusually large exports to Communist-dominated countries. In 1964, market prices in Canada averaged about 5 percent higher than U.S. prices.

U.S. imports of damaged milled wheat (i.e., that not fit for human use) have been insignificant. In the calendar year 1964, imports reported in this category amounted to 20 million pounds, valued at $555,000. Virtually all of these imports, however, were comprised of second-clear wheat flour (a grade of flour generally not used in the United States for baking). Under the tariff law in effect prior to August 31, 1963, it had been judicially determined (in C.D. 736)

that second-clear wheat flour was a byproduct of milling wheat. In accordance with the TSUS, both wheat flour not fit for human consumption (item 131.72) and milled byproducts (item 184.70) are dutiable at the rate of 2.5 percent ad valorem.

Foreign production and trade

In recent years the United States has been the second largest producer of wheat, surpassed only by the U.S.S.R. These countries, together with mainland China, Canada, India, France, Australia, and Argentina account for about 70 percent of world wheat production. World production has been increasing for a number of years; the average annual output during 1959-64 was a fourth larger than that in 1949-54. Although production has increased to some extent in virtually all countries, the largest gains have been in Australia and in Turkey, India, and mainland China, where both acreage and per acre yields have increased substantially.

Five countries have supplied the bulk of the world exports of wheat in recent years. World supplies and exports of wheat by major exporting countries, 1962-63 annual average, were as follows (in millions of bushels):

Country	Supplies 1/	Exports
United States	2,379	640
Canada	1,084	401
Australia	339	204
France	561	85
Argentina	270	84
All other	3,905	183
Total	8,538	1,597

1/ Includes stocks, production, and imports.

Although these five countries held about half of the world supply of wheat, they provided nearly 90 percent of the total world exports in 1962 and 1963. Australia exported the largest share of its supplies, 60 percent, and France the smallest, 15 percent; about 25 percent of the U.S. supplies were exported. Western Europe has been an important market for each of these exporting countries. Additional important markets for these countries have been, for Canada--the U.S.S.R. and mainland China; for France--Poland and mainland China; for Australia--the U.S.S.R. and India; and for Argentina--Brazil, Peru, and mainland China. The bulk of the trade with Communist-dominated countries has been a recent development caused by generally poor harvests in those countries. As stated above, the principal markets for U.S. exports have been in Europe and in Asia.

May 1966
1:6

The United States is a party to the International Wheat Agreement (IWA) (13 U.S.T. & O.I.A. 1571 (1962) pt. 2), which includes 9 other exporting countries and 38 importing countries. The current agreement, which became effective on August 1, 1962, for a 3-year period, was the fifth wheat agreement negotiated in the period 1949-62; it was extended for an additional year beginning August 1, 1965 (Presidential Proclamation of Aug. 2, 1965, T.I.A.S. No. 5844). In recent years about a third of the world trade in wheat and wheat flour has been transacted under the terms of the IWA, including a fifth of the U.S. exports of these products.

Article 1(a) of the 1962 IWA states that its major objectives are "to assure supplies of wheat and wheat-flour to importing countries and markets for wheat and wheat-flour to exporting countries at equitable and stable prices . . . ." Exporting countries agree to supply, and importing countries agree to purchase, certain quantities of wheat and wheat flour within a price range of $\$1.62\frac{1}{2}$ to $\$2.02\frac{1}{2}$ per bushel (basis Manitoba Northern No. 1, bulk in store, Fort William/Port Arthur, Canada (on Lake Superior)).

Table 1.--Wheat: U.S. production, imports for consumption, exports of domestic merchandise, yearend stocks, and apparent consumption, crop years 1959-64

(In millions of bushels)

Year beginning July 1--	Production	Imports 1/	Exports	Yearend stocks 2/	Apparent consumption 3/
1959	1,121	7	414	1,313	693
1960	1,357	8	559	1,411	707
1961	1,235	5	603	1,322	726
1962	1,094	5	531	1,195	695
1963	1,138	4	750	900	687
1964	1,291	1	628	819	745

1/ Imports of wheat of milling quality have been limited by an annual absolute quota of 800,000 bushels. During the period 1959-63 annual imports subject to the quota averaged 14 percent of the total imports; almost all of the remainder consisted of wheat not fit for human consumption.

2/ Includes private and Government stocks on farms and in elevators, warehouses, and mills.

3/ Includes wheat milled in the United States and exported as flour, breakfast food, and other products (in grain equivalent). See table 2.

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

Table 2.--Wheat: U.S. apparent consumption, by outlets, crop years 1959-64

(In millions of bushels)

Year beginning July 1--	Processed into food, and industrial use 1/			Seed 3/	Feed 3/	Total apparent consumption
	Domestic use	Exported 2/	Total			
1959	496	92	588	63	42	693
1960	496	100	596	64	47	707
1961	501	110	611	56	59	726
1962	502	104	606	61	28	695
1963	500	96	596	63	28	687
1964	512	99	611	64	70	745

1/ Industrial use has been negligible, equaling less than 1 percent of the total.

2/ Includes wheat milled in the United States and exported as flour, breakfast food, and other wheat products (in grain equivalent).

3/ Includes both wheat consumed on the farms where grown and wheat sold.

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

Table 3.--Wheat: U.S. Government price-support operations, crop years 1959-64

Year beginning July 1--	Average loan rate	Average farm price	Quantity placed under price support	Deliveries to the Government		Government stocks at yearend
				Quantity	Ratio to production	
	Per bushel	Per bushel	Million bushels	Million bushels	Percent	Million bushels
1959	$1.81	$1.76	318	182	16	1,195
1960	1.78	1.74	424	258	19	1,243
1961	1.79	1.83	271	119	10	1,097
1962	2.00	2.04	299	228	21	1,083
1963	1/ 1.82	1.85	172	70	6	829
1964	2/ 1.30	1.37	198	75	6	625

1/ In addition, a payment of 18 cents per bushel was made on that part of the output of each farm that was equivalent to its average production in 1959 and 1960.

2/ Producers that diverted acreage to conservation uses also received marketing certificates for 90 percent of the normal production of the farm allotment; half of the certificates were valued at 70 cents per bushel and the remainder were valued at 25 cents per bushel.

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

Table 4.--Wheat: U.S. exports of domestic merchandise, by specified markets, crop years 1959-64 1/

Country or area	Year beginning July 1--					
	1959	1960	1961	1962	1963	1964
	Quantity (1,000 bushels)					
India	114,602	123,295	92,469	129,720	165,925	214,440
Pakistan	33,077	37,889	25,430	49,306	58,584	64,226
Japan	30,242	29,941	34,253	33,840	72,346	60,392
Brazil	33,713	39,141	52,308	51,107	45,478	39,812
Yugoslavia	8,999	12,123	36,364	43,319	10,196	38,466
Egypt	20,001	17,381	29,269	26,704	29,398	33,095
EEC 2/	20,862	67,343	59,184	20,935	51,169	21,042
Turkey	13,664	17,054	51,163	15,305	5,729	11,727
All other	139,135	215,116	222,303	160,491	311,264	145,157
Total	414,295	559,283	602,743	530,727	750,089	628,357
	Value (1,000 dollars)					
India	188,638	209,017	159,987	234,721	287,607	369,833
Pakistan	53,636	63,039	42,864	87,794	102,476	110,202
Japan	50,387	48,281	58,019	57,874	124,004	100,665
Brazil	58,093	64,624	90,293	91,335	80,337	73,598
Yugoslavia	15,347	22,279	63,485	77,681	18,382	64,362
Egypt	32,830	29,613	51,482	47,747	51,559	58,643
EEC 2/	34,469	114,270	114,263	38,747	90,945	35,408
Turkey	23,188	29,533	90,931	25,968	9,817	20,237
All other	244,152	382,756	411,400	302,333	569,265	248,981
Total	700,740	963,412	1,082,724	964,200	1,334,392	1,081,929

1/ Wheat produced in the United States is exported to more than 50 countries; those consistently providing significant markets were selected for this table.

2/ The European Economic Community (EEC) includes Belgium, France, Italy, Luxembourg, the Netherlands, and West Germany.

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

Table 5.--Wheat: U.S. imports for consumption, by kind, crop years 1959-64 1/

Year beginning July 1--	Fit for human consumption 2/	Not fit for human consumption	Total
	Quantity (1,000 bushels)		
1959	1,042	5,889	6,931
1960	852	6,908	7,760
1961	819	4,612	5,431
1962	802	4,251	5,053
1963	710	2,877	3,587
1964	96	747	843
	Value (1,000 dollars)		
1959	1,603	9,696	11,299
1960	1,404	11,185	12,589
1961	1,548	7,578	9,126
1962	1,423	8,233	9,656
1963	1,341	5,963	7,304
1964	204	1,550	1,754
	Unit value (per bushel)		
1959	$1.54	$1.65	$1.63
1960	1.65	1.62	1.62
1961	1.89	1.64	1.68
1962	1.77	1.94	1.91
1963	1.89	2.07	2.04
1964	2.12	2.07	2.08

1/ Virtually all imports of wheat came from Canada; only negligible quantities came from the United Kingdom and Mexico.

2/ The importation of wheat fit for human consumption in excess of the annual quota of 800,000 bushels is due both to the variance between the quota year (beginning May 29) and the crop year (beginning July 1), and to the exemption from the quota of wheat to be used for experimental or seed purposes.

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

Commodity	TSUS item
Milled barley products fit for human consumption:	
Pearl barley	131.10
Other	131.12

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

The domestic output of milled barley products fit for human consumption is of minor importance, and imports have been equivalent to less than 1 percent of consumption.

Description and uses

The principal milled barley products fit for human consumption are pearl barley and barley flour. (For barley grain and milled products not fit for human consumption, see summary on items 130.10 and 131.50.)

Pearl barley is made by placing large-kerneled, whole grain in a revolving perforated cylinder with abrasive disks. During the process of pearling, the hull and the bran are removed, and the whole grain is reduced to small round pellets known as white pearl barley. Pellets with some of the bran intact are known as brown pearl barley or pot barley. The further milling of white pearl barley reduces the product to flour.

Pearl barley is used in soups, dressings, and pet foods. Barley flour is used chiefly in infant and invalid foods because it is easily digested; it does not have sufficient protein to make the type of bread preferred by U.S. consumers. The domestic and imported products have generally been similar in quality, although some imported flour has been marketed as a high-priced, prestige item.

U.S. tariff treatment

The current column 1 rates of duty applicable to imports (see general headnote 3 in appendix A) are as follows:

TSUS item	Commodity	Rate of duty
	Milled barley products fit for human consumption:	
131.10	Pearl barley	0.4¢ per lb.
131.12	Other	2¢ per lb.

The rate of duty on pearl barley fit for human consumption, effective since July 1, 1963, reflects a concession granted by the United States in the General Agreement on Tariffs and Trade (GATT). That concession became operative in two annual stages. The rate on other milled barley products fit for human consumption is that originally provided for under paragraph 722 of the Tariff Act of 1930; since January 1948 it has been bound against increase pursuant to a GATT concession.

The ad valorem equivalent of the duty on imports of pearl barley in 1964 averaged 7.5 percent; for imports from individual countries, it ranged from 3.5 to 7.8 percent. For imports of other milled barley in 1964, the ad valorem equivalent of the duty ranged from 4.7 to 33.8 percent and averaged 5.6 percent.

U.S. consumption and production

The U.S. trade in milled barley products, for which annual production and consumption data are not separately reported, is small relative to that in other milled grain products. In the early 1960's, 4 million to 5 million bushels of barley (equivalent to about 1 percent of the barley crop) was milled annually into pearl barley or barley flour. Inasmuch as 1 bushel of barley yields either 26 pounds of pearl barley or 22 pounds of barley flour, between 100 million and 125 million pounds of the milled products was produced each year in the aforementioned period. Domestic producers, who number fewer than 10, supply virtually the entire U.S. consumption; these producers obtain only a small share of their total income from the sale of milled barley.

U.S. exports and imports

Although export statistics are not separately reported, it is believed that the small quantity of milled barley exported annually has gone primarily to countries in Latin America.

In recent years the aggregate volume of imports of milled barley, consisting principally of pearl barley, has averaged annually less than 1 percent of domestic consumption. The small volume of imported pearl barley, principally from the Netherlands, fluctuates from year to year; during the period 1961-64, annual imports ranged from 600,000

to 1.1 million pounds and averaged 830,000 pounds, valued at $38,000. Imports from the Netherlands generally enter through the customs districts of New York and Philadelphia, and those from Japan enter through the Honolulu district.

Average annual imports of barley flour during the period 1961-64--29,000 pounds, valued at $11,000--were larger than those during 1956-59; the United Kingdom again became the principal source of imports, as it had been before World War II. The imports from the United Kingdom have consisted almost entirely of prestige flour packaged in consumer-size tins, with a relatively high unit value, whereas those from the Netherlands (the principal supplier in the 1950's) have been in 100-pound bags, with a much lower unit value. Imports from the United Kingdom enter mainly through the customs districts of Puerto Rico, Philadelphia, and Maryland, while those from the Netherlands enter at New York.

Foreign production and trade

The use of milled barley for human food is more extensive in certain countries of Asia--viz, Japan and China--than in either Europe or North America. The output in Asia, as well as most of the limited output of such barley in the Netherlands and the United Kingdom, has been consumed locally, and exports have been small in relation to output. In recent years output of these products in Canada (an important barley-growing country) has been equivalent to about 10 percent of U.S. production, and Canadian exports have been negligible.

Table 1.--Pearl barley: U.S. imports for consumption, by principal sources, 1958 and 1961-64

Country	1958	1961	1962	1963	1964
	Quantity (1,000 pounds)				
Netherlands	656	914	1,110	701	576
Japan	-	-	1/	-	18
All other	-	1/	1	-	-
Total	656	914	1,111	701	594
	Value (1,000 dollars)				
Netherlands	35	38	50	32	30
Japan	-	-	2/	-	2
All other	-	2/	2/	-	-
Total	35	38	50	32	32

1/ Less than 500 pounds.
2/ Less than $500.

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

Note.--Annual U.S. production and export statistics are not separately reported. Domestic output of pearl barley and barley flour during 1958-64 is estimated to have averaged from 100 million to 125 million pounds annually (as determined by the quantity of barley grain consumed in flour mills in 1958). Exports of pearl barley have been negligible in recent years.

Table 2.--Milled barley products fit for human consumption: 1/ U.S. imports for consumption, by principal sources, 1958 and 1961-64

Country	1958	1961	1962	1963	1964
	Quantity (1,000 pounds)				
United Kingdom	-	30	25	21	26
Netherlands	5	-	3	4	5
All other	-	-	-	1	2
Total	5	30	28	26	33
	Value (1,000 dollars)				
United Kingdom	-	13	10	9	11
Netherlands	2/	-	-	2/	2/
All other	-	-	2/	2/	2/
Total	2/	13	10	9	11

1/ Virtually all barley flour; for imports of pearl barley, see table 1.

2/ Less than $500.

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

Note.--U.S. production statistics are not separately reported; see note to table 1. Exports of barley flour, which have been negligible in recent years, are not separately reported.

Commodity	TSUS item
Milled corn products fit for human consumption--	131.20, -.21

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

U.S. producers supply virtually all of the domestic consumption of milled corn. U.S. exports, largely for relief in foreign countries, have been equivalent to a sixth of domestic output in recent years.

Description and uses

Milled corn products fit for human consumption include corn meal, grits, and flour; for a discussion of unmilled corn or maize and milled corn not fit for human consumption, see the summary on items 130.30, 130.35, and 131.60. Corn meal is made by grinding either whole corn kernels, degermed kernels, or degermed hulled kernels. Degermed hulled kernels are kernels which have had both the hard fibrous covering (the hull) and the germ removed. Corn grits are a coarsely ground, hulled product, whereas corn flour is a finely ground, hulled product. About two-thirds of the corn meal consumed in the United States, and virtually all of the grits and flour, are made from degermed kernels. Corn meal, grits, and flour form an appreciable part of the diet in some southern areas of the United States. Much of the degermed meal and grits is used in the manufacture of cereal breakfast foods, prepared flour mixes, and other processed products. Brewers use meal and grits, together with other ingredients, as malt adjuncts in the manufacture of beer. The imported and domestic articles are generally similar in quality and value.

U.S. tariff treatment

The current column 1 rates of duty applicable to imports (see general headnote 3 in appendix A) are as follows:

TSUS item	Commodity	Rate of duty
131.20	Milled corn products fit for human consumption.	50¢ per 100 lbs.
131.21	If product of Cuba----------	40¢ per 100 lbs.

The rate for item 131.20 is that originally provided in the Tariff Act of 1930, under paragraph 724; it is not a trade-agreement rate. The rate shown for item 131.21 is the preferential rate for products of Cuba, which rate was suspended on May 24, 1962. Imports from Cuba have been prohibited since February 7, 1962.

For the total imports in 1964 of milled corn products fit for human consumption the ad valorem equivalent of the 50-cent rate was 7.8 percent, while for the imports of flour it was 3.6 percent, and for the imports of the lower valued meal and grits, 8.6 percent.

U.S. consumption

In the period 1958-64 the annual apparent U.S. consumption of milled corn products fit for human use increased from about 2.9 billion pounds to about 3.1 billion pounds (table 1). The increase largely reflects the expanding use in recent years of degermed corn meal and grits in the manufacture of breakfast cereals, other foods, and alcoholic beverages, while consumption of corn meal as such by humans has been gradually declining. The foods and beverages made from degermed corn meal and grits presently account for about three-fifths of the consumption of milled corn by humans.

U.S. producers

In 1958 (the latest year for which data are available) about two-thirds of the U.S. output of the milled corn products discussed in this summary was produced by an unknown number of the 700 establishments primarily engaged in the manufacture of other milled grain products, alcoholic beverages, and cereal breakfast foods. These establishments used part of their output of milled corn in their own operations and sold the remainder on the open market. About 150 other establishments, which were primarily engaged in the manufacture of corn products fit for human consumption, produced the remaining third of the 1958 output. The bulk of the producers of corn meal, grits, and flour are located in the Southern and North Central States.

U.S. production

In the period 1958-64 between 100 million and 120 million bushels of corn (about 2 percent of the annual corn crops) was milled each year into products fit for human consumption. In 1958, output of such products amounted to about 3.3 billion pounds; by 1964, output had increased to 3.7 billion pounds.

U.S. exports

U.S. exports of milled corn products fit for human consumption (mostly corn meal) increased from 366 million pounds in 1958 to 556 million pounds in 1964 (table 2). Exports in the period 1961-64 were equivalent to about a sixth of domestic production. More than four-fifths of the corn processed for export in the 1961-64 period was donated by individuals and private charity agencies for relief in Asia, Africa, and Latin America. The remainder of the exports went largely to Canada and the Caribbean area. U.S. exports of milled corn in the form of convenience foods and alcoholic beverages have been small in recent years.

U.S. imports

Although U.S. imports of the milled corn products considered here have fluctuated substantially from year to year, they have not been significant compared with domestic consumption. Moreover, commercial production of milled corn products in foreign countries has generally been insignificant relative to that in the United States. No imports of milled corn entered the United States in 1958. In the period 1961-64, annual imports increased from 81,000 pounds to 1.2 million pounds (table 3). The large volume of imports in 1964 consisted primarily of the trade of domestic concerns with their foreign affiliates located in Canada. Canada, Italy, and Mexico were the principal suppliers of imports in the early 1960's. The bulk of the imports other than those from the foreign affiliates of U.S. producers were packaged in retail-size containers.

Table 1.--Milled corn products fit for human consumption: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1958 and 1961-64

Year	Production	Imports	Exports	Apparent consumption
	Quantity (1,000 pounds)			
1958	1/ 3,300,000	-	366,366	2,900,000
1961	2/	81	500,030	2/
1962	2/	164	553,642	2/
1963	2/	229	529,657	2/
1964	1/ 3,700,000	1,190	555,591	3,100,000
	Value (1,000 dollars)			
1958	2/	-	17,475	2/
1961	2/	5	24,107	2/
1962	2/	11	23,147	2/
1963	2/	15	22,379	2/
1964	2/	76	21,511	2/

1/ Partly estimated by the staff of the U.S. Tariff Commission.
2/ Not available.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Table 2.--Milled corn products fit for human consumption: U.S. exports of domestic merchandise, by specified markets, 1958 and 1961-64

Country	1958	1961	1962	1963	1964
	Quantity (1,000 pounds)				
Republic of Korea	123,794	101,227	113,186	119,144	130,187
India	150	24,472	49,359	49,228	100,619
Canada	27,097	25,691	32,701	38,529	61,288
Brazil	-	11,846	13,513	23,679	31,302
Mexico	1,062	8,689	17,814	17,135	24,774
Egypt	138	40,692	39,634	25,463	14,913
All other	214,125	287,413	287,435	256,479	192,508
Total	366,366	500,030	553,642	529,657	555,591
	Value (1,000 dollars)				
Republic of Korea	5,867	4,513	4,778	5,925	4,867
India	7	1,074	2,412	2,791	3,946
Canada	1,054	1,366	1,663	2,154	2,343
Brazil	-	420	471	909	1,118
Mexico	46	349	673	782	930
Egypt	6	1,586	1,455	1,002	583
All other	10,495	14,799	11,695	8,816	7,724
Total	17,475	24,107	23,147	22,379	21,511

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

Table 3.--Milled corn products fit for human consumption: U.S. imports for consumption, by principal sources, 1961-64 1/

Year	Canada	All other	Total
	Quantity (1,000 pounds)		
1961	60	21	81
1962	54	2/ 110	164
1963	220	9	229
1964	1,165	25	1,190
	Value (1,000 dollars)		
1961	4	1	5
1962	4	2/ 7	11
1963	14	1	15
1964	74	2	76

1/ No imports were reported for 1958.
2/ Includes 97 thousand pounds, valued at 6 thousand dollars, imported from Mexico.

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

Commodity	TSUS item
Milled oat products fit for human consumption:	
Valued not over $8 per 100 lbs	131.25
Valued over $8 per 100 lbs	131.27

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

Virtually all U.S. consumption of milled oat products fit for human use has been supplied by domestic producers; imports have been insignificant. U.S. exports, although declining in recent years, have been many times larger than imports.

Description and uses

Milled oat products fit for human consumption include rolled oats, oatmeal, and oat flour, all milled from high-quality, plump, white oats which have been hulled. Oats and milled oat products not fit for human consumption are discussed in the summary on items 130.45 and 131.65. After being hulled, white oats are either steamed and rolled into thin flakes called rolled oats or ground into oatmeal and oat flour. Most of the "oatmeal" in commerce is not a meal in the ordinary sense but consists of rolled oats and is utilized as a breakfast food which requires cooking before eating. In fact, rolled oats are the most popular cooked cereal consumed in the United States. Oat flour, a byproduct of the manufacture of rolled oats is used in the production of prepared breakfast foods and infant foods. Because it contains an antioxidant which delays the development of rancidity, oat flour is also used to preserve the taste and quality of some foods that contain fat; the flour in small quantities is mixed into lard, margarine, or peanut butter, or dusted on potato chips and salted nuts. Small amounts of oatmeal and oat flour are also used in some baked goods.

The imports of milled oats, which consist chiefly of oat breakfast cereals for home cooking, are specialty products appealing to a limited market. They afford little competition with domestic oat cereals, which are sold largely on the basis of well-advertised brand names.

U.S. tariff treatment

The current column 1 rates of duty applicable to imports (see general headnote 3 in appendix A) are as follows:

TSUS item	Commodity	Rate of duty
	Milled oat products fit for human consumption:	
131.25	Valued not over $8 per 100 lbs	10% ad val.
131.27	Valued over $8 per 100 lbs	80¢ per 100 lbs.

The rate for the milled products valued not over $8 per 100 pounds is derived from a concession granted by the United States in the General Agreement on Tariffs and Trade (GATT) that became effective in June 1951 for such products valued at $2 or more but not over $8 per 100 pounds. The 1951 concession rate of 20 cents per 100 pounds for the products valued at less than $2 per 100 pounds was not carried into the TSUS because imports of these low-valued products had been virtually nil in the years immediately preceding August 31, 1963, the effective date of the TSUS. The rate on the milled products valued over $8 per 100 pounds is that originally provided in the Tariff Act of 1930 under paragraph 726; it has been bound against increase in the GATT since January 1, 1948.

