1964 UNITED STATES CENSUS OF AGRICULTURE

FARMS
FARM CHARACTERISTICS
LIVESTOCK AND PRODUCTS
CROPS
FRUITS
VALUES

VOLUME II CHAPTER 4

Crops, Horticultural Products, and Forest Products

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1964 UNITED STATES CENSUS OF AGRICULTURE

Volume II—Chapter 4

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Chapter 4. Crops, Horticultural Products, and Forest Products

Introduction—This chapter presents information for field crops, vegetables, fruits (including berries and small fruits) and nuts, horticultural specialty crops (nursery and greenhouse products, etc.), and forest products for the 1964 census, together with comparable data from the 1959 census, when available.

Data for each crop usually include the number of farms on which the crop was harvested, the acreage harvested or the number of trees and vines, the quantity harvested, the quantity sold (if enumerated), and the value of the quantity harvested. No information on quantity harvested is given for vegetables. Units of measure are so varied for vegetables that it is difficult or impossible to obtain satisfactory figures from farm operators on vegetable production. Acreage data are not available for home gardens. No information on quantity harvested is given for horticultural specialty crops.

For several crops, such as corn, sorghums, soybeans, cowpeas, and peanuts, information was obtained on the acreage and the quantity harvested for each of their most important uses.

Source of data—The data presented are from the 1964 Census of Agriculture with comparative data for earlier censuses. The totals for farms reporting, acres harvested, quantity harvested, and quantity sold represent a summation of the answers to inquiries on questionnaires for each farm in the United States. For 1959, some of the data on the number of farms reporting by acres harvested per farm, or by number of trees per farm, or by quantity harvested per farm are estimates based on tabulations of data for a sample comprising all farms of 1,000 or more acres, plus 20 percent of the remaining farms. The totals for all farms for 1959 are not estimates, and, therefore, the count of farms by acres harvested per farm, etc., will not equal exactly the total for all farms. A headnote to the table indicates which data are estimates based upon reports for only a sample of farms.

The introduction to this volume contains a description of (a) the procedures used in the enumeration, (b) the methods used in processing statistics, and (c) general definitions and explanations for the 1964 census.

Presentation of statistics—Statistics are presented as totals for the United States, for the three geographic regions, and for each of the 50 States.

Statistics for the United States include available comparable data from the prior censuses for all items, whereas statistics for regions and States are limited to selected items and generally to the 1959 census.

For the more important crops or widely grown crops, including most of those under government control programs, both 1964 and 1959 data by States have been included in the tables. The tables containing current data usually show farms, acreage or number of trees, and quantity harvested for the censuses of