The ad valorem equivalent of the duty on imports in 1964 valued over $8 per 100 pounds ranged from 5.4 percent (for those from the United Kingdom) to 5.7 percent (for those from Ireland) and averaged 5.6 percent.

U.S. consumption and production

Annual U.S. consumption of milled oat products fit for human use increased by 7 percent to 959 million pounds during the period 1960-64. While the per capita consumption of other cereals for home cooking has decreased in recent years, that of rolled oats has remained virtually unchanged; moreover, the use of milled oats in ready-to-serve breakfast foods has been expanding.

During 1960-64, annual U.S. production of milled oat products increased from 924 million to 968 million pounds (table 1); the quantity of oats annually milled into products during this period averaged 43 million bushels. Breakfast-food manufacturers and grain millers have each supplied about half of the domestic output; in 1963, 49 establishments produced breakfast foods, and 617 milled various grain products, but only a relatively small number of these are believed to have manufactured oat products.

U.S. exports and imports

The United States is on a substantial net export basis with regard to milled oat products fit for human consumption; however, in the period 1960-64, annual exports declined from 31 million to 9 million pounds (table 2). Latin America was the principal market for U.S. exports. The marked decline in exports primarily reflects the establishment of local mills (some by U.S. concerns) in Latin America; of secondary importance was the substitution of other foods for milled oats. Aggregate exports to Venezuela and Colombia alone declined from nearly 14 million pounds in 1961 to 24,000 pounds in 1964.

U.S. imports, which have consisted largely of special types of oatmeal, have supplied less than 1 percent of the domestic consumption of milled oats. In the period 1960-64, imports ranged from 1 million pounds (1960) to 297,000 pounds (1962); in 1964, imports amounted to 383,000 pounds, valued at $51,000 (table 3). Historically, Ireland has been by far the principal supplier of imports, followed by the United Kingdom and Canada. In recent years the production of milled oats in Ireland has been equivalent to about 3 percent of the U.S. output.

Table 1.--Rolled oats and oatmeal: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1960-64

Year	Production 1/	Imports	Exports	Apparent consumption
	Quantity (1,000 pounds)			
1960	924,000	1,049	31,221	894,000
1961	946,000	523	31,235	915,000
1962	946,000	297	28,605	918,000
1963	968,000	446	14,157	954,000
1964	968,000	383	9,043	959,000
	Value (1,000 dollars)			
1960	2/	92	3,825	2/
1961	2/	50	3,822	2/
1962	2/	36	3,526	2/
1963	2/	64	1,557	2/
1964	2/	51	718	2/

1/ Computed from the quantity of oats processed each year, as reported by the U.S. Department of Agriculture.
2/ Not available.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Table 2.--Rolled oats and oatmeal: U.S. exports of domestic merchandise, by specified markets, 1960-64

Country or area	1960	1961	1962	1963	1964
	Quantity (1,000 pounds)				
Mexico	7,703	6,725	7,027	4,736	4,085
Central America 1/	6,042	5,668	5,755	4,155	2,273
Venezuela	9,444	10,760	8,725	1,790	15
Colombia	3,760	3,234	2,396	132	9
All other	4,272	4,848	4,702	3,344	2,661
Total	31,221	31,235	28,605	14,157	9,043
	Value (1,000 dollars)				
Mexico	537	456	416	255	242
Central America 1/	936	876	919	609	165
Venezuela	1,509	1,605	1,325	194	2
Colombia	182	169	124	11	1
All other	661	716	742	488	308
Total	3,825	3,822	3,526	1,557	718

1/ Includes British Honduras, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.

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

Table 3.--Rolled oats and oatmeal: U.S. imports for consumption, by principal sources, 1960-64

Country	1960	1961	1962	1963	1964
	Quantity (1,000 pounds)				
Ireland	764	402	222	305	305
United Kingdom	247	96	74	125	46
Canada	38	20	-	16	32
All other	-	5	1	-	-
Total	1,049	523	297	446	383
	Value (1,000 dollars)				
Ireland	69	38	27	45	43
United Kingdom	22	11	9	18	7
Canada	1	1	-	1	1
All other	-	1/	1/	-	-
Total	92	50	36	64	51

1/ Less than $500.

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

Commodity	TSUS item
Milled rye products fit for human consumption	131.38

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

Rye flour and rye meal are of little importance to domestic millers; these products have not been imported since 1952.

Description and uses

Milled rye products fit for human consumption include rye flour and rye meal. Rye grain and rye products not fit for human consumption are discussed in the summary on items 130.60 and 131.70. Rye is generally milled into either white flour, medium flour (light grayish-brown), or dark flour containing coarsely ground meal (also light grayish-brown). Rye flour and meal alone produce a heavy, sour, but nutritious bread. Inasmuch as rye dough retains only a small quantity of the yeast fermentation gases which cause the dough to rise, rye bread in the United States usually is made from a mixture of rye and wheat flours. The result is a rye-flavored bread. The domestic and imported rye flours and meals have generally been comparable in quality.

U.S. tariff treatment

The current column 1 rate of duty applicable to imports (see general headnote 3 in appendix A) is as follows:

TSUS item	Commodity	Rate of duty
131.38	Milled rye products fit for human consumption.	22.5¢ per 100 lbs.

This rate of duty, which reflects a concession granted by the United States in the General Agreement on Tariffs and Trade, has been in effect since June 1951.

In the period March 31 to June 30, 1954, U.S. imports of rye flour and meal were limited by an absolute quota of 2,500 pounds; from

July 1, 1954, to June 30, 1961, the annual absolute quota was 15,000 pounds. Beginning July 1, 1955, the annual global quotas were allocated among supplying countries; Canada's share was 98 percent. Rye grain, flour, and meal were all previously subject to quota (see the section on U.S. imports in the summary on rye grain, item 130.60 et al.). There have been no imports of rye flour and meal since 1952.

U.S. consumption, production, and foreign trade

During the period 1953-64, U.S. consumption of rye flour and rye meal was supplied entirely by domestic producers. For a number of years, annual U.S. consumption of milled rye has remained virtually unchanged inasmuch as the decline in the annual per capita consumption (from 1.5 pounds in 1949 to 1.1 pounds in 1964) has been largely offset by the increase in population.

U.S. production of rye flour and meal for 1958 and 1961-64 is shown below:

Year	Quantity (1,000 pounds)	Value (1,000 dollars)
1958	207,800	8,465
1961	196,700	1/
1962	205,500	1/
1963	205,500	7,685
1964	208,800	1/

1/ Not available.

About 5 million bushels of rye was ground into flour and meal annually in 1961-64. In 1964, 18 mills, with a combined daily capacity of some 800,000 pounds, were in operation; the larger mills were in Minnesota, New York, and Wisconsin. For many of these establishments, the milling of rye was only a small part of their total operations.

For a number of years, U.S. exports of milled rye fit for human consumption have been negligible and U.S. imports thereof have been nil. Moreover, it has been advantageous to import rye grain and mill it in this country, since the duty on the quantity of rye grain needed to yield 100 pounds of flour is 13.75 cents and the duty on 100 pounds of flour is 22.5 cents.

In general, international trade in milled rye has been negligible because most of the world's output has been consumed in the producing countries. Canada is the only major foreign producer with any potential for exporting to the United States. Production in Canada in the early 1960's, however, averaged about 17 million pounds annually--an amount less than a tenth of the U.S. output.

May 1966
1:6

Commodity	TSUS item
Wheat flour	131.40

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

The United States is the world's largest producer and the leading exporter of wheat flour. U.S. imports, which have been under quota restriction, have been negligible.

Description and uses

Milled wheat products fit for human consumption are the edible end products resulting from the process of grinding cleaned kernels of the various kinds and grades of wheat. Edible milled wheat products include white, cracked, and whole wheat (graham) flours, whether pure, blended, phosphated, or self rising, and semolina. Wheat grain and milled wheat products not fit for human consumption are discussed in the summary on items 130.65 et al.

Wheat flour is not a uniform and homogeneous commodity, but varies considerably in composition; the various types and grades of flour have different end uses. Flour types reflect principally the kernel characteristics of the wheat which is milled, while the various grades of flour are differentiated by the milling processes employed or by the number of successive stages of milling. Since whole wheat flour becomes rancid in storage, white flour (made from the endosperm of the wheat kernel after the bran and germ have been removed) dominates the trade. White flour milled from hard wheat is used in bread because of its high protein and gluten content. White soft-wheat flours are used for pastry, biscuits, and crackers. Semolina, a meal coarsely ground from durum wheat (a type of hard wheat), is used in spaghetti, macaroni, noodles, and similar alimentary paste products. Byproducts of milling wheat, which are important sources of livestock feed, are included in the summary on byproduct feeds, item 184.10 et al.

Imported flour, milled primarily from hard spring wheat, is similar in quality to the comparable domestic product.

U.S. tariff treatment and other restrictions on imports

The current column 1 rate of duty applicable to imports (see general headnote 3 in appendix A) is as follows:

TSUS item	Commodity	Rate of duty
131.40	Wheat flour	52¢ per 100 lbs.

This rate, which has been in effect since January 1948, reflects a concession granted by the United States in the General Agreement on Tariffs and Trade. Based on imports in 1964, the ad valorem equivalent of the rate, 12.4 percent, was representative for the bulk of the imports inasmuch as they were fairly uniform in value.

Since May 29, 1941, an absolute quota, established by Presidential Proclamation No. 2489 (3 CFR Cum. Supp., p.235), has restricted the importation into the United States of wheat flour fit for human consumption (including semolina, crushed or cracked wheat, and similar wheat products) to 4,000,000 pounds per quota year, commencing each May 29. Canada was allocated 3,815,000 pounds, or 95.4 percent of the quota; for the allocation of the quota by countries, see item 950.60 in appendix A. Wheat grain fit for human consumption is also subject to quota (see the section on U.S. tariff treatment in the summary on wheat grain, items 130.65 et al.).

U.S. consumption

Apparent annual domestic consumption of edible milled wheat products, averaging 22 billion pounds per year, exhibited no meaningful upward or downward trend in the period 1961-64 (table 1). This level of domestic consumption, however, was 4 percent greater than that in 1958.

Despite an expanding population, annual domestic consumption of starchy milled wheat products has been virtually unchanged because of a decline in the per capita consumption of such foods--from 213 pounds in 1909 to 121 pounds in 1958, and to 115 pounds in 1963. Demand for wheat flour and its end products is not generally responsive to price changes, but rather varies inversely with the standard of living.

The final forms in which wheat flour products have been purchased have changed due to new food-merchandising practices. Not only has the share of the flour sold to commercial bakeries increased compared with that sold to households, but in recent years the use of prepared cake and flour mixes has risen substantially.

U.S. producers

In 1958, according to the Census of Manufactures for that year, 346 domestic establishments produced wheat flour, 81 produced blended or prepared flour, and 117 made flour mixes. Collectively, these establishments employed 29,000 persons. Although in 1964 more than 300 mills produced flour, more than half of the total output was produced by approximately 50 of the larger mills, each with a daily capacity of 600,000 pounds or more. The largest U.S. flour mill had a daily capacity of nearly 3 million pounds.

The degree of concentration of U.S. flour production has resulted partly from numerous consolidations and mergers and partly from reductions in the number of small and independent mills. This trend has been accompanied by the expansion of the larger milling companies into such diversified products as cake mixes, breakfast foods, refrigerated foods, and chemicals.

Domestic producers utilized 87 percent of their total annual capacity in 1958; in the period 1961-64 they used an average of 93 percent. Despite this high degree of plant utilization and the fact that milling is the main activity of the larger U.S. millers, many firms derived important sources of income from the sales of diversified products and millfeed byproducts.

Wheat flour was milled throughout the United States during the period 1961-64. Kansas, New York, Minnesota, Missouri, Illinois, and Texas produced nearly three-fifths of the U.S. output of wheat flour in 1964. Buffalo, N.Y. was the principal flour-milling center, with a daily capacity in excess of 8 million pounds in the early 1960's.

The principal States producing prepared flour and flour mixes have been Illinois, Ohio, New York, California, and Kansas. In 1958, about half of the prepared flour and flour mixes were manufactured from flour milled in the same establishment; the remainder were made from purchased flour.

U.S. production and stocks

The annual U.S. production of wheat flour (including semolina) increased by about 6 percent between 1958 and 1961. During 1961-64, however, yearly output remained virtually unchanged, averaging 26.4 billion pounds (table 1); about 600 million bushels of wheat was used annually to make flour. Annual stocks of wheat flour, equivalent to about 2 percent of domestic output, have not changed significantly in recent years.

In 1958-63 the annual production of semolina and durum flour increased from 830 million pounds to 1.1 billion pounds, and comprised

about 4 percent of the output of all flour in 1963. Producers' shipments of prepared flour and flour mixes increased in value from $350 million in 1958 to nearly $400 million in 1963. The output of these convenience foods will probably continue to expand.

The U.S. Government does not restrict the production of wheat flour, but the raw-material costs of millers are substantially affected by the Government's price-support policies regarding wheat grain. (See the section entitled "Price-support operations" in the wheat grain summary, item 130.65 et al.)

U.S. exports

Annual U.S. exports of milled wheat products fit for human consumption increased from 3.5 billion pounds in 1958 to 4.7 billion pounds in 1962; exports in 1964 amounted to 4.2 billion pounds, valued at $171 million. During 1961-64, annual exports were equivalent to about 17 percent of domestic output.

During 1961-64 the exports of wheat flour, which consumed nearly 100 million bushels of grain annually, went to more than 100 countries, with 6 markets receiving about half of the total (table 2). During 1963 and 1964, Africa imported the largest portion (48 percent), followed by Asia (25 percent), Latin America (17 percent), and Europe (10 percent).

Political and economic factors have reduced the importance of a number of U.S. flour export markets. Cuba was a significant market until trade relations were suspended by the U.S. Government in 1962. In July 1962 the European Economic Community (EEC) provided for flexible tariffs on grain and grain products (among other commodities), discouraging importation of such products into the Common Market area. Moreover, developing nations in Latin America, Africa, and Asia have been encouraging the establishment of local flour mills, although many continue to purchase U.S. wheat for their mills.

Because domestic prices for wheat flour have been substantially higher than foreign prices (due to American price-support programs for wheat grain), Government export subsidies have been necessary to encourage the exportation of flour. Export payments to commercial U.S. exporters in mid-December 1964 ranged from $1.58 to $1.74 per 100 pounds (the difference depending on the type of flour and the port of export).

Since the enactment of the Agricultural Trade Development and Assistance Act of 1954 (Public Law 480, 83d Cong.), U.S. wheat flour has been increasingly exported under Government programs rather than as a result of commercial cash sales. In 1963, 77 percent of flour exports were made under special programs, compared with 46 percent in

1959 and only 2 percent in 1954. Most of these exports in recent years have been purchased with local foreign currencies. Additional substantial quantities of flour have been exported as donations by private U.S. relief and charity organizations.

U.S. imports

U.S. imports of wheat flour fit for human consumption are limited by an absolute quota to 4 million pounds a year--an amount equivalent to less than 1 percent of domestic apparent consumption (see U.S. tariff treatment section). The value of annual imports during 1961-64 averaged $170,000. Canada's share of the quota (95.4 percent) has been filled in virtually every year since 1941, the year in which the quota was imposed; other countries generally have not filled their allotments. Annual imports of flour in recent years have been equivalent to about 90,000 bushels of wheat.

World exports

The United States, Canada, West Germany, Australia, and France have been the leading exporters of wheat flour, providing about 90 percent of the world exports in the early 1960's. During the last decade the United States emerged as the leading exporter; France considerably increased its exports, and West Germany experienced some increase. Australia and Canada suffered losses in exports of flour; however, both significantly increased their exports of wheat grain.

World flour exports, matching the increased consumption of flour products in Africa, Asia, and Latin America, doubled from the 1930's to the 1960's. Despite the increased volume of wheat flour traded, its share of total wheat grain and flour exports has declined. This trend is likely to continue as developing countries establish milling industries, erect trade barriers to flour imports, and encourage the entry of wheat grain. Such developments in the countries which have traditionally provided markets for exports of wheat flour probably preclude a future expansion in flour exports similar to that in earlier years. A further characteristic of the recent trade in flour is that exports under special Government programs--notably in the United States, Canada, and Australia--have to a considerable extent replaced commercial cash sales of wheat flour.

Table 1.--Milled wheat products fit for human consumption: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1958 and 1961-64

Year	Production 1/	Imports	Exports	Apparent consumption
	Quantity (million pounds)			
1958	24,634	4	3,507	21,131
1961	26,075	4	4,300	21,779
1962	26,248	4	4,712	21,540
1963	26,691	4	4,429	22,266
1964	26,588	4	4,225	22,367
	Value (1,000 dollars)			
1958	1,399,000	186	160,892	3/
1961	2/	163	179,727	3/
1962	2/	154	192,597	3/
1963	1,503,000	171	183,033	3/
1964	2/	161	170,928	3/

1/ Wheat flour only. Producers' shipments of prepared flour and flour mixes increased in value from $350 million in 1958 to $400 million in 1963; data for 1961, 1962, and 1964 are not available.

2/ Not available.

3/ Not meaningful.

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

Table 2.--Wheat flour: U.S. exports of domestic merchandise, by specified markets, 1961-64 1/

Country or area	1961	1962	1963	1964
	Quantity (million pounds)			
Egypt	1,089	1,305	1,617	1,601
Bolivia	149	153	184	197
Jordan	171	135	170	146
Vietnam	132	170	80	152
EEC 2/	431	337	196	142
Saudi Arabia	141	137	143	176
All other	2,187	2,475	2,039	1,811
Total	4,300	4,712	4,429	4,225
	Value (1,000 dollars)			
Egypt	40,155	50,389	59,155	63,011
Bolivia	5,719	5,874	7,052	7,793
Jordan	8,085	7,096	8,589	7,725
Vietnam	4,713	6,676	3,830	6,463
EEC 2/	19,035	13,647	9,630	5,533
Saudi Arabia	4,345	4,341	4,521	5,132
All other	97,675	104,574	90,256	75,271
Total	179,727	192,597	183,033	170,928

1/ Wheat flour was exported to some 100 countries each year in the period 1961-64; the listed countries are those that have consistently provided significant markets.

2/ The European Economic Community (EEC) consists of Belgium, France, Italy, Luxembourg, the Netherlands, and West Germany.

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

Commodity	TSUS item
Milled grain products:	
Fit for human consumption	131.45, -.46
Not fit for human consumption	131.80
Mixtures of two or more milled grain products:	
Fit for human consumption	131.85
Not fit for human consumption	131.90

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

Milled grain products not provided for by name in the TSUS, as well as mixtures of two or more milled grain products, are unimportant in the domestic and foreign trade of the United States.

Comment

Headnote 1 to part 7B (Milled Grain Products) of schedule 1 of the TSUS (see appendix A) limits the milled products in that part to those derived from grain provided for in part 7A (Grains). Inasmuch as the milled products of all the grains so provided for (except grain sorghum and canary seed) are enumerated in part 7B and are discussed in other summaries, this summary deals with the milled products of grain sorghum and canary seed and with mixtures of any of the milled grain products provided for in part 7B.

The current column 1 rates of duty applicable to imports (see general headnote 3 in appendix A) are as follows:

TSUS item	Commodity	Rate of duty
	Milled grain products:	
131.45	Fit for human consumption	20% ad val.
131.46	If products of Cuba	16% ad val.
131.80	Not fit for human consumption	10% ad val.
	Mixtures of two or more milled grain products:	
131.85	Fit for human consumption	20% ad val.
131.90	Not fit for human consumption	The highest rate applicable to any component material.

The TSUS rates for items 131.45 and 131.85 are those originally provided for in the Tariff Act of 1930 under paragraph 1558 for unenumerated manufactured products and are not trade-agreement rates; the rate for item 131.80, which has been in effect since June 1951, reflects a concession granted by the United States in the General Agreement on Tariffs and Trade. The rate provision for item 131.90 is designed to prevent manipulation of components in order to obtain more favorable rate treatment. The rate shown for item 131.46 is the preferential rate for products of Cuba, which was suspended on May 24, 1962. Imports from Cuba have been prohibited since February 7, 1962.

Although a large part of the approximately 400 million bushels of grain sorghum annually fed to livestock in recent years has been ground, either on the farm or by local mills, U.S. production of the milled products of this grain and the foreign trade therein have been insignificant relative respectively to the output of and trade in all milled grain products. Data on U.S. production and exports of the milled products discussed here are not separately reported. In 1964, reported U.S. imports of such products, valued at $157,000, consisted principally of wheat gluten and millet, products which current information indicates were improperly included for statistical purposes under items 131.45 and 131.85. Wheat gluten fit for human consumption is an edible preparation (C.A.D. 684, June 18, 1958) provided for in item 182.91; millet fit for seeding purposes is provided for as a seed in item 126.57. Imports of products within the categories discussed in this summary have probably been negligible or nil for many years.

Commodity	TSUS item
Rye malt	132.15
Barley and other malts	132.20
Malt extract:	
Fluid	132.25
Solid or condensed	132.30

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

In recent years domestic producers have supplied at least 95 percent of the malt consumed in the United States. Only a small part of the total U.S. consumption has been in the form of malt extract. Since 1960 the United States has been a net importer of malt and a net exporter of malt extract.

Description and uses

Malt is produced from barley, rye, or other grain of good quality which is germinated under controlled conditions and then dried. The dried grain, known as malt, is separated from the sprouts, which are utilized as animal feed (see summary on brewers' and distillers' grains and malt sprouts, item 184.25). The malt, practically identical in appearance to the unmalted grain, has a distinctive odor and flavor; it contains an enzyme (diastase) which is capable of converting starch to sugar. Malt extracts are prepared by evaporating a strained mash of malt and water to a sirupy concentrate or a powder; 100 pounds of malt produces about 80 pounds of malt sirup. Malt extracts contain the maltose, dextrine, and soluble proteins and vitamins of the malt from which they were made.

Barley malt, which accounts for the bulk of the malt, is usually produced in the United States and Canada from six-row barley, whereas in Europe it is generally made from two-row barley. The barley head, or spike, consists of a zigzag stem (rachis) with groups of three kernels (spikelets) arranged alternately on opposite sides of the rachis. In six-row varieties all three spikelets at each rachis joint are fertile, whereas in the two-row varieties only the central spikelet develops. The bulk of the U.S. output of barley consists of the six-row varieties; malt made therefrom is preferred by most U.S. brewers because of its higher diastatic power that allows the use of more malt adjuncts (usually corn grits or brewers' rice) in the manufacture of beer and distilled alcoholic beverages. European malt has a higher extraction rate (i.e., it yields more sugar from the malted grain) than the U.S. malt.

In addition to its use in the manufacture of beer and distilled alcoholic beverages, barley malt is used to make nonalcoholic cereal beverages and beverage preparations, breakfast foods, candy, and other food products. Rye malt is used principally in making whiskey. Wheat malt, which is of minor commercial importance, is used principally in the manufacture of food products. For use in the manufacture of some food products (particularly breakfast foods, baked goods, and candy), the malt is first converted to malt extract. Bakers use high-diastatic malt extract to improve the fermentation of dough, thus altering the texture of their products. Malted-milk powder is produced by the addition of milk to the extract before it is dried. Domestic and imported malt extracts are interchangeable.

U.S. tariff treatment

The current column 1 rates of duty applicable to imports (see general headnote 3 in appendix A) are as follows:

TSUS item	Commodity	Rate of duty
132.15	Rye malt	22.5¢ per 100 lbs.
132.20	Barley and other malts	30¢ per 100 lbs.
	Malt extract:	
132.25	Fluid	40¢ per gal.
132.30	Solid or condensed	30% ad val.

For products of East Germany (consisting of the Soviet zone and Soviet sector of Berlin), which accounted for a very small portion of the imports entered under item 132.20 in 1964, the current rate of duty is (as indicated in part e of general headnote 3 mentioned above) the column 2 rate of 40 cents per 100 pounds.

The column 1 rates of duty listed above reflect concessions granted by the United States in the General Agreement on Tariffs and Trade. They became effective June 6, 1951, for rye malt and solid or condensed malt extract; and January 1, 1948, for barley and other malts. The rate of duty on fluid malt extract reflects a concession that became effective in two annual stages, the second on July 1, 1963.

Because imports of rye malt have been nil in recent years, no meaningful ad valorem equivalent of the duty can be computed. The ad valorem equivalent of the column 1 rate of duty on the imports of barley and other malts in 1964 averaged 6.1 percent, which percentage was representative for most of the imports; on a small amount of imports of high unit value, the corresponding figure was about 4.8 percent. The ad valorem equivalent of the column 2 rate of duty for item 132.20, based on the small imports from East Germany in 1964, was 6.8 percent.

The 40-cent-per-gallon rate was equivalent to 22.5 percent ad valorem for the total imports of fluid malt extract in 1964, and ranged from 22.9 percent for the bulk of the imports from the United Kingdom to 8.1 percent for the small imports from West Germany.

U.S. consumption

Annual U.S. consumption of malt during the period 1960-64 averaged 3.2 billion pounds, or about 6 percent higher than during the preceding 5-year period. The consumption of malt is largely dependent on the demand for fermented and distilled beverages, especially beer. In recent years, the production of these alcoholic beverages has taken more than 90 percent of the U.S. supplies of malt from domestic production and imports. Although the U.S. production of beer has increased during the past decade, the quantity of malt used by brewers increased only slightly because of consumers' increasing preference for the type of beer that requires less malt, but more malt adjuncts, per unit of output.

U.S. consumption of malt extracts amounted to about 2.9 million gallons in 1958. Although statistics on U.S. consumption are not available for the years since 1958, it is known that consumption has declined because automation in the baking industry has made the use of thick, sirupy malt extracts impractical for many operations and has resulted in the substitution of corn sirup and recently of malt flour (ground malt).

U.S. producers and production

In 1963, 43 U.S. establishments produced malt. The greatest concentration of producers was in the North Central States, where 33 plants were located. Wisconsin, with 15 plants, was the most important malt-producing State. About 60 percent of the U.S. output of malt was produced by maltsters that earned virtually all of their income from sales of malt; 40 percent of the U.S. output was produced by brewer-maltsters that used the malt in their own breweries.

Total U.S. production of malt increased from 3.0 billion pounds in 1958 to 3.3 billion pounds in 1964 (table 1). Virtually all of the malt produced was barley malt; only 3.7 million pounds of rye and wheat malts was produced in 1958, the latest year for which data are available.

In 1958, shipments of malt extracts from manufacturing plants amounted to 34.9 million pounds (or 3.2 million gallons at the rate of 11 pounds to the gallon), down from 43.8 million pounds in 1954, and 66.8 million pounds in 1947. Production is believed to have continued to decline in the years since 1958. Malt extracts are marketed by only a few firms, ranging from breweries to firms specializing in the production of malt products.

U.S. exports

During the period 1960-64, annual U.S. exports of barley malt (table 2) ranged from 102 million pounds, valued at $6.4 million (in 1960), to 84 million pounds, valued at $5.4 million (in 1961); the average annual exports were 40 percent less in the 1960-64 period than in the preceding 5-year period. In recent years Venezuela, the Republic of the Congo, Colombia, Mexico, and the Dominican Republic have been the principal foreign markets for U.S. malt. The decline in U.S. exports of barley malt is largely the result of the loss of the Cuban market and the development of malting facilities in South American countries that formerly relied on the United States for their barley malt.

Exports of rye malt and other malts are not separately reported, but it is believed that they are negligible.

The United States is a net exporter of malt extracts. During the period 1960-64, annual U.S. exports of malt extracts declined from 302,000 gallons, valued at $586,000, in 1960 to 223,000 gallons, valued at $435,000, in 1964 (table 3).

U.S. imports

During the period 1960-64, annual U.S. imports of malt, consisting almost entirely of barley malt, ranged from 148 million pounds, valued at $8.5 million, to 94 million pounds, valued at $4.6 million (table 4) and averaged about 30 percent higher than the annual imports during the preceding 5-year period. The annual imports in the 1960-64 period were equivalent to 3 to 5 percent of annual consumption.

Canada has been virtually the only supplier of imported barley malt in recent years. Barley malt imported from Canada has been similar in quality to domestic malt. Most of the imports have gone to the Northeastern and Great Lakes States, where the bulk of the U.S. breweries are located. A substantial part of the imports were for use in Canadian-owned breweries in the United States.

During the years 1958-64, U.S. imports of malt extracts (table 5) ranged from no imports in 1960 to 33,000 gallons, valued at $44,000, in 1962. All of the imports were of fluid malt extract; no imports of solid or condensed malt extract have been reported since 1953. The bulk of the relatively large imports in 1962 were for the account of one concern and consisted of baking-quality fluid malt extract. The ratio of imports to domestic shipments was 0.05 percent in 1958 and was probably not more than 1 percent in any of the years 1959-64. The United Kingdom, West Germany, and Canada have been the only foreign suppliers of malt extract in recent years.

Foreign production and trade

Malt is produced principally in the countries that produce barley. In addition, however, many countries that previously imported malt now import barley and make their own malt.

The principal malt-exporting countries are Belgium, France, Canada, Czechoslovakia, Australia, the United Kingdom, and Denmark. Exports of malt by these countries totaled 1.0 billion pounds in 1963. The principal importing countries in recent years have been West Germany, Switzerland, Italy, Venezuela, and Brazil. Malt from two-row barley, the European variety, has accounted for the largest part of the malt entering international trade.

Annual production of malt in Canada (the source of almost all of the U.S. imports) has averaged about 600 million pounds in recent years. A large part of the Canadian malt is produced by breweries for their own use; some breweries also produce malt for export. During the period 1960-64 Canada's annual exports of malt averaged about 200 million pounds; the United States took about half of Canada's exports of malt in that period.

Malt extracts are not important items of international trade. No data on foreign production of malt extracts and trade therein are available.

Table 1.--Malt: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1958-64

(Quantity in thousands of pounds; value in thousands of dollars)

Year	Production 1/	Imports	Exports	Apparent consumption	Ratio (percent) of imports to consumption
	Quantity				
1958	2/ 3,004,644	108,825	144,075	2,969,394	4
1959	3,145,000	112,520	160,760	3,096,760	4
1960	3,074,400	137,098	101,551	3,109,947	4
1961	3,140,200	136,922	84,323	3,192,799	4
1962	3,157,800	148,486	85,152	3,221,134	5
1963	3/ 3,240,442	99,823	98,723	3,241,542	3
1964	3,332,000	93,740	90,013	3,335,727	3
	Value				
1958	2/ 175,142	6,205	9,221	4/	4/
1959	5/	6,546	10,006	4/	4/
1960	5/	7,348	6,448	4/	4/
1961	5/	7,396	5,398	4/	4/
1962	5/	8,466	5,546	4/	4/
1963	3/ 175,851	5,076	5,505	4/	4/
1964	5/	4,592	5,410	4/	4/

1/ Barley malt only except in 1958 and 1963; see footnotes 2 and 3.

2/ Includes rye and wheat malts amounting to 3,700 thousand pounds, valued at 152 thousand dollars, as reported by the Census of Manufactures; 1958 is the latest year for which the data were separately reported.

3/ Includes rye and wheat malts, as reported by the Census of Manufactures.

4/ Not meaningful.

5/ Not available.

Source: Data on production in 1959-62 and 1964 compiled from official statistics of the U.S. Department of Agriculture; data on production in 1958 and 1963, imports, and exports compiled from official statistics of the U.S. Department of Commerce.

Note.--The United States has not imported rye malt since 1944. Exports of rye and wheat malts are not separately reported, but it is believed that they have been negligible.

Table 2.--Barley malt: U.S. exports, by principal markets, 1960-64

Country	1960	1961	1962	1963	1964
	Quantity (1,000 pounds)				
Venezuela	49,686	54,853	39,319	40,656	45,354
Colombia	8,334	12	-	-	10,125
Mexico	3,251	4,476	5,460	5,457	5,912
Republic of the Congo	6,648	4,543	18,487	16,952	5,899
Honduras	2,596	3,924	3,842	4,501	4,388
Dominican Republic	1,091	1,089	3,190	5,298	4,770
Peru	2,172	1,867	2,008	2,730	2,427
Panama	2,578	1,879	3,904	2,499	2,675
All other	1/ 25,195	11,680	8,942	2/ 20,630	8,463
Total	101,551	84,323	85,152	98,723	90,013
	Value (1,000 dollars)				
Venezuela	3,218	3,539	2,524	2,527	2,853
Colombia	538	1	-	-	569
Mexico	214	280	349	335	355
Republic of the Congo	432	336	1,313	1,041	319
Honduras	157	230	246	263	255
Dominican Republic	63	60	194	277	242
Peru	126	119	130	166	167
Panama	164	112	232	151	154
All other	1/ 1,536	721	558	2/ 745	496
Total	6,448	5,398	5,546	5,505	5,410

1/ Includes 16,618 thousand pounds, valued at 995 thousand dollars, exported to Cuba.

2/ Includes 12,597 thousand pounds of fire-damaged malt, valued at 245 thousand dollars, exported to Canada for use as animal feed.

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

Table 3.--Malt extracts: U.S. exports, by principal markets, 1958-64

Country	1958	1959	1960	1961	1962	1963	1964
	Quantity (1,000 gallons) 1/						
Venezuela	106	186	135	150	124	184	103
Peru	9	7	10	19	17	16	29
Canada	27	51	11	18	18	21	20
Japan	-	-	-	2	4	8	16
Panama	5	3	7	11	9	14	19
Pakistan	-	-	-	2	1	3	11
Mexico	54	50	43	31	15	10	5
Belgium and Luxembourg	2	1	1	6	8	9	2
Cuba	70	119	70	-	-	-	-
All other	14	26	25	18	30	22	18
Total	287	443	302	257	226	287	223
	Value (1,000 dollars)						
Venezuela	189	295	257	293	243	312	204
Peru	19	13	21	40	35	33	61
Canada	63	106	34	32	31	38	40
Japan	-	-	-	4	7	16	36
Panama	9	7	11	16	14	21	28
Pakistan	-	-	-	3	1	5	18
Mexico	96	97	88	64	33	20	9
Belgium and Luxembourg	5	4	2	12	15	17	5
Cuba	120	205	124	-	-	-	-
All other	28	51	49	32	57	40	34
Total	529	778	586	496	436	502	435

1/ Converted from pounds at the rate of 11 pounds to 1 gallon.

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

Table 4.--Barley malt: U.S. imports for consumption, by principal sources, 1960-64

Country	1960	1961	1962	1963	1964
	Quantity (1,000 pounds)				
Canada	137,098	136,920	148,483	98,655	92,307
Netherlands	-	-	-	1,168	639
Belgium and Luxembourg	-	-	-	-	441
East Germany	-	-	-	-	353
West Germany	-	2	3	-	-
Total	137,098	136,922	148,486	99,823	93,740
	Value (1,000 dollars)				
Canada	7,348	7,395	8,465	5,005	4,505
Netherlands	-	-	-	71	40
Belgium and Luxembourg	-	-	-	-	26
East Germany	-	-	-	-	21
West Germany	-	1	1	-	-
Total	7,348	7,396	8,466	5,076	4,592

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

Note.--The United States has not imported rye malt since 1944; imports of wheat malt are not separately reported, but they are believed to have been negligible.

Table 5.--Malt extracts: U.S. imports for consumption and exports of domestic merchandise, 1958-64

Year	Quantity		Value	
	Imports 1/	Exports	Imports	Exports
	Gallons	Gallons		
1958	1,482	287,327	$2,323	$528,825
1959	2,929	443,486	2,082	777,537
1960	-	302,069	-	585,545
1961	2,110	257,391	2,757	495,782
1962	33,493	225,759	44,121	435,864
1963	6,017	286,868	13,172	501,885
1964	3,323	222,721	5,918	435,469

1/ Consisted entirely of fluid malt extract; there have been no imports of solid or condensed malt extract since 1953.

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

Note.--Domestic shipments of malt extracts in 1958 (the latest year for which data are available) amounted to 34.9 million pounds (or 3.2 million gallons, converted at the rate of 11 pounds to the gallon), valued at $5.0 million. The ratio of imports to domestic shipments was probably 1 percent or less in all years.

Commodity	TSUS item
Arrowroot, cassava, and sago flours and starches, and tapioca	132.35
Potato starch	132.50
Other starches	132.55

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

During the period 1960-64, an annual average of 5.8 billion pounds of starch (at least 95 percent corn starch) was produced in the United States, while total annual imports of starch (principally tapioca) averaged 305 million pounds, and annual exports averaged about 74 million pounds.

Description and uses

Starch is the stored form of food for most plant life. It is commercially extracted from grains--corn, sorghum, wheat, and rice; from roots or tubers--potatoes, sweet potatoes, cassava (the source of tapioca), and arrowroot; and from the pith of the sago palm. The starches and flours of arrowroot, cassava, and sago--all tropical plants not grown in the United States--comprise the bulk of U.S. imports of starches, while corn starch (included in item 132.55) comprises the great bulk of U.S. production and consumption of starch. Starches extracted from the other grains mentioned above are also included in item 132.55.

Although starch and flour are generally considered in the trade to be identical products when obtained from arrowroot, cassava, and sago, starch and flour are commercially distinctive products when they are made from potatoes or grains. Potato flour is discussed in the summary on item 140.70; corn flour, in the summary on item 131.20; rice flour, in that on item 131.35; and wheat flour, in that on item 131.40.

The major part of the domestic output of starch is used in the manufacture of other products. It is converted into sirup and sugar (chiefly for foodstuffs), converted into dextrine (an adhesive important for many industrial uses), or used as starch in a wide range of manufacturing processes. Some commercial starch is used as an ingredient of various food products, and some is used in laundry work. (see the separate summaries on dextrine and soluble or chemically

treated starches (item 493.30), corn sugar or dextrose (item 155.60), and corn sirup or dextrose sirup (item 155.65).)

Starch granules, when immersed in hot water, swell and rupture (gelatinize), forming a paste. When cooled, the paste turns into a semitransparent substance with a glossy surface. The adhesiveness of this substance and its property of forming a smooth surface account for most of the industrial uses for starch. The physical properties of the starches, including the size and shape of their granules, vary depending on the raw material from which they are produced. For some purposes, one starch will be chosen because it has certain distinctive and desired characteristics; for other purposes, the choice of which starch is used will be determined primarily on the basis of price. Starches are treated or modified to alter their characteristics and make possible their use for a larger number of purposes. For most purposes all starches are interchangeable or can be modified to perform adequately.

The principal uses of corn starch are in the manufacture of sirup, sugar, and dextrines by the corn starch producers; other consuming industries include papermaking, textiles, laminating and corrugating, laundry, and brewing. Potato starch is used principally in making paper, textiles, adhesives, and food specialties. Wheat starch is used in producing laundry starches, textiles, paper, adhesives, and food products. Rice starch is high-priced and is used in small quantities for special purposes, such as silk-screen printing. Tapioca is used principally in making paper, food products, adhesives, and textiles; sago is consumed chiefly in the textile industry and in the manufacture of adhesives. Arrowroot is a high-priced starch consumed almost wholly in food products. 1/

U.S. tariff treatment

The current column 1 rates of duty applicable to imports (see general headnote 3 in appendix A) are as follows:

TSUS item	Commodity	Rate of duty
132.35	Arrowroot, cassava, and sago flours and starches, and tapioca.	Free
132.50	Potato starch----------	1¢ per lb.
132.55	Other starches----------	0.75¢ per lb.

1/ For additional information on starch, see U.S. Tariff Commission, Starch: Report on Investigation No. 332-37 . . ., 1960 (processed).

The duty-free status of arrowroot, cassava, and sago flours and starches, and tapioca was bound in concessions granted by the United States in the General Agreement on Tariffs and Trade (GATT), effective January 1, 1948. The 1-cent rate of duty applicable to potato starch, which also reflects a GATT concession granted by the United States, effective January 1, 1948, was temporarily increased to 2.5 cents per pound pursuant to Presidential Proclamation No. 3564 (3 CFR, 1959-1963 Comp., p. 318), effective January 7, 1964 (see item 945.13 in appendix A). This was one of the increases in U.S. rates of duty negotiated under article XXVIII of the GATT to restore a balance of concessions between the United States and the European Economic Community (EEC) following the increased restrictions imposed by the EEC in 1962 on imports of poultry. The 2.5-cent-per-pound rate of duty was equivalent to 59.8 percent ad valorem based on imports in 1964.

The 0.75-cent-per-pound rate of duty applicable to other starches reflects two GATT concessions, one effective on January 1, 1948, and the other on June 6, 1951; this rate was equivalent to 16.3 percent ad valorem, based on the average unit value of imports in 1964.

U.S. consumption

The consumption of commercially produced starch has risen irregularly during the last three decades. Annual starch consumption averaged about 6.0 billion pounds during the period 1960-64 (table 1), compared with an average of 5.1 billion pounds in the period 1955-59. The increased use of starch is the result of population growth, new uses for starch, and the growth of certain industries that use starch, especially the paper industry.

In recent years more than half of the annual starch consumption has been accounted for by the starch-producing firms themselves, principally the wet-milling firms, which convert about 60 percent of their corn starch output into sirup, sugar, and dextrine. In the period 1960-64, about 93 percent of the commercial starch consumed in the United States was corn starch, 4 percent was tapioca, and the remainder consisted of starches from potatoes, wheat, arrowroot, sago, and rice.

U.S. producers

Three separate industries produce starch in the United States: (1) the corn wet-milling industry; (2) the potato starch industry; and (3) the wheat starch industry. In 1963, 59 plants produced starch in the United States. In 1960, the last year for which separate data are available, 12 plants operated by 9 concerns produced corn starch; 4 of the plants were in Illinois, 3 in Iowa, 2 each in Missouri and Indiana, and 1 in Texas. Four concerns accounted for about three-fourths of production. In addition to producing starch, the corn wet-milling

industry produces sugar, sirup, dextrine, corn oil, corn oil meal, gluten feed, and gluten meal.

There were 36 plants producing potato starch in 1960--21 in Maine, 9 in Idaho, 2 in Colorado, and 1 each in New York, California, Washington, and North Dakota. The largest concerns were located in the Western States. For most potato starch plants, which are small and operate only part time, potato starch is the only product. Potato pulp, which is used as an ingredient of livestock feed, is marketed by some of the large producers. In 1960, wheat starch was produced in 4 plants, 1 each in Michigan, Iowa, Ohio, and Colorado.

U.S. production

Total starch production in the United States has been increasing for many years; average annual production increased by about 14 percent from the 1955-59 period to the 1960-64 period. In the latter period, annual production of corn starch (including sorghum starch) averaged about 5.7 billion pounds (table 2), and that of potato starch, about 130 million pounds (table 3). Corn starch production usually fluctuates little from year to year; the wide fluctuations in the annual production of potato starch reflect the quantities of cull and surplus potatoes available, since only low-priced potatoes can be economically processed into starch in the United States. The sharp decline in the production of potato starch from 1963 to 1964 reflects the small potato crop in 1964 and the resultant high price for potatoes in that year. In 1963, combined production of wheat and rice starch totaled about 64 million pounds, with a value of $6 million. Tapioca, arrowroot, and sago starches are not produced in the United States; some of the imports, however, are modified by the importing firms before being sold to consumers or exported.

During each of the years 1960-64, about 60 percent of the corn starch output was converted by the producing concerns into sirup, sugar, and dextrine. Shipments of corn starch in those years increased from 2.2 billion pounds in 1960 to 2.5 billion pounds in 1964 (table 2). The 1963 U.S. Census of Manufactures reported shipments of 2.4 billion pounds of corn starch, valued at $177 million.

The corn wet-milling industry uses domestic shelled corn and significant quantities of sorghum grain as raw materials. In recent years the wet-milling industry has consumed about 4 percent of the annual U.S. corn crop, or about 11 percent of the corn sold off the farm.

In most years since 1937, Government marketing assistance programs have diverted part of the marketable grade of potatoes to starch plants. In recent years an average of 5 percent of the potato crop has been utilized for starch production. The 1963 Census of

Manufactures reported shipments of 195 million pounds of potato starch, valued at $8 million.

Wheat starch and wheat gluten are produced as coproducts in the processing of clears, a residual wheat flour of grades unsatisfactory for making the white bread that is popular in the United States. In recent years the quantity of flour used in the production of wheat starch has been equivalent to less than 1 percent of the total annual sales of wheat from farms.

U.S. exports

U.S. exports of starches have fluctuated widely from year to year. During the period 1960-64, annual exports of starches (table 4) ranged from 65 million pounds in 1962 to 96 million pounds in 1964 and averaged about 48 percent lower than in the preceding 5-year period, 1955-59. The decline is primarily the result of the modernization and expansion of starch plants in foreign countries, including plants owned by subsidiaries of U.S. corn starch concerns. Exports were equivalent to about 1 percent of U.S. production (3 percent of production for sale) during 1960-64.

In the export statistics, starches are divided into three categories: corn starch; "other grain starches," which includes sorghum-grain starch and wheat starch; and "vegetable starches not elsewhere classified," which includes potato starch and various modified imported starches. In recent years the exports have consisted mostly of corn starch, sorghum-grain starch, and modified imported starches. During the period 1960-64, Canada and the United Kingdom were the most important consistent markets for corn starch and, together with Venezuela, for "other grain starches"; Canada was also the most important market for "vegetable starches not elsewhere classified."

U.S. imports

Annual U.S. imports of all starches averaged 305 million pounds, valued at $11.6 million, during 1960-64 (table 5), or about 47 percent greater than during the period 1955-59. The level of imports in recent years, however, has been lower than that in the years immediately preceding World War II. During the years 1960-64, annual imports of cassava flour and tapioca, which accounted for 84 percent of the total U.S. imports of starch, ranged from 163 million pounds, valued at $6.0 million (in 1962) to 307 million pounds, valued at $10.8 million (in 1961). The low level of imports in 1962 reflected the substantial shipments of tapioca exported from producing countries to Europe because of a shortage of potatoes for starch in that area. The level of imports during 1960-64, which was the highest since World War II,

was lower than that in 1937-39, when annual imports averaged 349 million pounds. Thailand and Brazil have been the principal sources of U.S. imports of tapioca (table 6). All of the tapioca consumed in the United States is imported.

Annual imports of arrowroot and sago starches combined averaged 5.3 million pounds during 1960-64 and ranged from 6.2 million pounds, valued at $630,000, in 1960 to 4.3 million pounds, valued at $472,000, in 1964. Imports were slightly lower during 1960-64 than during the preceding 5-year period. Arrowroot and sago starches made up about 2 percent of the total U.S. starch imports during 1960-64. Imports supply all of the arrowroot and sago starches consumed in the United States. The Leeward and Windward Islands, Jamaica, Brazil, and Trinidad have been the principal sources of imports of arrowroot starch (table 7), while Malaysia and Indonesia have supplied most of the imports of sago starch (table 8).

Imports of potato starch, which accounted for about 3 percent of the total U.S. starch imports during 1960-64, ranged from 2.4 million pounds, valued at $160,000, in 1962 to 27.3 million pounds, valued at $1.1 million, in 1963. The wide annual fluctuations in the imports of potato starch resulted primarily from annual variations in the potato crops in the producing countries. The increase in the rate of duty from 1 cent per pound to 2.5 cents, effective January 7, 1964 (see section on U.S. tariff treatment), probably also contributed to the decline in imports from 1963 to 1964. In 1964 the imports of potato starch amounted to 8.1 million pounds, with a value of $338,000. In recent years the Netherlands has been the most important supplier of potato starch imports (table 9). In the period 1960-64, imports supplied from 2 to 19 percent of the annual consumption of potato starch.

U.S. imports of "other starches," which consist principally of corn starch along with small amounts of rice and wheat starch, reached a peak of 42 million pounds, valued at $1.9 million, in 1960 and declined irregularly to 18 million pounds, with a value of $0.8 million, in 1964. Annual imports of such starches averaged about 180 percent larger in 1960-64 than during the preceding 5-year period. Even in the period 1960-64, however, imports supplied 1 percent or less of the corn starch consumed in the United States. In recent years the most important consistent suppliers of imports of corn starch have been the Netherlands, Yugoslavia, the Republic of South Africa, West Germany, Italy, Belgium, and France (table 10).

Foreign production and trade

Cassava, corn, potatoes, rice, wheat, and other raw materials from which starch can be commercially extracted are produced in large quantities in the temperate and tropical areas of the world. In most

countries where these materials are produced, their use for the production of starch accounts for only a small part of their total use.

Cassava root is a dietary staple in many tropical countries; however, in Thailand it is not itself important as a food but is used principally as a source of starch (tapioca). In recent years Thailand has been the world's largest exporter of tapioca. In Brazil, the world's largest producer of cassava root, most of the production is used for food, although large amounts are also processed into tapioca for use in Brazilian industries and for export, principally to the United States.

The Netherlands, West Germany, and Belgium, the principal foreign exporters of corn starch, use mainly imported corn in the production of corn starch. A large part of this corn is supplied by the United States. Most foreign corn starch plants, however, use locally produced corn. A leading U.S. producer of corn starch has foreign plant affiliates in the Netherlands, West Germany, Belgium, Colombia, Uruguay, Argentina, Mexico, Canada, France, and Italy that account for a large part of foreign production and exports of corn starch.

Foreign production of potato starch is centered principally in Europe. In some European countries special varieties of potatoes are grown primarily for starch production. Such varieties yield 18-22 percent starch, compared with the yield of 10-12.5 percent obtained in the United States. The Netherlands and Denmark are the leading potato starch exporters.

Table 1.--Starches: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1960-64

Year	Production 1/			Imports
	Sold as starch (shipments)	Corn starch consumed by the producing concerns (captive)	Total	
	Million pounds	Million pounds	Million pounds	Million pounds
1960	2,268	3,185	5,453	335
1961	2,413	2,985	5,398	345
1962	2,471	3,286	5,757	209
1963	2,490	3,578	6,068	312
1964	2,529	3,848	6,377	325

Year	Exports	Apparent consumption	Ratio of imports to--	
			Production sold as starch	Apparent consumption
	Million pounds	Million pounds	Percent	Percent
1960	68	5,720	15	6
1961	66	5,677	14	6
1962	65	5,901	8	4
1963	75	6,305	13	5
1964	96	6,606	13	5

1/ Corn and potato starch only. Production data for wheat and rice starch are available only for 1963; in that year, 64 million pounds of wheat and rice starch was produced.

Source: Production, Corn Industries Research Foundation, Inc., Washington, D.C., and official statistics of the U.S. Department of Agriculture; imports and exports compiled from official statistics of the U.S. Department of Commerce.

Table 2.--Corn starch: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1960-64

Year	Production 1/			Imports 3/
	Sold as starch (shipments)	Corn starch consumed by the producing concerns (captive) 2/	Total	
	Million pounds	Million pounds	Million pounds	Million pounds
1960	2,151	3,185	5,336	42
1961	2,177	2,985	5,162	29
1962	2,341	3,286	5,627	37
1963	2,355	3,578	5,933	35
1964	2,495	3,848	6,343	18

Year	Exports 4/	Apparent consumption	Ratio of imports to--	
			Production sold as starch	Apparent consumption
	Million pounds	Million pounds	Percent	Percent
1960	64	5,314	2	1
1961	60	5,131	1	1
1962	56	5,608	2	1
1963	66	5,902	1	1
1964	85	6,276	1	5/

1/ Includes starch made from all varieties of corn and grain sorghum.
2/ Consists principally of the wet-starch output, expressed in terms of starch of 10-percent moisture content that was converted into sirup, sugar, etc., by the starch-producing concerns.
3/ Includes small amounts of rice and wheat starch.
4/ Includes small amounts of wheat starch.
5/ Less than 0.5 percent.

Source: Production, Corn Industries Research Foundation, Inc., Washington, D.C.; imports and exports compiled from official statistics of the U.S. Department of Commerce.

Table 3.--Potato starch: U.S. production, imports for consumption, and apparent consumption 1960-64

Year	Production 1/	Imports	Apparent consumption	Ratio of imports to consumption
	Million pounds	Million pounds	Million pounds	Percent
1960	117	7	124	6
1961	236	6	242	2
1962	130	2	132	2
1963	135	27	162	17
1964	34	8	42	19

1/ For crop years beginning Apr. 1. Estimated on the assumption that 100 pounds of raw potatoes yield 11.5 pounds of starch.

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

Note.--Exports of potato starch are not separately reported but are believed to be negligible. See table 4 for exports of "vegetable starches, n.e.c." which in 1960-64 consisted largely of modified imported starches but included potato starch.

Table 4.--Starches: U.S. exports of domestic merchandise, by kinds, 1960-64

Year	Corn starch	Other grain starch 1/	Vegetable starches n.e.c. 2/	Total
	Quantity (million pounds)			
1960	52.4	11.5	4.4	68.3
1961	45.9	13.7	6.0	65.6
1962	47.9	8.5	9.1	65.5
1963	53.9	12.1	9.5	75.5
1964	76.2	9.3	10.6	96.1
	Value (1,000 dollars)			
1960	4,461	780	529	5,770
1961	3,730	758	898	5,386
1962	4,073	609	1,043	5,725
1963	4,688	810	1,179	6,677
1964	6,665	698	1,245	8,608

1/ Principally sorghum-grain starch.
2/ Not elsewhere classified; includes various imported starches modified in the United States.

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

Table 5.--Starches: U.S. imports for consumption, by kinds, 1960-64

Year	Cassava flour and tapioca	Arrowroot and sago starches	Potato starch	Other starches 1/	Total
	Quantity (million pounds)				
1960	280.0	6.2	7.0	41.9	335.1
1961	306.6	4.7	5.5	28.7	345.5
1962	163.2	5.9	2.4	37.3	208.8
1963	244.4	5.8	27.3	34.8	312.3
1964	294.4	4.3	8.1	17.8	324.6
	Value (1,000 dollars)				
1960	9,976	630	420	1,934	12,960
1961	10,791	492	360	1,356	12,999
1962	6,040	654	160	1,498	8,352
1963	9,125	690	1,122	1,391	12,328
1964	9,566	472	338	816	11,192

1/ Principally corn starch.

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

Table 6.--Cassava flour and tapioca: U.S. imports for consumption, by principal sources, 1960-64

Country	1960	1961	1962	1963	1964
	Quantity (million pounds)				
Thailand	196.6	244.8	129.7	209.6	235.2
Brazil	76.4	50.9	27.4	25.7	56.3
Malaysia 1/	.7	4.5	1.7	4.6	2.0
All other	6.3	6.4	4.4	4.5	.9
Total	280.0	306.6	163.2	244.4	294.4
	Value (1,000 dollars)				
Thailand	6,819	8,453	4,684	7,978	8,031
Brazil	2,856	1,850	1,092	717	1,421
Malaysia 1/	26	154	63	178	67
All other	275	334	201	252	47
Total	9,976	10,791	6,040	9,125	9,566

1/ For the years shown Malaysia included the former Federation of Malaya, Singapore, Sarawak, and North Borneo.

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

Table 7.--Arrowroot starch and flour: U.S. imports for consumption, by principal sources, 1960-64

Country	1960	1961	1962	1963	1964
	Quantity (million pounds)				
Leeward and Windward Islands	2.3	1.2	4.4	3.9	3.0
Jamaica	1.5	1.3	.2	1/	.2
Brazil	.8	.8	.3	.4	.3
Trinidad	.1	1.0	.2	.3	-
All other	1/	1/	1/	.4	1/
Total	4.7	4.3	5.1	5.0	3.5
	Value (1,000 dollars)				
Leeward and Windward Islands	266	134	534	529	366
Jamaica	225	147	24	4	48
Brazil	65	78	32	51	29
Trinidad	14	117	31	35	-
All other	1	2	3	46	2
Total	571	478	624	665	445

1/ Less than 50,000 pounds.

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

Table 8.--Sago starch and flour: U.S. imports for consumption, by principal sources, 1960-64

Country	1960	1961	1962	1963	1964
	Quantity (million pounds)				
Malaysia 1/	0.8	0.3	0.5	0.6	0.5
Indonesia	.7	.1	.3	.3	2/
All other	2/	2/	-	-	3/ .2
Total	1.5	.4	.8	.9	.7
	Value (1,000 dollars)				
Malaysia 1/	31	10	22	19	17
Indonesia	26	4	8	6	2
All other	2	4/	-	-	3/ 8
Total	59	14	30	25	27

1/ For the years shown Malaysia included the former Federation of Malaya, Singapore, Sarawak, and North Borneo.

2/ Less than 50 thousand pounds.

3/ Includes 112 thousand pounds, valued at slightly more than 3 thousand dollars, imported from Japan, and 78 thousand pounds, valued at nearly 3 thousand dollars, imported from Thailand.

4/ Less than $500.

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

Table 9.--Potato starch: U.S. imports for consumption, by principal sources, 1960-64

Country	1960	1961	1962	1963	1964
	Quantity (million pounds)				
Netherlands	4.0	3.9	2.4	27.1	7.8
Poland	-	-	1/	.1	.2
Denmark	1.0	1.5	1/	.1	1/
All other	2/ 2.0	.1	1/	1/	.1
Total	7.0	5.5	2.4	27.3	8.1
	Value (1,000 dollars)				
Netherlands	250	267	155	1,114	321
Poland	-	-	2	2	11
Denmark	56	88	2	4	1
All other	2/ 114	5	1	2	5
Total	420	360	160	1,122	338

1/ Less than 50,000 pounds.
2/ Includes 1.6 million pounds, valued at 87 thousand dollars, imported from Ireland.

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

Table 10.--Other starches: 1/ U.S. imports for consumption, by principal sources, 1960-64

Country	1960	1961	1962	1963	1964
	Quantity (million pounds)				
Netherlands	19.6	12.4	11.4	8.6	4.6
Yugoslavia	5.1	4.2	5.2	6.5	4.5
Brazil	-	-	-	-	3.5
Republic of South Africa	.3	4.8	7.0	8.2	2.9
Italy	.4	.4	.6	.7	.7
West Germany	5.2	2.1	5.4	6.8	1.1
Belgium and Luxembourg	7.5	4.1	2.7	.4	.1
France	3.6	.5	4.9	3.4	.2
All other	.2	.2	.1	.2	.2
Total	41.9	28.7	37.3	34.8	17.8
	Value (1,000 dollars)				
Netherlands	961	621	501	390	218
Yugoslavia	180	150	167	203	150
Brazil	-	-	-	-	133
Republic of South Africa	14	200	245	285	106
Italy	36	40	59	69	77
West Germany	234	102	215	263	69
Belgium and Luxembourg	333	187	104	23	11
France	153	23	184	126	7
All other	23	33	23	32	45
Total	1,934	1,356	1,498	1,391	816

1/ Primarily corn starch.

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

Commodity	TSUS item
Animal feeds of vegetable origin:	
Bran, shorts, and middlings	184.10
Grain hulls	184.40
Grain or seed screenings, scalpings, chaff, or scourings:	
Of flaxseed	184.45
Other	184.47
Byproducts obtained from the milling of grains	184.70 (pt.)
Mixed feeds and mixed feed ingredients	184.70 (pt.)
Animal feeds and ingredients not elsewhere enumerated	184.75

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

U.S. foreign trade in the feeds and feed ingredients included in this summary is small relative to domestic production. During the period 1960-64, annual U.S. imports of these products averaged about $10 million, while annual exports averaged about $46 million.

Description and uses

For tariff purposes the term "animal feeds and ingredients therefor" embraces products chiefly used as feed for animals or as ingredients in such feed but does not include any product provided for in schedules 4 (except part 2E) or 5 (except part 1K) of the TSUS. (See headnotes to part 15C of schedule 1 in appendix A.) This summary, however, does not include all the so-called animal feeds and ingredients therefor; see also the summaries on dried beet pulp (item 184.20), brewers' and distillers' grains and malt sprouts (item 184.25), hay (item 184.30), vegetable oil cakes and meals (items 184.50 and 184.52), and feeds of animal or fish origin (items 184.54-184.65).

The most important of the bran, shorts, and middlings in item 184.10 are those obtained from milling wheat. Wheat bran, consisting primarily of the coarse outer coverings of the wheat kernel, is a popular cattle feed. Middlings and shorts (the terms are sometimes used interchangeably) are obtained from milling spring wheats and winter wheats, respectively; they are less bulky and fibrous than wheat bran and are used principally in mixed feeds for poultry and swine. Rice bran, which consists of the bran layers and the germ removed in milling rice, is used primarily in mixed feeds for ruminants.

Grain hulls (item 184.40) are primarily byproducts of oat and barley milling. They are bulky, fibrous feeds used principally in mixed feed for cattle. Grain or seed screenings (items 184.45 and 184.47), which include shrunken and broken grain kernels, weed seeds, and mill sweepings, vary widely in composition, feed value, and use.

Hominy feed (in item 184.70), a byproduct of the dry milling of corn, consists of a mixture of corn bran, germ, and part of the starchy portion of the kernels. Although hominy feed is substituted for corn in rations for cattle, swine, and poultry, its principal use is in dairy-cattle feed.

Corn gluten feed and gluten meal (also in item 184.70) are residual products of the corn wet-milling process. Corn gluten meal consists only of gluten, while corn gluten feed is a combination of bran and gluten meal and sometimes also corn solubles and corn oil meal. On the average, corn gluten feed contains about 25 percent protein, and corn gluten meal, about 43 percent. Because of the poor quality of the protein, these byproducts are used principally in mixed feeds for ruminants. Gluten meal, which is less bulky and less fibrous than gluten feed, is also used in mixed feeds for poultry and swine.

As indicated, the feed products of vegetable origin discussed above are generally consumed as ingredients of mixed animal feeds. Such mixed feeds are prepared according to numerous formulas, each designed to meet the needs of a particular species. In general, the bulky and fibrous feeds are fed to ruminants, while the denser, less fibrous feeds are used for poultry, swine, pets, and other nonruminants. Many mixed feeds include not only the grain products discussed above, but also various ingredients that are not "animal feeds or ingredients therefor" within the meaning of headnote 1(a) to part 15C of schedule 1 of the TSUS (e.g., bone meal in item 480.40, and dicalcium phosphate in 418.28). The mixed feeds provided for in item 184.70, however, consist of not less than 6 percent by weight of grains (including products or byproducts obtained in milling grains) in combination with molasses, oil cake, oil-cake meal, and other feedstuffs. Mixed feeds and feed ingredients of less than 6 percent by weight of grain are included in item 184.75.

The principal products included in feeds and ingredients not elsewhere enumerated (item 184.75) are legume meals such as alfalfa meal (including pellets made from the meal), dried citrus pulp, ground phosphate rock, various fish and bird foods, and other mixed feeds and feed ingredients not included in item 184.70. Alfalfa pellets, as well as dried citrus pulp, a byproduct of juice production, are usually fed directly to animals as feed, while ground phosphate rock is an ingredient of or mineral supplement to animal feeds, competing with bone meal and dicalcium phosphate.

The ground phosphate rock used as a feed ingredient is either naturally low in fluorine or has first been treated with phosphoric acid to reduce its fluorine content. A recent administrative interpretation indicates that feed-quality ground phosphate rock of both types is provided for under item 184.75. The natural phosphate rock of feed quality is not mined in the United States; it is imported principally from Mexico. The bulk of the phosphate rock used for animal feeding in the United States, however, is supplied by U.S. producers. The domestic phosphate rock, which is of high fluorine content and used chiefly as a fertilizer (see the summary on crude phosphates, item 480.45), is defluorinated and ground for use not only in feed but also in the production of dicalcium phosphate.

U.S. tariff treatment

The current column 1 rates of duty applicable to imports (see general headnote 3 in appendix A) are as follows:

TSUS item	Commodity	Rate of duty
184.10	Bran, shorts, and middlings	2.5% ad val.
184.40	Grain hulls	2.5¢ per 100 lbs.
	Grain or seed screenings, scalpings, chaff, or scourings:	
184.45	Of flaxseed	0.5% ad val.
184.47	Other	2.5% ad val.
184.70	Byproducts obtained from the milling of grains, mixed feeds, and mixed-feed ingredients.	2.5% ad val.
184.75	Animal feeds and ingredients not elsewhere enumerated.	10% ad val.

These rates reflect concessions granted by the United States in the General Agreement on Tariffs and Trade (GATT). The rates for TSUS items 184.10, 184.40, 184.47, and the part of 184.70 covering byproduct feeds have been in effect since January 1, 1948. Those for the part of item 184.70 covering mixed feeds and 184.75 have been in effect since June 6, 1951. The rate of duty for item 184.45 reflects a GATT concession that became operative in two annual stages, the second on July 1, 1963. The ad valorem equivalent of the duty on the grain hulls imported in 1964 was 2.9 percent, which represented the level of the duty for the bulk of the grain hulls imported in that year.

Methionine, an amino acid chiefly used in mixed feeds for poultry, was subject to classification as an animal-feed ingredient under item 184.75 prior to December 7, 1965. Effective on that date, headnote 1(a) to schedule 1, part 15, subpart C, of the TSUS was amended, pursuant to Public Law 89-241, to assure that the products provided for

in schedules 4 (except part 2E) and 5 (except part 1K), even though chiefly used for "animal feeds and ingredients therefor," would be classified under schedule 4 or 5. The amendment to the headnote now makes methionine classifiable under item 425.04. It also removes doubt as to the proper classification of dicalcium phosphate, an ingredient of animal feeds (see item 418.28). The article description of item 192.05 was also amended by Public Law 89-241 to include all seaweed, thus making kelp meal (a dried and ground seaweed chiefly used as a supplement to livestock feeds) free of duty as seaweed, ground or pulverized; kelp meal had previously been dutiable under item 184.75 at 10 percent ad valorem.

U.S. consumption and production

U.S. consumption of the feeds herein considered, supplied almost entirely by domestic production, has been increasing for many years. Although the quantity of byproducts fed to animals has increased, mixed feeds have accounted for a larger share of the total feeds consumed in recent years and now comprise the great bulk of consumption.

U.S. production statistics are incomplete inasmuch as data for certain milled-grain byproducts and for mixed feeds produced at the location where consumed are not reported. Moreover, production data for mixed feeds include unknown quantities that have also been separately reported as byproduct feeds or alfalfa meal. The following tabulation shows the data on the U.S. production of mixed feeds, byproduct feeds, and alfalfa meal for 1961-64 (in thousands of short tons):

Year	Mixed feeds	Byproduct feeds	Alfalfa meal
1961	1/ 52,700	9,830	1,496
1962	56,072	10,058	1,499
1963	57,347	10,291	1,615
1964	55,900	10,466	1,863

1/ Partly estimated.

In 1963, 2.2 million tons of dog and cat food containing grain was produced in addition to the 57.3 million tons of mixed feeds shown above; data for other recent years are not available. Dog and cat food in the canned form accounted for half of the output in 1963, with the remainder consisting of biscuits, pellets, and meal. In 1964, poultry feeds accounted for about half of the reported commercial production of mixed feeds, cattle and sheep feeds comprised a third, and swine and other feeds, the remaining sixth.

The 7,000 to 9,000 establishments producing prepared animal feeds account for about four-fifths of the total domestic production of the

feedstuffs here considered. About 2,600 of these establishments produce complete feeds, supplements, and concentrates for commercial sale; the remainder are local mills and custom mills which mix feed ingredients with their customers' grains. About 1,000 establishments account for the remaining production of the feedstuffs considered in this summary. Among these are 2 firms that produce defluorinated rock phosphate and about 50 that produce citrus pulp; the rest supply grain-milling byproducts.

Feed manufacturers generally derive most of their income from the sale of mixed feed. For millers, however, the income from the sale of byproduct feeds is generally of minor importance. The two firms producing defluorinated rock phosphate are large chemical firms for which the sale of defluorinated rock phosphate provides only a minor source of income. Establishments producing mixed feeds and grain-milling byproducts are widely distributed throughout the United States.

U.S. exports

Annual U.S. exports of mixed feeds, grain-milling byproducts, and other feeds nearly tripled between 1960 and 1964, increasing from 372,000 short tons, valued at $28 million, to 938,000 short tons, valued at $62 million (table 1). The bulk of the exports were usually high-valued feeds, not directly comparable with imports, which were largely low-valued grain-milling byproducts. Higher standards of living, particularly in Europe and Japan, have resulted in a larger demand for animal protein in the human diet, which has in turn increased the requirements for livestock and poultry feeds.

U.S. exports of corn-milling byproducts (gluten feed, gluten meal, and hominy feed), which increased substantially, from 36,000 tons in 1960 to 180,000 tons in 1964, were shipped primarily to the Netherlands, Iceland, and Italy. Annual exports of wheat-milling byproducts ranged irregularly from 20,000 to 49,000 tons during 1960-64 and went principally to Japan. Exports of feeds for dairy animals increased from 6,000 tons in 1960 to 11,000 tons in 1964; Canada, Mexico, and Italy have been the most consistent markets in recent years. Exports of poultry feeds increased from 111,000 tons in 1960 to 151,000 tons in 1964; the principal markets in recent years have been Mexico, Jamaica, Trinidad, and Lebanon. U.S. exports of other mixed feeds and feed ingredients increased substantially, from 172,000 tons in 1960 to 572,000 tons in 1964; Japan and Europe were the principal markets.

U.S. imports

During 1960-64, annual U.S. imports of the feeds and feed ingredients included in this summary fluctuated irregularly from 207,000 tons to 395,000 tons (table 2); in each year imports were equivalent to less

than 1 percent of production. The annual volume of imported feeds depended largely upon the relationship between prices in Canada (the principal source of imports) and those in the United States.

Imports of bran, shorts, and middlings increased from 67,000 tons, valued at $3.0 million, in 1960 to 152,000 tons, valued at $5.4 million, in 1964, and averaged about 4 percent larger during 1960-64 than during 1955-59. Imports of grain hulls likewise increased, from 7,000 tons, valued at $0.2 million, in 1960, to 17,000 tons, valued at $0.3 million, in 1964, averaging about 35 percent larger during 1960-64 than during 1955-59. Imports of flaxseed screenings, however, though increasing from 19,000 tons, valued at slightly more than $0.6 million, in 1960 to 30,000 tons, valued at a little less than $0.6 million, in 1964, averaged about 28 percent smaller during 1960-64 than in 1955-59. Imports of grain and seed screenings other than flaxseed fluctuated irregularly in a range of 84,000 tons, valued at $1.8 million, in 1962 to 143,000 tons, valued at $2.7 million, in 1964 and averaged about 32 percent smaller during 1960-64 than in the preceding 5-year period. Canada has been virtually the only source of imports of these byproduct feeds in recent years.

Imports of grain-milling byproducts, mixed feeds, and mixed feed ingredients during 1960-64 ranged from 26,000 tons, valued at $1.6 million, in 1962 to 78,000 tons, valued at $3.6 million, in 1960; the principal imported items were hominy feed, mixed feeds, corn gluten feed and meal, and feed flour. Canada and, in some years, Mexico were the principal sources of imports.

Annual data are not available on the imports of "other animal feeds and ingredients therefor." In 1964, imports of 75,000 tons, valued at $3.0 million, were reported; however, a significant part of these imports were methionine, and kelp meal, which since December 7, 1965, have not been subject to classification under item 184.75 (see tariff treatment section). Other imported items included ground rock phosphate of low fluorine content, dried citrus pulp, bird food, and fish food. Mexico has supplied virtually all of the ground rock phosphate, the principal import item, in recent years.

Table 1.--Feeds: U.S. exports of domestic merchandise, by specified types, 1960-64

Year	Corn feeds	Wheat feeds	Mixed feeds for--		Feeds n.e.c. 1/	Total
			Dairy animals	Poultry		
	Quantity (1,000 short tons)					
1960	36	47	6	111	172	372
1961	35	20	6	122	234	417
1962	98	49	9	125	441	722
1963	171	35	6	130	625	967
1964	180	24	11	151	572	938
	Value (1,000 dollars)					
1960	2,142	2,136	662	10,370	12,987	28,297
1961	2,245	1,141	680	10,577	16,076	30,719
1962	5,154	2,576	944	12,189	26,609	47,472
1963	9,252	1,976	770	13,085	35,784	60,867
1964	9,580	1,389	1,193	15,500	34,508	62,170

1/ Not elsewhere classified; includes alfalfa meal, pet foods, swine feeds, seed screenings, and byproducts of milling grains (other than corn and wheat).

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

Table 2.--Feeds: U.S. imports for consumption, by specified types, 1960-64

Type (TSUS item)	1960	1961	1962	1963	1964
	Quantity (1,000 short tons)				
Bran, shorts, and middlings (184.10)	66,608	61,756	65,449	127,044	152,298
Grain hulls (184.40)	7,069	8,090	12,266	17,287	17,006
Flaxseed screenings (184.45)	18,951	26,552	19,356	20,214	30,334
Other grain or seed screenings (184.47)	117,296	131,102	83,697	105,669	142,586
Mixed feeds and grain-milling by-products (184.70)	77,890	36,015	26,269	34,592	52,974
Total	287,814	263,515	207,037	304,806	395,198
	Value (1,000 dollars)				
Bran, shorts, and middlings (184.10)	3,026	2,905	3,157	5,172	5,442
Grain hulls (184.40)	159	147	233	330	290
Flaxseed screenings (184.45)	621	735	564	481	574
Other grain or seed screenings (184.47)	2,053	2,180	1,793	2,090	2,685
Mixed feeds and grain-milling by-products (184.70)	3,606	1,906	1,570	2,152	3,211
Total	9,465	7,873	7,317	10,225	12,202

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

Commodity	TSUS item
Beet pulp, dried	184.20

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

U.S. consumption of dried beet pulp, a byproduct of the production of beet sugar, used as a livestock feed, is supplied almost entirely by domestic producers. During 1960-64 annual imports were equivalent to 1 to 2 percent of annual consumption and averaged $490,000; exports were negligible.

Description and uses

Dried beet pulp is a bulky, low-protein byproduct of beet sugar production. It is used principally for livestock feed, as a replacement for part of the grain in rations of beef cattle, dairy cattle, and sheep. In its original state, the beet pulp is moist and will spoil within a short time. Although some beet pulp is utilized in the moist state, most is dried to improve its handling and keeping qualities. The addition of beet molasses to the pulp increases its palatability to livestock; with the molasses added it is marketed as dried molasses beet pulp.

U.S. tariff treatment

The current column 1 rate of duty applicable to imports (see general headnote 3 in appendix A) is as follows:

TSUS item	Commodity	Rate of duty
184.20	Beet pulp, dried	$1.70 per short ton

This rate reflects a concession granted by the United States in the General Agreement on Tariffs and Trade (GATT) that became effective on January 1, 1948. Prior to August 31, 1963 (the effective date of the TSUS), the GATT rate was $1.90 per long ton of 2,240 pounds; in the TSUS this rate was converted to $1.70 per short ton of 2,000 pounds.

The rate of duty was equivalent to 4.6 percent ad valorem based on total imports in 1964, but it ranged from 3.5 percent to 6.1

percent for individual months. Variations in the unit value indicate that imports included both dried beet pulp and dried molasses beet pulp in bulk and in bags.

U.S. consumption, production, and foreign trade

Beet pulp is a byproduct of all 60 beet sugar mills in the United States. The mills are located principally in California, Idaho, Colorado, Washington, and Minnesota. Sale of the pulp is a minor source of income for them.

U.S. production of dried beet pulp, which is approximately equivalent to consumption, increased from 724,000 tons in 1960 to 1,186,000 tons in 1964 and averaged about 73 percent greater during 1960-64 than during the preceding 5-year period (table 1). The increase is a result of the loss of Cuba as a source of sugar and the subsequent increase in the production of domestic beet sugar. U.S. exports of beet pulp are not separately reported but are believed to be small.

Annual U.S. imports of dried beet pulp during the period 1960-64 ranged from 16,400 tons, valued at $631,000, in 1960 to 7,200 tons, valued at $348,000, in 1961 and averaged about 53 percent less than during the preceding 5-year period. Canada has generally been the source of most of the imports (table 2). Imports usually enter Puerto Rico and feed-deficit areas of northeastern United States.

Table 1.--Beet pulp, dried: U.S. production, imports for consumption, and apparent consumption, 1960-64

Year	Production 1/	Imports		Apparent consumption	Ratio of imports to consumption
		Quantity	Value		
	1,000 short tons	1,000 short tons	1,000 dollars	1,000 short tons	Percent
1960	724	16	631	740	2
1961	779	7	348	786	1
1962	885	9	377	894	1
1963	1,048	12	564	1,060	1
1964	1,186	14	531	1,200	1

1/ On a crop-year basis, beginning Oct. 1 of previous year.

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

Table 2.--Dried beet pulp: U.S. imports for consumption, by principal sources, 1960-64

Country	1960	1961	1962	1963	1964
	Quantity (1,000 short tons)				
Canada	9.4	3.5	7.4	10.8	14.2
Trinidad and Tobago	1.9	1.1	.6	.5	-
Netherlands	.2	2.3	.7	-	-
All other	1/ 4.9	.3	.1	.4	-
Total	16.4	7.2	8.8	11.7	14.2
	Value (1,000 dollars)				
Canada	406	152	314	537	531
Trinidad and Tobago	60	33	18	15	-
Netherlands	11	155	39	-	-
All other	1/ 154	8	6	12	-
Total	631	348	377	564	531

1/ Includes 3.7 thousand tons, valued at 106 thousand dollars, imported from Chile and 1.1 thousand tons, valued at 46 thousand dollars, imported from Spain.

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

Commodity	TSUS item
Brewers' and distillers' grains and malt sprouts	184.25

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

In recent years annual U.S. imports of brewers' and distillers' grains and malt sprouts have averaged about $2.1 million, or about 5 percent of domestic consumption; exports are believed to have been negligible.

Description and uses

Brewers' and distillers' grains and malt sprouts are byproducts of the brewing, distilling, and malting process. Brewers' grains, byproducts of malt-liquor production, consist of the residue of malt and other ingredients, such as corn grits and brewers' rice, remaining after fermentation is complete and the liquid is drawn off. Distillers' grains are similar byproducts of the production of distilled liquor and grain alcohol; they consist of the portion of the mash not converted to alcohol during the fermentation process. Although small amounts of brewers' and distillers' grains are used without further processing, most are dried to improve their handling and storage qualities.

Malt sprouts, byproducts of malt production, are developed when moistened grain (usually barley) is germinated. After germination, the grain (then known as malt) is dried, and the dried sprouts are separated by screening.

Brewers' and distillers' grains and malt sprouts are used primarily in mixed feed for livestock. They are bulky feeds, containing 20-28 percent low-quality protein. Distillers' grains have more digestible nutrients and are somewhat more palatable than brewers' grains and malt sprouts, which are high in fiber content.

U.S. tariff treatment

The current column 1 rate of duty applicable to imports (see general headnote 3 in appendix A) is as follows:

TSUS item	Commodity	Rate of duty
184.25	Brewers' and distillers' grains and malt sprouts.	$1.10 per short ton

This rate reflects a concession granted by the United States in the General Agreement on Tariffs and Trade (GATT) that became effective on January 1, 1948. The GATT rate was originally $1.25 per long ton of 2,240 pounds; in the TSUS this rate was converted to $1.10 per short ton of 2,000 pounds. The ad valorem equivalent of the $1.10 rate based on the imports in 1964 was 2.4 percent, which was representative of the level of the duty on the bulk of the imports in that year.

U.S. consumption

During 1960-64, annual U.S. consumption of brewers' and distillers' grains and malt sprouts averaged about 828,000 short tons (table 1)--approximately 10 percent larger than that in the preceding 5-year period. The increased consumption of these feeds resulted primarily from the larger supplies made available as byproducts of the increased domestic production of alcoholic beverages. These feeds compete with other bulky feeds such as beet pulp and wheat bran, and to a limited extent with high-protein feeds such as linseed meal and soybean meal.

U.S. producers and production

In 1963, 223 establishments produced malt liquor, 107 produced distilled liquor, and 43 produced malt. Although byproducts resulted from the operations of all of these establishments, the byproducts supplied only a minor share of the producers' total income. The principal producing States were Kentucky, Wisconsin, and New York.

During the period 1960-64, annual production averaged about 785,000 short tons; distillers' grains accounted for 47 percent of total production, brewers' grains for 33 percent, and malt sprouts for 20 percent. Production, which has been increasing gradually, is likely to continue to increase as the domestic manufacture of alcoholic beverages rises.

U.S. exports and imports

U.S. exports of brewers' grains, distillers' grains, and malt sprouts are not separately reported, but are believed to be negligible.

During 1960-64, annual U.S. imports of these products averaged about 44,000 short tons (table 2)--or about 5 percent of consumption--compared with an annual average of about 49,000 short tons during the preceding 5-year period. The slight decline in imports resulted principally from reduced shipments from Argentina while those from Canada, the principal source of imports, remained fairly constant.

Table 1.--Brewers' and distillers' grains and malt sprouts: U.S. production, imports for consumption, and apparent consumption, 1960-64 1/

Year	Production 2/	Imports		Apparent consumption	Ratio of imports to consumption
		Quantity	Value		
	1,000 short tons	1,000 short tons	1,000 dollars	1,000 short tons	Percent
1960	744	35	1,602	779	5
1961	762	46	2,155	808	6
1962	801	45	2,179	846	5
1963	790	50	2,369	840	6
1964	829	47	2,112	876	5

1/ Data on exports are not available, but exports are believed to be negligible relative to production. Apparent consumption is assumed to be the sum of production and imports.

2/ Includes an estimate for production of malt sprouts, based on the production of malt and shipments of malt sprouts in 1963 as reported in the Census of Manufactures.

Source: Production compiled from official statistics of the U.S. Department of Agriculture, except as noted; imports compiled from official statistics of the U.S. Department of Commerce.

Note.--Value data for production, apparent consumption, and ratio of imports to consumption are not available.

Table 2.--Brewers' and distillers' grains and malt sprouts: U.S. imports for consumption, by principal sources, 1960-64

Country	1960	1961	1962	1963	1964
	Quantity (1,000 short tons)				
Canada	32.8	43.9	42.6	49.6	46.8
Argentina	1.6	2.1	2.0	-	-
Mexico	.2	.1	.1	1/	-
All other	-	-	-	1/	1/
Total	34.6	46.1	44.7	49.6	46.8
	Value (1,000 dollars)				
Canada	1,534	2,072	2,104	2,362	2,111
Argentina	61	78	72	-	-
Mexico	7	5	3	1	-
All other	-	-	-	6	1
Total	1,602	2,155	2,179	2,369	2,112

1/ Less than 50 tons.

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

Commodity	TSUS item
Hay	184.30

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

U.S. imports and exports of hay are small in relation to the large domestic production and consist principally of border trade with Canada and Mexico; such trade fluctuates from year to year depending on feed supplies in the border areas.

Description and uses

Hay consists of the dried tops of grasses or legumes which are used as a livestock roughage feed. Hay is important in crop rotation, and in recent years it has been the principal U.S. crop in terms of acreage harvested. Alfalfa accounts for about 60 percent and clover and timothy together account for about 20 percent of production; the remainder consists of wild hay, grains cut for hay, lespedeza, and miscellaneous tame (cultivated) hay. For use on the farm, hay is stored in the loose, chopped, or baled form. Most of the hay sold off the farms is in bales.

U.S. tariff treatment

The current column 1 rate of duty applicable to imports (see general headnote 3 in appendix A) is as follows:

TSUS item	Commodity	Rate of duty
184.30	Hay	60¢ per short ton

This rate, effective since July 1, 1963, reflects a concession granted by the United States in the General Agreement on Tariffs and Trade (GATT). That concession became operative in two annual stages. Before July 1, 1962, the rate of duty was $1.06 per short ton, reflecting a GATT concession effective June 30, 1958.

The ad valorem equivalent of the 60-cent rate based on imports in 1964--2.4 percent--is a meaningful figure inasmuch as the individual entries varied little in unit value.

U.S. consumption and production

Annual apparent consumption of hay in the United States has been increasing slowly for the last three decades. In 1960-64 the average annual consumption was 118 million tons, compared with an average annual consumption of 114 million tons during 1955-59. In recent years the consumption of hay has averaged about 1.2 tons per animal unit.

The number of producers of hay is not known, but it is extremely large. In 1959, alfalfa hay was harvested on more than 970,000 farms. Hay is produced throughout the United States, but the North Central States have accounted for about 50 percent and the Western States for about 20 percent of national production in recent years. For almost all the producers, the sale of hay is unimportant or only one of several sources of income.

The total production of hay usually fluctuates little from year to year; however, variations in local weather conditions result in fluctuations of production within particular areas of the country. During the period 1960-64, annual U.S. production of hay averaged about 118 million tons (table 1). About 85 percent of the production was used on the farms where it was grown; the remainder was sold. Yearend stocks (principally on farms) averaged about 20 million tons during 1960-64.

U.S. exports and imports

Exports and imports are insignificant, compared with U.S. production. U.S. exports of hay, principally to Canada and Mexico, ranged from 39,000 tons, valued at $1.3 million, in 1960 to 111,000 tons, valued at $2.1 million, in 1962 (table 2). Exports averaged about 50 percent larger during 1960-64 than during 1955-59.

U.S. imports of hay--virtually all from Canada in recent years--principally enter the feed-deficit areas of the Northeast; they fluctuate substantially from year to year depending on local roughage supplies. In the period 1960-64, reported annual imports ranged from 9,000 to 28,000 tons and averaged 16,000 tons. Data on certain low-valued imports are not reported in the official statistics, namely informal entries (valued at not more than $250 each) and formal entries valued under $100 each. These unreported imports may have been four to six times as large as reported annual imports during 1960-64. Imports, however, are insignificant in relation to production in the geographic areas in which they are consumed.

Table 1.--Hay: U.S. production, imports for consumption, exports of domestic merchandise, yearend stocks, and apparent consumption, 1960-64

Year	Production 1/	Imports 2/	Exports	Year-end stocks	Apparent consumption
	Quantity (1,000 short tons)				
1960	118,236	12	39	23,274	112,036
1961	116,819	9	72	18,014	122,016
1962	121,566	11	111	23,108	116,372
1963	116,095	28	49	19,577	119,605
1964	116,332	21	64	16,243	119,623
	Value (1,000 dollars)				
1960	2,565,721	247	1,324	3/	3/
1961	2,406,471	196	2,339	3/	3/
1962	2,625,826	253	2,110	3/	3/
1963	2,855,937	706	1,671	3/	3/
1964	2,733,802	511	2,104	3/	3/

1/ On a crop-year basis, beginning May I of the year shown.
2/ Data do not include certain low-valued imports, namely, informal entries (valued at not more than $250 each) and formal entries valued under $100 each.
3/ Not available.

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

Table 2.--Hay: U.S. exports of domestic merchandise, by principal markets, 1960-64

Country	1960	1961	1962	1963	1964
	Quantity (1,000 short tons)				
Canada	24	45	87	27	34
Mexico	12	25	22	20	28
All other	3	2	2	2	.2
Total	39	72	111	49	64
	Value (1,000 dollars)				
Canada	834	1,498	1,428	972	1,176
Mexico	378	779	621	628	854
All other	112	62	61	71	74
Total	1,324	2,339	2,110	1,671	2,104

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

Commodity	TSUS item
Straw (except flax straw and rice straw)	184.35

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

U.S. imports and exports of straw, confined principally to border trade with Canada, have been small in relation to the large domestic production.

Comment

Straw (except flax straw and rice straw) is a byproduct of the production of such small grains as oats, wheat, rye, and barley. It is used principally as bedding for animals. Small quantities are utilized by the paper industry and for packing. Transportation charges, which constitute a large part of the delivered cost of straw, a bulky commodity even when baled, usually limit its movement to short distances. For a discussion of flax straw and rice straw, see the summary on items 192.60 et al.

The current column 1 rate of duty applicable to imports (see general headnote 3 in appendix A) is as follows:

TSUS item	Commodity	Rate of duty
184.35	Straw (except flax straw and rice straw).	50¢ per short ton

This rate of duty, which reflects a concession granted by the United States in the General Agreement on Tariffs and Trade, became effective on January 1, 1948. The ad valorem equivalent of the duty averaged 2.6 percent for total imports in 1964 and ranged from 2.4 to 3.4 percent for individual months in that year.

Annual U.S. production of grain straw has always been many times larger than imports; official data on production are not available. The bulk of the harvested straw is used on the farm where it is produced. To facilitate handling, most of the straw that is gathered is stored in baled form. Farmers that do not raise livestock leave much of the straw in the field to be plowed under.

The volume of straw imported has fluctuated substantially from year to year (see accompanying table). Virtually all of the imported straw has come from Canada; it has been used to supplement straw produced by farmers that raise livestock in the Northeast. In 1960-64 the imports, which averaged less than 1,000 tons a year, were negligible compared with production in the Northeast. U.S. exports of straw are not reported separately, but they, too, have been negligible.

Straw (except flax straw and rice straw): U.S. imports for consumption, 1960-64 1/

Year	Quantity	Value	Unit value
	Short tons		Per short ton
1960	102	$1,361	$13.34
1961	138	3,312	24.00
1962	118	1,455	12.33
1963	635	11,936	18.80
1964	319	6,085	19.08

1/ Data do not include certain low-valued imports, namely, informal entries (valued at not more than $250 each) and formal entries valued under $100 each.

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

Note.--Data on U.S. production and exports are not available. Production is known to be large relative to imports; exports are small.

Commodity	TSUS item
Vegetable oil cake and meal:	
Linseed	184.50
Other	184.52

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

The United States is a substantial net exporter of oil-cake meal. A major part of the exports consisted of soybean oil-cake meal, of which the United States is the world's leading producer. Vegetable oil cake, however, is a minor article of commerce.

Description and uses

Oil cake is the product remaining when oil is extracted from oil-bearing seeds or other oil-bearing materials; most oil cake is ground into oil-cake meal. The principal sources of oil-cake meal are soybeans, cottonseed, flaxseed (linseed), coconuts (copra), peanuts, and corn germ. There are separate summaries on copra and coconut oil (items 175.09 et al.), cottonseed and cottonseed oil (175.15 and 176.18), flaxseed (linseed) and flaxseed oil (175.18 and 176.26), and soybeans and soybean oil (175.48 et al.).

Oil is separated from oil-bearing seeds and other material by three processes--the hydraulic, or "old", process; the expeller process; and the solvent process. In the hydraulic method, the seed (or other oil-bearing material) is crushed into flakes, steam cooked, and placed in hydraulic presses, which press out the oil. In the expeller process, the seed is cracked, dried, heated in a steam-jacketed container, and put through an expeller or screw press, which removes the oil. In the solvent process, the seed is cracked, heated, and rolled into thin flakes, from which the oil is extracted by a volatile solvent. Oil cakes produced by the various methods differ in protein and oil content. The oil cake (from all processes) is broken into small particles, pressed into pellets, or, most commonly, ground into meal for use in mixed feeds. To prevent wind loss in range or feedlot cattle feeding, some oil cake is used in the form of particles or pellets rather than in the form of meal.

Most oil-cake meal is used in mixed feeds for which the kinds of meal used are largely interchangeable. Oil-cake meals, which are

protein-rich, supplement the rations of livestock and poultry. The quality of the protein varies among the different types of oil-cake meal, however, making them variably suitable as sources of protein for different classes of animals. In general, soybean oil-cake meal has the best quality plant protein and is most suitable for all classes of farm animals. Other oil-cake meals, which may be used as the principal protein supplement for ruminant animals, are usually deficient in one or more of the essential amino acids, necessitating the use of other protein supplements (usually of animal origin) to supply part of the required proteins for monogastric animals. Linseed oil-cake meal is generally considered unsuitable for poultry rations.

Oil cake and oil-cake meal compete with other protein supplement feeds, such as corn gluten meal and gluten feed, hominy feed (in summary on items 184.10 et al.), brewers' and distillers' dried grains (item 184.25), fish meal, meat meal, and tankage (items 184.54-184.65), and urea (item 480.30). Foreign oil cake and oil-cake meal are generally comparable in quality to the domestic products.

U.S. tariff treatment

The current column 1 rates of duty applicable to imports (see general headnote 3 in appendix A) are as follows:

TSUS item	Commodity	Rate of duty
	Vegetable oil cake and meal:	
184.50	Linseed	0.25¢ per lb.
184.52	Other	0.3¢ per lb.

For products of the Philippine Republic (which in recent years have accounted for a significant portion of the annual imports of the oil cake and oil-cake meal provided for in item 184.52), the current rates of duty are (as indicated in part c of general headnote 3 mentioned above) 40 percent of the column 1 rates, e.g., 0.12 cent per pound for item 184.52.

The 0.25-cent-per-pound rate of duty applicable to linseed oil cake and oil-cake meal, which represents a concession granted by the United States in the General Agreement on Tariffs and Trade (GATT), became effective in two annual stages, the second on July 1, 1963. Prior to that concession, the 1930 statutory rate of 0.3 cent per pound was in effect. The column 1 rate of 0.3 cent per pound applicable to oil cake and oil-cake meal other than linseed is the statutory rate provided in the Tariff Act of 1930 and is not a trade-agreement concession rate. Coconut and cottonseed oil cake and oil-cake meal,

however, were the subject of a concession which was granted by the United States in a bilateral agreement with Mexico and in effect from January 30, 1943, to January 1, 1951, the date when the agreement was terminated. Soybean oil cake and meal were also the subject of a concession in the agreement with Mexico; these products, together with peanut oil cake and oil-cake meal, were the subject of concessions negotiated with China under the GATT, effective May 22, 1948. The GATT concessions on soybean and peanut oil cake and oil-cake meal were terminated on January 26, 1952, and December 11, 1950, respectively, as a result of the withdrawal of China from the GATT.

Based on imports in 1964, the ad valorem equivalent of the 0.25-cent duty on linseed oil cake and oil-cake meal was 7.2 percent, which was representative for the bulk of the imports. The ad valorem equivalent of the 0.3-cent duty on cottonseed oil cake and oil-cake meal, which comprised nearly all the imports entered in 1964 under item 184.52 at that rate, was 10.1 percent; that on the negligible imports of soybean cake and oil-cake meal was 6.0 percent, whereas that on the small imports of other oil cake and oil-cake meal averaged 10.4 percent. For the imports from the Philippine Republic--probably all coconut oil-cake meal--which were dutiable at 20 percent of the column 1 rate (0.06 cent per pound), the ad valorem equivalent of the duty was 2.4 percent.

U.S. consumption

Total U.S. consumption of oil cake and oil-cake meal has been increasing slowly for a number of years as a result of increased production of meat and poultry and the feeding of balanced rations for faster growth. Annual U.S. consumption of oil-cake meal 1/ averaged 12.2 million short tons during 1960-64 (table 1). During this period, soybean oil-cake meal accounted for 75 percent of consumption; cottonseed oil-cake meal, for 21 percent; linseed oil-cake meal, for 3 percent; and other oil-cake meals, for 1 percent.

U.S. producers

In 1963 the 101 soybean oil mills, located principally in the Central States, and the 188 cottonseed oil mills, principally in the South and West, all produced oil-cake meal. Among the other 48 mills producing vegetable oil-cake meal, those crushing flaxseed were located principally in the Northeast and North Central States, those processing imported copra were in the West, and those processing peanuts were located in the South. Although oil-cake meal was an important product for all the oil mills, it usually provided slightly less income than the oil.

1/ For convenience, the term oil-cake meal as used hereafter in the text, includes oil cake and oil-cake meal.

U.S. production

U.S. production of vegetable oil-cake meal has increased rapidly in recent years, principally as a result of increased crushing of soybeans. In the period 1960-64, total U.S. production of vegetable oil-cake meal increased from 12.3 million tons to 14.2 million tons (table 2) and averaged about 28 percent larger than that in the preceding 5-year period. Of the total U.S. vegetable oil-cake meal production in 1960-64, oil-cake meal processed from soybeans accounted for 77 percent; that from cottonseed, 19 percent; from flaxseed, 3 percent; and from other oil-bearing vegetable material, 1 percent.

Data on U.S. production of oil-cake meals in 1960-64, by types, are shown in the following tabulation:

Type	Range of annual production, 1960-64 (1,000 tons)	Percentage change in annual averages, 1960-64 over 1955-59
Soybean	9,296-11,031	+37
Cottonseed	2,355- 2,705	+11
Linseed	347- 407	-28
Other (principally copra and peanut)	167- 209	+9

U.S. exports

Total U.S. exports of vegetable oil-cake meal increased from 713,000 tons, valued at $45.4 million, in 1960 to 1.9 million tons, valued at $144.5 million, in 1964 (table 3). The increased exports, which consisted almost entirely of soybean oil-cake meal, reflected a growing demand for meat in many areas of the world. Larger quantities of high-protein feeds, including oil-cake meal, were utilized to feed a larger number of animals and to feed them more balanced rations for faster, more efficient growth. During the period 1960-64, about 11 percent of the soybean oil-cake meal, 11 percent of the linseed oil-cake meal, 2 percent of the cottonseed oil-cake meal, and 4 percent of the other vegetable oil-cake meal produced in the United States was exported.

During 1960-64, annual U.S. exports of soybean oil-cake meal tripled, increasing from 580,000 tons, valued at $36.9 million, to 1.7 million tons, valued at $133.6 million, and averaged about 170 percent larger during this period than during the preceding 5 years. France, Canada, West Germany, the Netherlands, Belgium, Spain, and Denmark were the principal markets for U.S. exports of soybean oil-cake meal (table 4).

During 1960-64, annual exports of all other oil-cake meals, which fluctuated widely (as shown in table 3), were on the average substantially smaller than the exports during the preceding 5-year period. Exports of linseed oil-cake meal, principally to the Netherlands, averaged about 35 percent less in 1960-64 than in 1955-59. The corresponding declines for exports of cottonseed oil-cake meal and "other" oil-cake meal were 25 and 44 percent, respectively. The principal foreign markets for U.S. cottonseed oil-cake meal were Denmark, Ireland, Norway, Belgium, and West Germany, while those for "other" oil-cake meal were the Netherlands, West Germany, and Switzerland.

U.S. imports

Total annual U.S. imports of vegetable oil-cake meal during 1960-64 ranged from 41,000 tons, valued at $2.3 million, in 1960 to 86,000 tons, valued at $3.9 million, in 1961 (table 5), and averaged about 52 percent smaller in that period than in 1955-59. Imports were equivalent to less than 1 percent of production in each of the years 1960-64.

During 1960-63, cottonseed oil-cake meal comprised 72-80 percent of the total annual U.S. imports of vegetable oil-cake meal, but in 1964 its share of the total declined to slightly below 50 percent. In that year the rest of the U.S. imports of vegetable oil-cake meal consisted almost entirely of coconut oil-cake meal. In recent years the bulk of the imports of cottonseed oil-cake meal have entered the Southwest from Mexico, while the imports of coconut oil-cake meal have come from the Philippine Republic into California or Hawaii. The small imports of linseed and soybean oil-cake meal have entered the Northeast from Canada.

World trade

World imports of vegetable oil-cake meal during 1959-63 ranged from 5.5 million tons, valued at $401 million, in 1960 to 7.3 million tons, valued at $604 million, in 1963 (table 6). During this period, West Germany, the United Kingdom, France, Denmark, the Netherlands, Sweden, and Belgium imported about four-fifths of the oil-cake meal entering international trade.

The principal net exporting countries were the United States, India, Argentina, the U.S.S.R., Republic of the Philippines, Senegal, and Mexico (table 7). Exports of oil-cake meal from the United States consisted principally of soybean oil-cake meal; those from India and Senegal, of peanut oil-cake meal; those from Argentina of linseed oil-cake meal; those from the U.S.S.R. and Mexico, of cottonseed oil-cake meal; and those from the Philippines, of coconut oil-cake meal.

Table 1.--Vegetable oil cake and oil-cake meal: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1960-64

Year	Production	Imports	Exports	Apparent consumption
	Quantity (1,000 short tons)			
1960	12,332	41	713	11,660
1961	12,461	86	717	11,830
1962	13,712	76	1,282	12,506
1963	14,260	52	1,603	12,709
1964	14,188	45	1,897	12,336
	Value (1,000 dollars)			
1960	1/	2,257	45,362	1/
1961	1/	3,903	47,471	1/
1962	1/	3,961	90,996	1/
1963	1/	3,173	124,955	1/
1964	1/	2,494	144,510	1/

1/ Not available.

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

Table 2.--Vegetable oil cake and oil-cake meal: U.S. production, by types, 1960-64

(In thousands of short tons)

Year	Soybean	Cottonseed	Linseed	Other	Total
1960	9,296	2,493	347	196	12,332
1961	9,504	2,355	393	209	12,461
1962	10,608	2,579	353	172	13,712
1963	11,031	2,703	359	167	14,260
1964	10,897	2,705	407	179	14,188

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

Table 3.--Vegetable oil cake and oil-cake meal: U.S. exports of domestic merchandise, by types, 1960-64

Year	Soybean	Linseed	Cottonseed	Other	Total
	Quantity (1,000 short tons)				
1960	580	41	78	14	713
1961	677	20	18	2	717
1962	1,168	49	61	4	1,282
1963	1,489	35	71	8	1,603
1964	1,729	68	90	9	1,896
	Value (1,000 dollars)				
1960	36,915	2,662	4,837	948	45,362
1961	45,008	1,215	1,148	100	47,471
1962	82,928	3,655	4,062	351	90,996
1963	116,513	2,817	5,008	617	124,955
1964	133,631	4,336	6,018	525	144,510

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

Table 4.--Soybean oil cake and oil-cake meal: U.S. exports of domestic merchandise, by principal markets, 1960-64

Country	1960	1961	1962	1963	1964
	Quantity (1,000 short tons)				
France	14	40	204	230	267
West Germany	59	57	115	121	236
Canada	185	191	269	240	226
Netherlands	81	88	192	149	198
Spain	38	40	44	213	154
Belgium and Luxembourg	47	57	93	98	154
Yugoslavia	2	1	22	52	121
Denmark	7	49	89	102	98
Italy	40	6	5	154	73
All other	107	148	135	130	202
Total	580	677	1,168	1,489	1,729
	Value (1,000 dollars)				
France	836	2,348	13,685	17,892	21,255
West Germany	3,596	3,254	8,033	9,186	17,319
Canada	11,057	13,228	19,809	19,150	16,913
Netherlands	5,008	5,392	13,323	11,466	14,844
Spain	2,715	3,068	3,164	16,362	12,471
Belgium and Luxembourg	2,853	3,515	6,433	7,530	12,242
Yugoslavia	107	41	1,630	4,079	8,439
Denmark	480	3,061	6,178	7,992	7,594
Italy	2,584	471	489	12,043	5,486
All other	7,679	10,630	10,184	10,813	17,068
Total	36,915	45,008	82,928	116,513	133,631

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

Table 5.--Vegetable oil cake and oil-cake meal: U.S. imports for consumption, by types, 1960-64

Year	Cottonseed	Linseed	Soybean	Other	Total
	Quantity (1,000 short tons)				
1960	31.7	1.2	0.1	8.3	41.3
1961	61.5	3.1	1/	21.1	85.7
1962	58.7	1.4	-	16.2	76.3
1963	41.9	.5	-	9.8	52.2
1964	22.0	.9	1/	22.3	45.2
	Value (1,000 dollars)				
1960	1,701	103	4	449	2,257
1961	2,703	229	5	966	3,903
1962	3,035	109	-	817	3,961
1963	2,554	42	-	577	3,173
1964	1,303	64	2/	1,127	2,494

1/ Less than 50 tons.
2/ Less than $500.

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

Table 6.--Imports of vegetable oil cake and oil-cake meal, by principal importing countries, 1959-63

Country	1959	1960	1961	1962	1963
	Quantity (1,000 short tons)				
West Germany	950	951	1,023	1,394	1,422
United Kingdom	1,376	1,365	1,300	1,509	1,232
France	418	359	464	833	867
Denmark	811	789	779	780	828
Netherlands	495	443	530	617	614
Sweden	173	274	245	266	261
Belgium	242	215	228	326	285
Spain	4	25	75	76	218
Canada	250	194	204	276	258
Italy	94	101	56	46	170
Norway	117	102	108	152	161
All other	662	664	825	867	959
Total	5,592	5,482	5,837	7,142	7,275
	Value (1,000 dollars)				
West Germany	69,887	69,432	68,973	101,324	113,406
United Kingdom	105,906	104,158	93,269	118,838	107,867
France	30,605	26,023	32,726	64,679	71,542
Denmark	57,732	57,279	53,264	57,909	67,838
Netherlands	35,948	30,280	33,339	44,745	47,698
Sweden	12,797	20,883	17,377	20,800	24,762
Belgium	17,228	14,768	14,383	23,372	21,975
Spain	339	2,260	6,247	6,464	19,488
Canada	14,660	10,650	13,054	18,882	19,210
Italy	6,795	7,909	4,226	3,724	15,079
Norway	9,254	8,902	7,986	12,479	13,950
All other	44,875	48,070	55,543	65,128	81,042
Total	406,026	400,613	400,387	538,344	603,857

Source: Compiled from statistics of the Food and Agriculture Organization of the United Nations, Trade Yearbook, 1964, vol. 18.

Table 7.--Exports of vegetable oil cake and oil-cake meal, by principal exporting countries, 1959-63

Country	1959	1960	1961	1962	1963
	Quantity (1,000 short tons)				
United States	814	713	717	1,282	1,603
India	581	508	532	851	1,005
Argentina	729	856	888	1,122	977
Canada	211	207	150	231	255
West Germany	244	271	320	247	266
Netherlands	239	236	257	278	209
U.S.S.R.	634	547	426	384	213
Brazil	5	9	46	178	263
Turkey	149	150	158	179	173
Denmark	101	109	102	142	140
Republic of the Philippines	93	87	92	155	186
Senegal	169	180	199	181	160
Mexico	200	65	113	106	82
All other	1,493	1,394	1,717	1,759	1,371
Total	5,662	5,332	5,717	7,085	6,903
	Value (1,000 dollars)				
United States	53,050	45,362	47,471	90,996	124,955
India	40,815	33,832	32,070	57,199	72,145
Argentina	46,003	52,375	49,528	65,197	68,858
Canada	15,956	14,969	11,236	17,823	21,460
West Germany	16,940	18,772	23,004	18,856	21,215
Netherlands	17,532	17,435	18,595	21,297	21,118
U.S.S.R.	41,288	37,115	25,467	25,673	16,112
Brazil	203	392	1,885	9,511	14,883
Turkey	8,342	8,878	8,748	10,619	11,761
Denmark	7,060	7,790	7,151	10,748	11,238
Republic of the Philippines	3,965	3,670	3,910	8,773	11,143
Senegal	8,174	8,596	9,519	8,632	7,662
Mexico	5,781	2,582	4,129	3,910	4,295
All other	89,071	79,149	90,205	98,719	91,797
Total	354,180	330,778	330,917	447,953	498,642

Source: Compiled from statistics of the Food and Agriculture Organization of the United Nations, Trade Yearbook, 1964, vol. 18.

Commodity	TSUS item
Feeds of fish and whale origin:	
Cod-liver solubles	184.54
Dead fish and whales; fish and whale scrap, meal, and solubles; and homogenized condensed fish and whales	184.55 (pt.)
Other feeds of animal origin:	
Tankage (including meat meal)	184.55 (pt.)
Raw meat	184.60, -.61
Prepared or preserved meat	184.65

Note.--For the statutory description, see the Tariff Schedules of the United States (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

Although the United States produces large quantities of animal-protein feeds, it is also a net importer of these feeds. For tankage and meat meal, by far the principal animal feed included here, imports supplied an insignificant portion of U.S. consumption in 1964; for fish meal and solubles, imports provided about 60 percent of consumption.

Description and uses

The principal products included in this summary are tankage, fish meal, condensed fish solubles, raw horsemeat, and processed meat not fit for human consumption. These feeds are rich in protein and are generally mixed with other ingredients, usually grain products. The products here included are of grades or qualities used as feed for animals or as ingredients in such feed. The named products of grades used chiefly for fertilizer or chiefly as an ingredient in the manufacture of fertilizer are included in the summary on item 480.80. Mixed feeds (including pet foods containing, by weight, 6 percent or more of grain or grain products) are in the summary on items 184.10 et al.

Feeds of fish and whale origin.--Cod-liver solubles (item 184.54) and cod-liver oil cake and oil-cake meal (included in item 184.55) are produced as byproducts of the production of cod-liver oil (see summary on item 177.02). There is no known domestic production of these byproducts, and imports are small.

For use as feed, fish and whales are generally converted to meal and condensed solubles. These products are made not only from whole fish or whales but also from the scrap of fish-filleting and canning plants. The raw material is cooked, pressed to remove oil and water (including the solubles), dried, and ground, forming meal. Although the amount of protein contained in fish meal varies, depending on the type of fish used, the average protein content is about 60 percent. Most of the fish meal produced in the United States is made from menhaden, whereas the bulk of the imported fish meal is made from anchovy. Fish meal is usually more expensive than tankage; its protein tends to be a more efficient supplement to grains (especially for poultry) and it is rich in certain vitamins.

Condensed fish solubles are obtained by evaporating to a semisolid state the aqueous solution which has been pressed from cooked fish in the manufacture of meal and oil. The fish oil is marketed separately (see the summary on items 177.12-177.26).

Homogenized condensed fish (or whales) is a partially dehydrated, semiliquid product made from fish (or whales) or from cuttings and trimmings of filleting or canning plants. Only small quantities of homogenized condensed fish have been produced in the United States; none was produced in 1964. Imports of homogenized condensed fish have been small.

Some raw fish, including fish scraps from processing plants, is used for feed for mink and certain other animals. Canned fish is used as cat food; however, most canned fish for use as cat food contains 6 percent or more of grain products (see summary on items 184.10 et al.).

Other feeds of animal origin.--Tankage for animal feed usually consists of the residue obtained from fat-rendering plants. The raw material, primarily meat scraps, fat trimmings, and meat offal from meat-packing plants and slaughterhouses, is cooked, pressed to remove the fat, dried, and ground. If cooked in open vessels (dry-rendered method), the product is usually referred to in the trade as meat meal or meat scrap; if cooked in closed tanks by steam pressure (wet-rendered method), it is referred to as tankage or digester tankage. These products contain about 50 to 60 percent protein and are used principally to add high-quality protein to the rations of poultry and swine.

Most horsemeat is fed either raw or in processed form to pets and mink. Processed meat not fit for human consumption consists primarily of canned horsemeat or a combination of canned horsemeat and meat meal and is used as pet food.

U.S. tariff treatment

The current column 1 rates of duty applicable to imports (see general headnote 3 in appendix A) are as follows:

TSUS item	Commodity	Rate of duty
184.54	Cod-liver solubles----------	10% ad val.
184.55	Dead fish and whales; fish and whale scrap, meal, and solubles; homogenized condensed fish and whales; tankage (including meat meal).	Free
184.60	Raw horsemeat (except in immediate containers weighing with their contents less than 10 lbs. each).	Free
184.61	Other raw meat----------	5% ad val.
184.65	Prepared or preserved meat----------	8% ad val.

These rates of duty reflect concessions granted by the United States in the General Agreement on Tariffs and Trade (GATT) for all items except item 184.60, the duty-free status of which was established pursuant to Public Law 87-110, approved July 26, 1961. The concession on the products in item 184.54 has been in effect since October 7, 1951, and those on the products in 184.55 (with the exception of tankage) and 184.61, since January 1, 1948. The GATT concession on tankage has been in effect since December 16, 1953; a similar concession had also been granted in the bilateral agreement with Argentina, effective November 15, 1941. The 8-percent rate of duty applicable to item 184.65 reflects a concession on dog food (the major product included in this item) which became effective in two annual stages, the second on July 1, 1963. Previous to that concession, the rate of duty on dog food had been 10 percent ad valorem. The other products under item 184.65 had been dutiable at 10 percent ad valorem before August 31, 1963, the effective date of the TSUS.

U.S. consumption

U.S. consumption of feeds of animal and fish origin has increased principally because of rising demand for animal protein in the human diet, resulting in increased requirements for feeds for poultry and swine. The bulk of such feeds consumed are of animal origin. Though animal-protein and fish-protein feeds are consumed throughout the country, consumption is concentrated in the Midwestern States, where swine and turkeys are produced, and in the Southeastern States, where broilers are raised. Consumption of all-meat and all-fish pet foods has increased rapidly in recent years as the pet population increased, particularly in urban areas, where the feeding of

prepared pet foods gained acceptance most rapidly. The rise in commercial production of mink has also contributed to the increase in consumption of the animal feeds included here.

U.S. producers and production

In 1963, 610 establishments produced fish meal and solubles, homogenized condensed fish, or tankage, and their coproducts. The number of plants producing other articles included in this summary, i.e., canned fish for animal food, horsemeat, all-meat pet foods, and raw meat other than horsemeat, is not known but is probably smaller than 100. The manufacture of animal feed is the principal source of income for many of these firms; however, grease, tallow, fats, or oils are also important for firms producing fish meal or tankage.

Average annual U.S. production, by type, for 1960-64 and the percentage change from 1955-59 are shown in the following tabulation:

Item	Average annual production in 1960-64 (1,000 short tons)	Percent of change from 1955-59 average
Tankage:		
Dry-rendered (meat meal)--	1,433	+24
Other----------	362	+26
Fish meal and solubles------	334	-1
Raw horsemeat----------	19	-64

Annual data on the U.S. production of the other items covered by this summary are not available; however, 150,000 tons of fish (fresh weight) was fed to mink or processed into pet foods in 1964. In 1963, the latest year for which data are available, 80,000 tons of all-meat pet foods was produced.

U.S. exports and imports

Annual exports of horsemeat (mostly canned) fluctuated from year to year, ranging from 840 tons to 333 tons during 1960-64 (table 1). Annual exports of other feeds of animal or fish origin included in this summary are not separately reported but are believed to have been considerably smaller than the combined imports of similar articles and very small relative to domestic production.

Imports, consisting principally of fish meal and solubles, have been increasing steadily in recent years to supply the demand created by larger production of swine and poultry. Imports of fish meal and solubles quadrupled in volume between 1960 and 1964 (table 2),

increasing from 111,000 tons, valued at $9.5 million, to 444,000 tons, valued at $44.5 million, and averaging about 161 percent larger in 1960-64 than in 1955-59. The rising imports of fish meal came principally from Peru, where production began to expand in the late 1950's, but Canada also has been a major source (table 3). In 1960-64 the value of annual U.S. imports of fish for use as animal feed (including fish packed in airtight containers) fluctuated from year to year and averaged $4.0 million, or about double the corresponding figure in 1955-59. Japan and Canada were the principal foreign suppliers of such fish. Imports from Japan consisted mostly of canned fish and whale meat, while imports from Canada were raw fish. Imports of cod-liver solubles were not separately reported before September 1963; in 1964, 278 tons, valued at $27,000, was imported, all from Canada.

Imports of feeds of animal origin consisted principally of raw horsemeat, prepared pet foods, and tankage. Imports of raw horsemeat, which were not separately reported before August 1961, averaged about 23,000 tons a year during 1962-64 (table 1). That average includes imports reported under item 184.60 and also those reported as edible horsemeat under item 106.65, all of which was probably used for animal feed. Imports of horsemeat have increased in recent years as domestic production declined; Argentina and Canada have been the principal sources.

Annual imports of raw meat entered under item 184.61 in 1960-64 ranged irregularly from 1,207 tons, valued at $295,000, to 66 tons, valued at $62,000. Canada, Argentina, and Mexico were the principal sources of such imports.

Annual imports of prepared or preserved meat (item 184.65), which consisted principally of canned horsemeat for use as pet food, ranged from 9,160 tons, valued at $2.0 million, to 2,694 tons, valued at $0.8 million, during the period 1960-64 (table 4), and averaged about 43 percent larger than in 1955-59. Canada was the principal source of imports of such prepared meat. Imports of tankage (in item 184.55) declined irregularly during 1960-64 from 6,722 tons, valued at $495,000, in 1960 to 1,952 tons, valued at $186,000, in 1964 (table 5) and averaged about 62 percent smaller in that period than in 1955-59. Canada, Argentina, and Uruguay were the principal sources of imported tankage.

Fish meal is the principal item covered by this summary that is traded internationally. Peru has been by far the world's largest exporter of fish meal; other important exporting countries have been the Republic of South Africa, Norway, Chile, and Iceland (table 6). The United States, West Germany, the United Kingdom, and the Netherlands have been the principal importers of fish meal (table 7).

May 1966
1:6

Table 1.--Horsemeat, raw, including chilled and frozen: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1960-64

(Quantity in short tons; value in thousands of dollars)

Year	Production 1/	Imports	Exports 2/	Apparent consumption	Ratio (percent) of imports to consumption
	Quantity				
1960	21,600	3/	481	3/	3/
1961	22,000	4/ 6,536	770	3/	3/
1962	20,000	23,184	840	42,344	55
1963	16,400	5/ 24,478	416	36,972	57
1964	15,400	5/ 21,638	333	29,757	49
	Value				
1960	14,018	3/	312	3/	3/
1961	13,332	4/ 1,345	467	3/	3/
1962	14,600	4,781	613	18,768	26
1963	12,185	5/ 4,870	309	16,042	26
1964	9,764	5/ 4,287	211	12,162	22

1/ Horsemeat produced under Federal inspection. Quantity estimated on the basis of 800 pounds per animal slaughtered; value estimated on the basis of the unit value of exports.

2/ Includes exports of canned horsemeat for animal feed and horsemeat for human consumption.

3/ Not available.

4/ Data for the period August-December only.

5/ Includes imports reported as fit for human consumption under item 106.65, which are believed to have been used for animal feed; does not include imports of horsemeat packed in immediate containers weighing with their contents less than 10 pounds each (in 184.61), which are believed negligible.

Source: Production estimated from official statistics of the U.S. Department of Agriculture, as noted; imports and exports compiled from official statistics of the U.S. Department of Commerce.

Note.--Annual imports of other raw meat for animal feeding (in TSUS item 184.61) ranged from 1,207 tons, valued at 295 thousand dollars, to 66 tons, valued at 62 thousand dollars, during 1960-64. Data on production and exports of such meat are not available but are believed to have been small relative to those of horsemeat.

May 1966
1:6

Table 2.--Fish meal and solubles: U.S. production and imports for consumption, 1960-64

(Quantity in short tons; value in thousands of dollars)

Year	Production 1/	Imports	Ratio (percent) of imports to production
	Quantity		
1960	339,601	111,427	33
1961	367,392	208,268	57
1962	374,583	245,165	66
1963	307,153	372,858	121
1964	281,950	443,571	157
	Value		
1960	29,303	9,466	2/
1961	37,408	16,136	2/
1962	42,208	23,878	2/
1963	36,988	36,347	2/
1964	33,701	44,519	2/

1/ Estimated; weight of solubles converted to dry weight on the assumption that the solubles contained 50 percent water.
2/ Not meaningful.

Source: Production computed from official statistics of the U.S. Department of Interior; imports compiled from official statistics of the U.S. Department of Commerce.

Note.--Exports of these products, which are not reported separately, are believed small relative to domestic production. Usable data on production and imports of canned fish for pet food and fish fed to mink and other animals are fragmentary (see text).

Table 3.--Fish meal and solubles: U.S. imports for consumption, by principal sources, 1960-64

Country	1960	1961	1962	1963	1964
	Quantity (short tons)				
Peru	49,782	135,886	174,328	277,683	349,126
Canada	31,419	39,084	43,433	53,057	56,324
Republic of South Africa 1/	6,493	14,042	11,801	12,807	19,568
Chile	17,698	11,965	8,371	23,031	12,942
All other	6,035	7,291	7,232	6,280	5,611
Total	111,427	208,268	245,165	372,858	443,571
	Value (1,000 dollars)				
Peru	3,899	10,170	16,144	25,520	33,424
Canada	3,307	3,602	5,188	6,628	7,396
Republic of South Africa 1/	604	1,030	1,059	1,191	1,687
Chile	1,202	889	874	2,497	1,395
All other	454	445	613	511	617
Total	9,466	16,136	23,878	36,347	44,519

1/ Name changed from the Union of South Africa on May 31, 1961.

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

Table 4.--Prepared or preserved meat for use as animal feed: 1/ U.S. production and imports for consumption, 1960-64

Year	Production	Imports
	Quantity (short tons)	
1960	2/	9,160
1961	2/	6,360
1962	2/	3,117
1963	79,610	2,694
1964	2/	3,792
	Value (1,000 dollars)	
1960	2/	1,993
1961	2/	1,427
1962	2/	661
1963	22,524	781
1964	2/	1,856

1/ Consists mainly of canned meats not fit for human consumption that are used for pet foods.
2/ Not available.

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

Note.--Exports are not separately reported but are believed to be small relative to imports.

Table 5.--Tankage (including meat meal): U.S. production, imports for consumption, and apparent consumption, 1960-64

Year	Production			Imports	Apparent consumption
	Meat meal	Other tankage	Total		
	Quantity (short tons)				
1960	1,325,600	341,100	1,666,700	6,722	1,673,422
1961	1,318,100	382,800	1,700,900	2,921	1,703,821
1962	1,389,600	392,800	1,782,400	3,129	1,785,529
1963	1,495,400	350,300	1,845,700	4,724	1,850,424
1964	1,635,700	344,100	1,979,800	1,952	1,981,752
	Value (1,000 dollars)				
1960	102,164	26,422	128,586	495	129,081
1961	124,086	36,971	161,057	327	161,384
1962	135,611	38,903	174,514	389	174,903
1963	151,260	36,575	187,835	465	188,300
1964	150,452	33,333	183,785	186	183,971

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

Note.--Exports are not separately reported but are believed to be small relative to domestic production.

Table 6.--Fish meal and solubles: Exports from specified countries, 1960-64

(In short tons)

Country	1960	1961	1962	1963	1964
Peru	571,300	838,400	1,175,000	1,278,400	1,562,000
Republic of South Africa 1/	139,700	186,700	228,700	235,800	276,800
Norway	112,400	141,600	65,900	113,900	201,200
Chile	26,600	45,800	80,300	95,700	162,100
Iceland	60,500	78,000	76,800	114,800	138,800
Denmark	35,400	47,100	68,000	74,500	77,100
Canada	35,500	40,600	48,200	56,700	63,400
Angola	49,700	55,500	35,900	30,800	60,000
Morocco	15,300	20,900	17,600	22,000	24,100
Total	1,046,400	1,454,600	1,796,400	2,022,600	2,565,500

1/ Name changed from Union of South Africa on May 31, 1961.

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

Table 7.--Fish meal: Imports into specified countries, 1960-64

(In short tons)

Country	1960	1961	1962	1963	1964
United States	111,400	208,300	245,200	372,900	443,600
West Germany	212,600	295,300	365,800	332,400	438,900
United Kingdom	186,300	257,600	305,000	310,500	405,400
Netherlands	150,300	178,900	190,200	193,700	200,700
France	35,100	66,400	90,900	84,300	115,600
Japan	21,400	25,700	42,400	92,900	112,700
Italy	33,700	34,300	53,600	67,500	100,800
Belgium	54,800	44,000	62,800	56,600	1/ 70,800
Poland	7,000	11,800	17,300	31,700	2/ 50,000
Spain	10,200	14,600	41,500	84,100	44,600
Sweden	19,300	24,500	26,100	33,000	43,600
Switzerland	30,500	27,400	31,400	32,000	42,300
Austria	24,000	26,500	30,900	33,400	40,100
Total	896,600	1,215,300	1,503,100	1,725,000	2,109,100

1/ Data for January-November only.
2/ Estimated.

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

May 1966
1:6

APPENDIXES

Tariff Schedules of the United States: General Headnotes and Rules of Interpretation, and Excerpts Relating to the Items Included in This Volume

GENERAL HEADNOTES AND RULES OF INTERPRETATION

1. Tariff Treatment of Imported Articles. All articles imported into the customs territory of the United States from outside thereof are subject to duty or exempt therefrom as prescribed in general headnote 3.

2. Customs Territory of the United States. The term "customs territory of the United States", as used in the schedules, includes only the States, the District of Columbia, and Puerto Rico.

3. Rates of Duty. The rates of duty in the "Rates of Duty" columns numbered 1 and 2 of the schedules apply to articles imported into the customs territory of the United States as hereinafter provided in this headnote:

(a) Products of Insular Possessions.

(i) Articles imported from insular possessions of the United States which are outside the customs territory of the United States are subject to the rates of duty set forth in column numbered 1 of the schedules, except that all articles the growth or product of any such possession, or manufactured or produced in any such possession from materials the growth, product, or manufacture of any such possession or of the customs territory of the United States, or of both, which do not contain foreign materials to the value of more than 50 percent of their total value, coming to the customs territory of the United States directly from any such possession, and all articles previously imported into the customs territory of the United States with payment of all applicable duties and taxes imposed upon or by reason of importation which were shipped from the United States, without remission, refund, or drawback of such duties or taxes, directly to the possession from which they are being returned by direct shipment, are exempt from duty.

(ii) in determining whether an article produced or manufactured in any such insular possession contains foreign materials to the value of more than 50 percent, no material shall be considered foreign which, at the time such article is entered, may be imported into the customs territory from a foreign country, other than Cuba or the Philippine Republic, and entered free of duty.

(b) Products of Cuba. Products of Cuba imported into the customs territory of the United States, whether imported directly or indirectly, are subject to the rates of duty set forth in column numbered 1 of the schedules. Preferential rates of duty for such products apply only as shown in the said column 1. 1/

(c) Products of the Philippine Republic.

(i) Products of the Philippine Republic imported into the customs territory of the United States, whether imported directly or indirectly, are subject to the rates of duty which are set forth in column numbered 1 of the schedules or to fractional parts of the rates in the said column 1, as hereinafter prescribed in subdivisions (c)(ii) and (c)(iii) of this headnote.

(ii) Except as otherwise prescribed in the schedules, a Philippine article, as defined in subdivision (c)(iv) of this headnote, imported into the customs territory of the United States and entered on or before July 3, 1974, is subject to that rate which results from the application of the following percentages to the most favorable rate of duty (i.e., including a preferential rate prescribed for any product of Cuba) set forth in column numbered 1 of the schedules:

(A) 20 percent, during calendar years 1963 through 1964,
(B) 40 percent, during calendar years 1965 through 1967,
(C) 60 percent, during calendar years 1968 through 1970,
(D) 80 percent, during calendar years 1971 through 1973,
(E) 100 percent, during the period from January 1, 1974, through July 3, 1974.

1/ By virtue of section 401 of the Tariff Classification Act of 1962, the application to products of Cuba of either a preferential or other reduced rate of duty in column 1 is suspended. See general headnote 3(e), infra. The provisions for preferential Cuban rates continue to be reflected in the schedules because, under section 401, the rates therefor in column 1 still form the bases for determining the rates of duty applicable to certain products, including "Philippine articles".

(iii) Except as otherwise prescribed in the schedules, products of the Philippine Republic, other than Philippine articles, are subject to the rates of duty (except any preferential rates prescribed for products of Cuba) set forth in column numbered 1 of the schedules.

(iv) The term "Philippine article", as used in the schedules, means an article which is the product of the Philippines, but does not include any article produced with the use of materials imported into the Philippines which are products of any foreign country (except materials produced within the customs territory of the United States) if the aggregate value of such imported materials when landed at the Philippine port of entry, exclusive of any landing cost and Philippine duty, was more than 20 percent of the appraised customs value of the article imported into the customs territory of the United States.

(d) Products of Canada.

(i) Products of Canada imported into the customs territory of the United States, whether imported directly or indirectly, are subject to the rates of duty set forth in column numbered 1 of the schedules. The rates of duty for a Canadian article, as defined in subdivision (d)(ii) of this headnote, apply only as shown in the said column numbered 1.

(ii) The term "Canadian article", as used in the schedules, means an article which is the product of Canada, but does not include any article produced with the use of materials imported into Canada which are products of any foreign country (except materials produced within the customs territory of the United States), if the aggregate value of such imported materials when landed at the Canadian port of entry (that is, the actual purchase price, or if not purchased, the export value, of such materials, plus, if not included therein, the cost of transporting such materials to Canada but exclusive of any landing cost and Canadian duty) was --

(A) with regard to any motor vehicle or automobile truck tractor entered on or before December 31, 1967, more than 60 percent of the appraised value of the article imported into the customs territory of the United States; and

(B) with regard to any other article (including any motor vehicle or automobile truck tractor entered after December 31, 1967), more than 50 percent of the appraised value of the article imported into the customs territory of the United States.

(e) Products of Communist Countries. Notwithstanding any of the foregoing provisions of this headnote, the rates of duty shown in column numbered 2 shall apply to products, whether imported directly or indirectly, of the following countries and areas pursuant to section 401 of the Tariff Classification Act of 1962, to section 231 or 257(e)(2) of the Trade Expansion Act of 1962, or to action taken by the President thereunder:

Albania
Bulgaria
China (any part of which may be under Communist domination or control)
Cuba 1/
Czechoslovakia
Estonia
Germany (the Soviet zone and the Soviet sector of Berlin)
Hungary
Indochina (any part of Cambodia, Laos, or Vietnam which may be under Communist domination or control)
Korea (any part of which may be under Communist domination or control)
Kurile Islands
Latvia
Lithuania
Outer Mongolia
Rumania

1/ In Proclamation 3447, dated February 3, 1962, the President, acting under authority of section 620(a) of the Foreign Assistance Act of 1961 (75 Stat. 445), as amended, prohibited the importation into the United States of all goods of Cuban origin and all goods imported from or through Cuba, subject to such exceptions as the Secretary of the Treasury determines to be consistent with the effective operation of the embargo.

Southern Sakhalin
Tanna Tuva
Tibet
Union of Soviet Socialist Republics and the area in East Prussia under the provisional administration of the Union of Soviet Socialist Republics.

(f) Products of All Other Countries. Products of all countries not previously mentioned in this headnote imported into the customs territory of the United States are subject to the rates of duty set forth in column numbered 1 of the schedules.

(g) Effective Date; Exceptions - Staged Rates of Duty. Except as specified below or as may be specified elsewhere, pursuant to section 501(a) of the Tariff Classification Act of 1962 (P.L. 87-456, approved May 24, 1962), the rates of duty in columns numbered 1 and 2 become effective with respect to articles entered on or after the 10th day following the date of the President's proclamation provided for in section 102 of the said Act. If, in column numbered 1, any rate of duty or part thereof is set forth in parenthesis, the effective date shall be governed as follows:

(i) If the rate in column numbered 1 has only one part (i.e., 8¢ (10¢) per lb.), the parenthetical rate (viz., 10¢ per lb.) shall be effective as to articles entered before July 1, 1964, and the other rate (viz., 8¢ per lb.) shall be effective as to articles entered on or after July 1, 1964.

(ii) If the rate in column numbered 1 has two or more parts (i.e., 5¢ per lb. + 50% ad val.) and has a parenthetical rate for either or both parts, each part of the rate shall be governed as if it were a one-part rate. For example, if a rate is expressed as "4¢ (4.5¢) per lb. + 8% (9%) ad val.", the rate applicable to articles entered before July 1, 1964, would be "4.5¢ per lb. + 9% ad val."; the rate applicable to articles entered on or after July 1, 1964, would be "4¢ per lb. + 8% ad val.".

(iii) If the rate in column numbered 1 is marked with an asterisk (*), the foregoing provisions of (i) and (ii) shall apply except that "January 1, 1964" shall be substituted for "July 1, 1964", wherever this latter date appears.

4. Modification or Amendment of Rates of Duty. Except as otherwise provided in the Appendix to the Tariff Schedules --

(a) a statutory rate of duty supersedes and terminates the existing rates of duty in both column numbered 1 and column numbered 2 unless otherwise specified in the amending statute;

(b) a rate of duty proclaimed pursuant to a concession granted in a trade agreement shall be reflected in column numbered 1 and, if higher than the then existing rate in column numbered 2, also in the latter column, and shall supersede but not terminate the then existing rate (or rates) in such column (or columns);

(c) a rate of duty proclaimed pursuant to section 336 of the Tariff Act of 1930 shall be reflected in both column numbered 1 and column numbered 2 and shall supersede but not terminate the then existing rates in such columns; and

(d) whenever a proclaimed rate is terminated or suspended, the rate shall revert, unless otherwise provided, to the next intervening proclaimed rate previously superseded but not terminated or, if none, to the statutory rate.

5. Intangibles. For the purposes of headnote 1 --

(a) corpses, together with their coffins and accompanying flowers,
(b) currency (metal or paper) in current circulation in any country and imported for monetary purposes,
(c) electricity,
(d) securities and similar evidences of value, and
(e) vessels which are not "yachts or pleasure boats" within the purview of subpart D, part 6, of schedule 6,

are not articles subject to the provisions of these schedules.

6. Containers or Holders for Imported Merchandise. For the purposes of the tariff schedules, containers or holders are subject to tariff treatment as follows:

(a) Imported Empty: Containers or holders if imported empty are subject to tariff treatment as imported articles and as such are subject to duty unless they are within the purview of a provision which specifically exempts them from duty.

(b) Not Imported Empty: Containers or holders if imported containing or holding articles are subject to tariff treatment as follows:

(i) The usual or ordinary types of shipping or transportation containers or holders, if not designed for, or capable of, reuse, and containers of usual types ordinarily sold at retail with their contents, are not subject to treatment as imported articles. Their cost, however, is, under section 402 or section 402a of the tariff act, a part of the value of their contents and if their contents are subject to an ad valorem rate of duty such containers or holders are, in effect, dutiable at the same rate as their contents, except that their cost is deductible from dutiable value upon submission of satisfactory proof that they are products of the United States which are being returned without having been advanced in value or improved in condition by any means while abroad.

(ii) The usual or ordinary types of shipping or transportation containers or holders, if designed for, or capable of, reuse, are subject to treatment as imported articles separate and distinct from their contents. Such holders or containers are not part of the dutiable value of their contents and are separately subject to duty upon each and every importation into the customs territory of the United States unless within the scope of a provision specifically exempting them from duty.

(iii) In the absence of context which requires otherwise, all other containers or holders are subject to the same treatment as specified in (ii) above for usual or ordinary types of shipping or transportation containers or holders designed for, or capable of, reuse.

7. Commingling of Articles. (a) Whenever articles subject to different rates of duty are so packed together or mingled that the quantity or value of each class of articles cannot be readily ascertained by customs officers (without physical segregation of the shipment or the contents of any entire package thereof), by one or more of the following means:

(i) sampling,

(ii) verification of packing lists or other documents filed at the time of entry, or

(iii) evidence showing performance of commercial settlement tests generally accepted in the trade and filed in such time and manner as may be prescribed by regulations of the Secretary of the Treasury,

the commingled articles shall be subject to the highest rate of duty applicable to any part thereof unless the consignee or his agent segregates the articles pursuant to subdivision (b) hereof.

(b) Every segregation of articles made pursuant to this headnote shall be accomplished by the consignee or his agent at the risk and expense of the consignee within 30 days (unless the Secretary authorizes in writing a longer time) after the date of personal delivery or mailing, by such employee as the Secretary of the Treasury shall designate, of written notice to the consignee that the articles are commingled and that the quantity or value of each class of articles cannot be readily ascertained by customs officers. Every such segregation shall be accomplished under customs supervision, and the compensation and expenses of the supervising customs officers shall be reimbursed to the Government by the consignee under such regulations as the Secretary of the Treasury may prescribe.

(c) The foregoing provisions of this headnote do not apply with respect to any part of a shipment if the consignee or his agent furnishes, in such time and manner as may be prescribed by regulations of the Secretary of the Treasury, satisfactory proof --

(i) that such part (A) is commercially negligible, (B) is not capable of segregation without excessive cost, and (C) will not be segregated prior to its use in a manufacturing process or otherwise, and

(ii) that the commingling was not intended to avoid the payment of lawful duties.

Any article with respect to which such proof is furnished shall be considered for all customs purposes as a part of the article, subject to the next lower rate of duty, with which it is commingled.

(d) The foregoing provisions of this headnote do not apply with respect to any shipment if the consignee or his agent shall furnish, in such time and manner as may be prescribed by regulations of the Secretary of the Treasury, satisfactory proof --

(i) that the value of the commingled articles is less than the aggregate value would be if the shipment were segregated;

(ii) that the shipment is not capable of segregation without excessive cost and will not be segregated prior to its use in a manufacturing process or otherwise; and

(iii) that the commingling was not intended to avoid the payment of lawful duties.

Any merchandise with respect to which such proof is furnished shall be considered for all customs purposes to be dutiable at the rate applicable to the material present in greater quantity than any other material.

(e) The provisions of this headnote shall apply only in cases where the schedules do not expressly provide a particular tariff treatment for commingled articles.

8. Abbreviations. In the schedules the following symbols and abbreviations are used with the meanings respectively indicated below:

$	-	dollars
¢	-	cents
%	-	percent
+	-	plus
ad val.	-	ad valorem
bu.	-	bushel
cu.	-	cubic
doz.	-	dozen
ft.	-	feet
gal.	-	gallon
in.	-	inches
lb.	-	pounds
oz.	-	ounces
sq.	-	square
wt.	-	weight
yd.	-	yard
pcs.	-	pieces
prs.	-	pairs
lin.	-	linear
I.R.C.	-	Internal Revenue Code

9. Definitions. For the purposes of the schedules, unless the context otherwise requires --

(a) the term "entered" means entered, or withdrawn from warehouse, for consumption in the customs territory of the United States;

(b) the term "entered for consumption" does not include withdrawals from warehouse for consumption;

(c) the term "withdrawn for consumption" means withdrawn from warehouse for consumption and does not include articles entered for consumption;

(d) the term "rate of duty" includes a free rate of duty; rates of duty proclaimed by the President shall be referred to as "proclaimed" rates of duty; rates of duty enacted by the Congress shall be referred to as "statutory" rates of duty; and the rates of duty in column numbered 2 at the time the schedules become effective shall be referred to as "original statutory" rates of duty;

(e) the term "ton" means 2,240 pounds, and the term "short ton" means 2,000 pounds;

(f) the terms "of", "wholly of", "almost wholly of", "in part of" and "containing", when used between the description of an article and a material (e.g., "furniture of wood", "woven fabrics, wholly of cotton", etc.), have the following meanings:

(i) "of" means that the article is wholly or in chief value of the named material;

(ii) "wholly of" means that the article is, except for negligible or insignificant quantities of some other material or materials, composed completely of the named material;

(iii) "almost wholly of" means that the essential character of the article is imparted by the named material, notwithstanding the fact that significant quantities of some other material or materials may be present; and

(iv) "in part of" or "containing" mean that the article contains a significant quantity of the named material.

With regard to the application of the quantitative concepts specified in subparagraphs (ii) and (iv) above, it is intended that the de minimis rule apply.

10. General Interpretative Rules. For the purposes of these schedules --

(a) the general, schedule, part, and subpart headnotes, and the provisions describing the classes of imported articles and specifying the rates of duty or other import restrictions to be imposed thereon are subject to the rules of interpretation set forth herein and to such other rules of statutory interpretation, not inconsistent therewith, as have been or may be developed under administrative or judicial rulings;

(b) the titles of the various schedules, parts, and subparts and the footnotes therein are intended for convenience in reference only and have no legal or interpretative significance;

(c) an imported article which is described in two or more provisions of the schedules is classifiable in the provision which most specifically describes it; but, in applying this rule of interpretation, the following considerations shall govern:

(i) a superior heading cannot be enlarged by inferior headings indented under it but can be limited thereby;

(ii) comparisons are to be made only between provisions of coordinate or equal status, i.e., between the primary or main superior headings of the schedules or between coordinate inferior headings which are subordinate to the same superior heading;

(d) if two or more tariff descriptions are equally applicable to an article, such article shall be subject to duty under the description for which the original statutory rate is highest, and, should the highest original statutory rate be applicable to two or more of such descriptions, the article shall be subject to duty under that one of such descriptions which first appears in the schedules;

(e) in the absence of special language or context which otherwise requires --

(i) a tariff classification controlled by use (other than actual use) is to be determined in accordance with the use in the United States at, or immediately prior to, the date of importation, of articles of that class or kind to which the imported articles belong, and the controlling use is the chief use, i.e., the use which exceeds all other uses (if any) combined;

(ii) a tariff classification controlled by the actual use to which an imported article is put in the United States is satisfied only if such use is intended at the time of importation, the article is so used, and proof thereof is furnished within 3 years after the date the article is entered;

(f) an article is in chief value of a material if such material exceeds in value each other single component material of the article;

(g) a headnote provision which enumerates articles not included in a schedule, part, or subpart is not necessarily exhaustive, and the absence of a particular article from such headnote provision shall not be given weight in determining the relative specificity of competing provisions which describe such article;

(h) unless the context requires otherwise, a tariff description for an article covers such article, whether assembled or not assembled, and whether finished or not finished;

(ij) a provision for "parts" of an article covers a product solely or chiefly used as a part of such article, but does not prevail over a specific provision for such part.

General Headnotes and Rules of Interpretation

11. Issuance of Rules and Regulations. The Secretary of the Treasury is hereby authorized to issue rules and regulations governing the admission of articles under the provisions of the schedules. The allowance of an importer's claim for classification, under any of the provisions of the schedules which provide for total or partial relief from duty or other import restrictions on the basis of facts which are not determinable from an examination of the article itself in its condition as imported, is dependent upon his complying with any rules or regulations which may be issued pursuant to this headnote.

12. The Secretary of the Treasury is authorized to prescribe methods of analyzing, testing, sampling, weighing, gauging, measuring, or other methods of ascertainment whenever he finds that such methods are necessary to determine the physical, chemical, or other properties or characteristics of articles for purposes of any law administered by the Customs Service.

APPENDIX A

SCHEDULE 1. - ANIMAL AND VEGETABLE PRODUCTS

Part 1 - Live Animals

Part 2 - Meats
- A. Bird Meat
- B. Meats Other Than Bird Meat

Part 3 - Fish and Shellfish
- A. Fish, Fresh, Chilled, or Frozen
- B. Fish, Dried, Salted, Pickled, Smoked, or Kippered
- C. Fish in Airtight Containers
- D. Other Fish Products
- E. Shellfish

Part 4 - Dairy Products; Birds' Eggs
- A. Milk and Cream
- B. Butter, Oleomargarine, and Butter Substitutes
- C. Cheeses
- D. Other Milk Products
- E. Poultry and Other Birds' Eggs

Part 5 - Hides, Skins, and Leather; Furskins
- A. Hides, Skins, and Leather
- B. Furskins

Part 6 - Live Plants; Seeds
- A. Live Plants
- B. Seeds

Part 7 - Cereal Grains, Milled Grain Products, and Malts and Starches
- A. Grains
- B. Milled Grain Products
- C. Malts and Starches

Part 8 - Vegetables
- A. Vegetables, Fresh, Chilled, or Frozen
- B. Vegetables, Dried, Desiccated, or Dehydrated
- C. Vegetables, Packed in Salt, in Brine, Pickled, or Otherwise Prepared or Preserved
- D. Mushrooms and Truffles

Part 9 - Edible Nuts and Fruits
- A. Edible Nuts
- B. Edible Fruits
- C. Fruit Flours, Peels, Pastes, Pulps, Jellies, Jams, Marmalades, and Butters
- D. Glacé Nuts, Fruits, and Other Vegetable Substances

Part 10 - Sugar; Cocoa; Confectionery
- A. Sugars, Sirups, and Molasses
- B. Cocoa
- C. Confectionery

Part 11 - Coffee, Tea, Maté, and Spices
- A. Coffee and Coffee Substitutes, Tea, Maté
- B. Spices and Spice Seeds

Part 12 - Beverages
- A. Fruit Juices
- B. Non-Alcoholic Beverages
- C. Fermented Alcoholic Beverages
- D. Spirits, Spirituous Beverages and Beverage Preparations

Part 13 - Tobacco and Tobacco Products

Part 14 - Animal and Vegetable Oils, Fats, and Greases
- A. Oil-Bearing Vegetable Materials
- B. Vegetable Oils, Crude or Refined
- C. Animal Oils, Fats, and Greases, Crude or Refined
- D. Hardened Oils, Fats, and Greases; Mixtures

Part 15 - Other Animal and Vegetable Products
- A. Products of American Fisheries
- B. Edible Preparations
- C. Animal Feeds
- D. Feathers, Downs, Bristles, and Hair
- E. Shellac and Other Lacs; Natural Gums, Gum Resins, Resins, and Balsams; Turpentine and Rosin
- F. Miscellaneous Animal Products
- G. Miscellaneous Vegetable Products

SCHEDULE 1. - ANIMAL AND VEGETABLE PRODUCTS

Item	Articles	Rates of duty	
		1	2
	PART 7. - CEREAL GRAINS, MILLED GRAIN PRODUCTS, AND MALTS AND STARCHES		
	Subpart A. - Grains 1/		
	Subpart A headnote:		
	1. The provisions of this subpart cover the named grains whether or not fit for human consumption.		
130.10	Barley	7.5¢ per bu. of 48 lbs.	20¢ per bu. of 48 lbs.
130.15	Buckwheat, hulled or not hulled	10¢ per 100 lbs.	25¢ per 100 lbs.
130.20	Canary seed	0.25¢ per lb.	1¢ per lb.
	Corn or maize:		
130.30	Seed corn or maize, certified by a responsible officer of a foreign government in accordance with the rules and regulations of that government to have been grown and approved especially for use as seed, in containers marked with the foreign government's official certified seed corn tags	12.5¢ per bu. of 56 lbs.	25¢ per bu. of 56 lbs.
130.35	Other	25¢ per bu. of 56 lbs.	25¢ per bu. of 56 lbs.
130.36	If products of Cuba	10¢ per bu. of 56 lbs. (s)	
130.40	Grain sorghum	0.4¢ per lb.	2¢ per lb.
130.45	Oats, hulled or not hulled	4¢ per bu. of 32 lbs.	16¢ per bu. of 32 lbs.
	Rice:		
130.50	Paddy or rough	1.25¢ per lb.	1.25¢ per lb.
130.55	Brown (hulls removed, all or in part)	1.5¢ per lb.	1.5¢ per lb.
130.60	Rye	6¢ per bu. of 56 lbs.	15¢ per bu. of 56 lbs.
	Wheat:		
130.65	Not fit for human consumption	5% ad val.	10% ad val.
130.70	Other	21¢ per bu. of 60 lbs.	42¢ per bu. of 60 lbs.

(s) = Suspended. See general headnote 3(b).

1/ Imports of certain grains are subject to additional import restrictions. See Appendix to Tariff Schedules. [pp. 214-215 of this volume]

SCHEDULE 1. - ANIMAL AND VEGETABLE PRODUCTS

Item	Articles	Rates of duty 1	Rates of duty 2
	PART 7. - CEREAL GRAINS, MILLED GRAIN PRODUCTS, AND MALTS AND STARCHES--Con.		
	Subpart B. - Milled Grain Products 1/		
	Subpart B headnote:		
	1. The term "milled grain products", as used in this subpart, embraces flours, grits, groats, meal, flaked or rolled grains, and other products, all the foregoing, whether or not fit for human consumption, made or derived from the grains named in subpart A of this part by grinding, crushing, breaking, rolling, flaking, pearling, polishing, or similar milling processes, but does not include by-products or wastes resulting from any of these processes.		
	Milled grain products:		
	Fit for human consumption:		
	Barley:		
131.10	Pearl barley	0.4¢ per lb.	2¢ per lb.
131.12	Other	2¢ per lb.	2¢ per lb.
131.15	Buckwheat	0.2¢ per lb.	0.5¢ per lb.
131.20	Corn	50¢ per 100 lbs.	50¢ per 100 lbs.
131.21	If product of Cuba	40¢ per 100 lbs. (s)	
	Oats:		
131.25	Valued not over $8 per 100 lbs	10% ad val.	80¢ per 100 lbs.
131.27	Valued over $8 per 100 lbs	80¢ per 100 lbs.	80¢ per 100 lbs.
	Rice:		
131.30	Milled rice (bran removed all or in part)	2.5¢ per lb.	2.5¢ per lb.
131.31	If product of Cuba	2¢ per lb. (s)	
131.33	Broken rice, which will pass readily through a metal sieve perforated with round holes 11/128 inch in diameter	0.3125¢ per lb.	0.625¢ per lb.
131.35	Meal and flour	0.3125¢ per lb.	0.625¢ per lb.
131.37	Patna, cleaned, for use in the manufacture of canned soups	Free	Free
131.38	Rye	22.5¢ per 100 lbs.	45¢ per 100 lbs.
131.40	Wheat	52¢ per 100 lbs.	$1.04 per 100 lbs.
131.45	Other	20% ad val.	20% ad val.
131.46	If products of Cuba	16% ad val. (s)	
	Not fit for human consumption:		
131.50	Barley	15¢ per 100 lbs.	40¢ per 100 lbs.
131.57	Buckwheat	10¢ per 100 lbs.	25¢ per 100 lbs.
131.60	Corn	45¢ per 100 lbs.	45¢ per 100 lbs.
131.61	If product of Cuba	18¢ per 100 lbs. (s)	
131.65	Oats	12.5¢ per 100 lbs.	50¢ per 100 lbs.

(s) = Suspended. See general headnote 3(b).

1/ Imports of certain milled grain products are subject to additional import restrictions. See Appendix to Tariff Schedules.

SCHEDULE 1. - ANIMAL AND VEGETABLE PRODUCTS

Item	Articles	Rates of duty	
		1	2
	PART 7. - CEREAL GRAINS, MILLED GRAIN PRODUCTS, AND MALTS AND STARCHES--Continued		
	Subpart B. - Milled Grain Products--Continued		
	Milled grain products--Continued		
	Not fit for human consumption--Continued		
131.67	Rice	31.25¢ per 100 lbs.	62.5¢ per 100 lbs.
131.70	Rye	10.5¢ per 100 lbs.	26.8¢ per 100 lbs.
	Wheat:		
131.72	Flour	2.5% ad val.	10% ad val.
131.75	Other	5% ad val.	10% ad val.
131.80	Other	10% ad val.	20% ad val.
	Mixtures of two or more of the foregoing products:		
131.85	Fit for human consumption	20% ad val.	20% ad val.
131.90	Not fit for human consumption	The highest rate applicable to any component material	The highest rate applicable to any component material
	Subpart C. - Malts and Starches		
	Malts and malt extract:		
	Malts:		
132.15	Rye malt	22.5¢ per 100 lbs.	40¢ per 100 lbs.
132.20	Barley and other malts	30¢ per 100 lbs.	40¢ per 100 lbs.
	Malt extract:		
132.25	Fluid	40¢ per gal.	$1 per gal.
132.30	Solid or condensed	30% ad val.	60% ad val.
132.35	Arrowroot, cassava, and sago flours and starches, and tapioca	Free	Free
	Other starches:		
132.50	Potato	1¢ per lb. 1/	2.5¢ per lb.
132.55	Other	0.75¢ per lb.	1.5¢ per lb.

1/ Rate temporarily increased by proclamation. See item 945.13 in Appendix to Tariff Schedules. [p. 213 of this volume]

SCHEDULE 1. - ANIMAL AND VEGETABLE PRODUCTS

Item	Articles	Rates of duty	
		1	2
	PART 15. - OTHER ANIMAL AND VEGETABLE PRODUCTS		
	* * * * * * *		
	Subpart C. - Animal Feeds		
	Subpart C headnotes:		
	1. For the purposes of this subpart -- (a) the term "animal feeds, and ingredients therefor" embraces products chiefly used as food for animals, or chiefly used as ingredients in such food, respectively, but such term does not include any product provided for in schedule 4 (except part 2E thereof) or schedule 5 (except part 1K thereof); and (b) the terms "mixed feeds" and "mixed-feed ingredients" in item 184.70 embrace products which are admixtures of grains (or products, including byproducts, obtained in milling grains) with molasses, oil cake, oil-cake meal, or other feedstuffs, and which consist of not less than 6 percent by weight of the said grains or grain products.		
	2. None of the provisions of this subpart cover fertilizer or fertilizer materials (see part 11 of schedule 4).		
184.10	Bran, shorts, and middlings obtained in milling grains	2.5% ad val.	10% ad val.
184.20	Beet pulp, dried	$1.70 per short ton	$4.45 per short ton
184.25	Brewers' and distillers' grains and malt sprouts	$1.10 per short ton	$4.45 per short ton
184.30	Hay	60¢ per short ton	$5 per short ton
184.35	Straw (except flax straw and rice straw)	50¢ per short ton	$1.50 per short ton
184.40	Grain hulls, ground or not ground	2.5¢ per 100 lbs.	10¢ per 100 lbs.
	Grain or seed screenings, scalpings, chaff, or scourings, ground or not ground:		
184.45	Of flaxseed	0.5% ad val.	10% ad val.
184.47	Other	2.5% ad val.	10% ad val.
	Soy bean and other vegetable oil cake and oil-cake meal:		
184.50	Linseed oil cake and oil-cake meal	0.25¢ per lb.	0.3¢ per lb.
184.52	Other	0.3¢ per lb.	0.3¢ per lb.
	Tankage; dead fish and whales; fish and whale scrap, meal and solubles; homogenized condensed fish and whales; all the foregoing not fit for human consumption:		
184.54	Cod-liver solubles	10% ad val.	20% ad val.
184.55	Other	Free	Free

SCHEDULE 1. - ANIMAL AND VEGETABLE PRODUCTS

Item	Articles	Rates of duty	
		1	2
	PART 15. - OTHER ANIMAL AND VEGETABLE PRODUCTS--Continued		
	Subpart C. - Animal Feeds--Continued		
	Animal feeds, and ingredients therefor, not specially provided for:		
	Meat, including meat offal, not fit for human consumption:		
	Raw, whether or not chilled or frozen:		
184.60	Horsemeat (except meat packed in immediate containers weighing with their contents less than 10 pounds each).....	Free	Free
184.61	Other.....	5% ad val.	10% ad val.
184.65	Prepared or preserved.....	8% ad val.	20% ad val.
184.70	Byproducts obtained from the milling of grains, mixed feeds, and mixed-feed ingredients.....	2.5% ad val.	10% ad val.
184.75	Other.....	10% ad val.	20% ad val.
	* * * * * * *		

APPENDIX TO THE TARIFF SCHEDULES

Part 1 - Temporary Legislation
A. Temporary Provisions for Additional Duties
B. Temporary Provisions Amending the Tariff Schedules

Part 2 - Temporary Modifications Proclaimed Pursuant to Trade-Agreements Legislation
A. Escape-Clause Actions
B. Temporary Modifications Pursuant to Section 252 of the Trade Expansion Act of 1962

Part 3 - Additional Import Restrictions Proclaimed Pursuant to Section 22 of the Agricultural Adjustment Act, as Amended

---

Appendix Headnotes:

1. The provisions of this Appendix relate to legislation and to executive and administrative actions pursuant to duly constituted authority, under which --
(a) one or more of the provisions in schedules 1 through 8 are temporarily amended or modified, or
(b) additional duties or other import restrictions are imposed by, or pursuant to, collateral legislation.

2. Unless the context requires otherwise, the general headnotes and rules of interpretation and the respective schedule, part, and subpart headnotes in schedules 1 through 8 apply to the provisions of this Appendix.

APPENDIX TO THE TARIFF SCHEDULES

Item	Articles	Rates of duty	
		1	2
	PART 2. - TEMPORARY MODIFICATIONS PROCLAIMED PURSUANT TO TRADE-AGREEMENTS LEGISLATION		
	Part 2 headnote:		
	1. This part contains the temporary modifications of the provisions in the tariff schedules proclaimed by the President pursuant to trade-agreements legislation. Unless otherwise stated, the modified provisions are effective until suspended or terminated.		
	* * * * * * *		
	Subpart B. - Temporary Modifications Pursuant to Section 252 of the Trade Expansion Act of 1962		
945.13	Potato starch (provided for in item 132.50).....	2.5¢ per lb.	No change
	* * * * * * *		
	PART 3. - ADDITIONAL IMPORT RESTRICTIONS PROCLAIMED PURSUANT TO SECTION 22 OF THE AGRICULTURAL ADJUSTMENT ACT, AS AMENDED		
	Part 3 headnotes:		
	1. This part covers the provisions proclaimed by the President pursuant to section 22 of the Agricultural Adjustment Act, as amended (7 USC 624), imposing import fees, herein referred to as duties, and quantitative limitations on articles imported into the United States. The duties provided for in this part are cumulative duties which apply in addition to the duties, if any, otherwise imposed on the articles involved. Unless otherwise stated, the duties and quantitative limitations provided for in this part apply until suspended or terminated.		
	2. Exclusions.--The import restrictions provided for in this part do not apply with respect to -- (a) articles imported by or for the account of any agency of the United States;		
	* * * * * * *		

APPENDIX TO THE TARIFF SCHEDULES

Item	Articles	Rates of duty	
		1	2
	PART 3. - ADDITIONAL IMPORT RESTRICTIONS PROCLAIMED PURSUANT TO SECTION 22 OF THE AGRICULTURAL ADJUSTMENT ACT, AS AMENDED--Continued (c) articles entered for exhibition, display, or sampling at a Trade Fair or for research, but only if written approval of the Secretary of Agriculture or his designated representative is presented at the time of entry or bond is furnished in a form prescribed by the Commissioner of Customs in an amount equal to the value of the merchandise as set forth in the entry plus the estimated duty as determined at the time of entry, conditioned upon the production of such written approval within six months from the date of entry; (d) certified or registered seed wheat for use for seeding and crop-improvement purposes, in bags tagged and sealed by an officially recognized seed-certifying agency of the country of production, if -- (i) the individual shipment amounts to 100 bushels (of 60 pounds each for wheat) or less, or (ii) the individual shipment amounts to more than 100 bushels and the written approval of the Secretary of Agriculture or his designated representative is presented at the time of entry, or bond is furnished in a form prescribed by the Commissioner of Customs in an amount equal to the value of the merchandise as set forth in the entry, plus the estimated duty as determined at the time of entry, conditioned upon the production of such written approval within six months from the date of entry; (e) wheat flour, the product of Israel, which is certified to the Secretary of Agriculture by an authorized representative of the government of Israel or its designee as having been thoroughly safeguarded for ritual purposes under rabbinical supervision and which is imported into the United States for use solely for religious and ritual purposes in the making of matzos for Passover, if the written approval of the Secretary of Agriculture is presented at the time of entry, or withdrawal from warehouse, for consumption; and * * * * * * *		

APPENDIX TO THE TARIFF SCHEDULES

Item	Articles	Quota quantity	
		Wheat (in 60-pound bushels)	Milled wheat products (in pounds)
	PART 3. - ADDITIONAL IMPORT RESTRICTIONS PROCLAIMED PURSUANT TO SECTION 22 OF THE AGRICULTURAL ADJUSTMENT ACT, AS AMENDED--Continued		
950.60	Whenever, in any 12-month period beginning May 29 in any year, the respective quantity specified below of wheat fit for human consumption (item 130.70, part 7A, schedule 1) or of milled wheat products fit for human consumption (item 131.40, part 7B, schedule 1) the product of a specified foreign country or area has been entered, no such wheat or milled wheat products, respectively, the product of such country or area may be entered during the remainder of such period:		
	Canada	795,000	3,815,000
	China	None	24,000
	Hungary	None	13,000
	Hong Kong	None	13,000
	Japan	None	8,000
	United Kingdom	100	75,000
	Australia	None	1,000
	Germany	100	5,000
	Syria	100	5,000
	New Zealand	None	1,000
	Chile	None	1,000
	Netherlands	100	1,000
	Argentina	2,000	14,000
	Italy	100	2,000
	Cuba	None	12,000
	France	1,000	1,000
	Greece	None	1,000
	Mexico	100	1,000
	Panama	None	1,000
	Uruguay	None	1,000
	Poland and Danzig	None	1,000
	Sweden	None	1,000
	Yugoslavia	None	1,000
	Norway	None	1,000
	Canary Islands	None	1,000
	Rumania	1,000	None
	Guatemala	100	None
	Brazil	100	None
	Union of Soviet Socialist Republics	100	None
	Belgium	100	None
	Other foreign countries or areas	None	None
	* * * * * * *		

Value of U.S. imports for consumption, by TSUS items included in the individual summaries of this volume, total and from the 3 principal suppliers, 1965

(In thousands of dollars. The dollar value of imports shown is defined generally as the market value in the foreign country and therefore excludes U.S. import duties, freight, and transportation insurance)

TSUS item	All countries		First supplier		Second supplier		Third supplier	
	Amount in 1965	Percent change from 1964	Country	Value	Country	Value	Country	Value
Barley (p.5)								
130.10	8,806	-44.1	Canada	8,115	France	634	Denmark	58
131.50	1	-10.1	Canada	1	-	-	-	-
Buckwheat and milled buckwheat products (p. 15)								
130.15	19	85.9	Canada	19	-	-	-	-
131.15	-	-	-	-	-	-	-	-
131.57	5	1/	Canada	5	-	-	-	-
Canary seed (p. 23)								
130.20	509	-29.3	Argentina	367	Canada	91	Morocco	47
Corn or maize (p.25)								
130.30	106	-31.8	Canada	106	-	-	-	-
130.35	1,751	2.1	Argentina	531	Paraguay	308	Brazil	304
130.36	-	-	-	-	-	-	-	-
131.60	-	-	-	-	-	-	-	-
131.61	-	-	-	-	-	-	-	-
Grain sorghum (p.37)								
130.40	35	-82.0	Mexico	31	Colombia	3	Jamaica	1
Oats (p. 45)								
130.45	3,343	43.2	Canada	3,337	Mexico	6	-	-
131.65	224	67.1	Canada	222	Mexico	2	-	-
Rice and milled rice products (p. 55)								
130.50	-	-	-	-	-	-	-	-
130.55	160	-60.3	Canada	160	-	-	-	-
131.30	72	16.6	Br. Guiana	48	Italy	22	Pakistan	1
131.31	-	-	-	-	-	-	-	-
131.33	3,233	2/	Canada	1,773	W. Germany	1,413	Brazil	47
131.35	36	20.8	Hong Kong	34	Japan	1	Thailand	3/
131.37	-	-	-	-	-	-	-	-
131.67	1	53.5	Hong Kong	1	-	-	-	-
Rye (p. 71)								
130.60	2,143	19.1	Canada	2,143	-	-	-	-
131.70	-	-	-	-	-	-	-	-
Wheat (p.79)								
130.65	1,433	-67.0	Canada	1,432	Mexico	1	-	-
130.70	24	-98.2	Canada	24	-	-	-	-
131.72	534	-2.2	Canada	534	-	-	-	-
131.75	3/	-96.2	Canada	3/	-	-	-	-
Milled barley products fit for human consumption (p. 93)								
131.10	35	10.7	Netherlands	34	Japan	1	Thailand	3/
131.12	8	-33.0	U.K.	8	Netherlands	3/	-	-

See footnotes at end of table.

May 1966
1:6

Value of U.S. imports for consumption, by TSUS items included in the individual summaries of this volume, total and from the 3 principal suppliers, 1965--Continued

(In thousands of dollars. The dollar value of imports shown is defined generally as the market value in the foreign country and therefore excludes U.S. import duties, freight, and transportation insurance)

TSUS item	All countries		First supplier		Second supplier		Third supplier	
	Amount in 1965	Percent change from 1964	Country	Value	Country	Value	Country	Value
Milled corn products fit for human consumption (p. 99)								
131.20	52	-32.1	Canada	48	Mexico	3	Ecuador	3/
131.21	-	-	-	-	-	-	-	-
Milled oat products fit for human consumption (p. 105)								
131.25	3/	-86.4	U.K.	3/	-	-	-	-
131.27	47	-6.0	Ireland	39	U.K.	8	Sweden	3/
Milled rye products fit for human consumption (p. 111)								
131.38	-	-	-	-	-	-	-	-
Milled wheat products fit for human consumption (p. 113)								
131.40	224	39.2	Canada	218	Japan	4	Sweden	1
Milled grain products not elsewhere enumerated (p. 121)								
131.45	67	-21.6	Switzerland	56	W. Germany	10	Canada	1
131.46	-	-	-	-	-	-	-	-
131.80	-	-	-	-	-	-	-	-
131.85	-	-	-	-	-	-	-	-
131.90	3/	-44.1	Canada	3/	-	-	-	-
Malts and malt extracts (p. 123)								
132.15	-	-	-	-	-	-	-	-
132.20	2,381	48.1	Canada	2,357	Belg.& Lux.	18	E. Germany	6
132.25	2	62.6	U.K.	2	W. Germany	3/	-	-
132.30	1	1/	Canada	1	-	-	-	-
Starches (p. 133)								
132.35	12,711	26.6	Thailand	9,083	Brazil	2,720	Leeward & Windward Is.	413
132.50	1,173	2/	Netherlands	1,112	Poland	54	W. Germany	5
132.55	1,192	46.0	Brazil	578	W. Germany	212	Netherlands	139
Feeds of vegetable origin and feeds not elsewhere enumerated (p. 151)								
184.10	2,553	-53.1	Canada	1,997	Haiti	544	Dom. Rep.	10
184.40	256	-11.6	Canada	256	Mexico	3/	-	-
184.45	535	-6.9	Canada	535	-	-	-	-
184.47	2,473	-7.9	Canada	2,469	France	4	Mexico	3/
184.70	3,417	6.4	Canada	2,128	Mexico	603	Haiti	27
184.75	3,638	21.3	France	1,638	W. Germany	867	Canada	488
Beet pulp, dried (p. 159)								
184.20	156	-70.5	Canada	146	Spain	10	-	-
Brewers' and distillers' grains and malt sprouts (p. 163)								
184.25	2,465	16.7	Canada	2,458	Jamaica	7	-	-
Hay (p. 167)								
184.30	585	14.5	Canada	585	-	-	-	-

See footnotes at end of table.

Value of U.S. imports for consumption, by TSUS items included in the individual summaries of this volume, total and from the 3 principal suppliers, 1965--Continued

(In thousands of dollars. The dollar value of imports shown is defined generally as the market value in the foreign country and therefore excludes U.S. import duties, freight, and transportation insurance)

TSUS item	All countries		First supplier		Second supplier		Third supplier	
	Amount in 1965	Percent change from 1964	Country	Value	Country	Value	Country	Value
Straw (p.171)								
184.35	11	72.9	Canada	11	-	-	-	-
Vegetable oil cake and meal (p. 173)								
184.50	68	5.0	Canada	68	-	-	-	-
184.52	2,559	5.3	Mexico	1,538	Phil. Rep.	956	Dom. Rep.	66
Fish meal and other feeds of animal origin (p. 185)								
184.54	26	-3.1	Canada	26	-	-	-	-
184.55	32,578	-30.3	Peru	22,255	Canada	7,917	Chile	711
184.60	2,719	4.3	Argentina	1,878	Canada	753	Mexico	76
184.61	56	-20.6	Canada	22	Mexico	10	Australia	9
184.65	2,008	62.2	Canada	1,962	Argentina	40	Australia	5

1/ No imports reported for 1964.
2/ More than 200 percent.
3/ Less than $500.

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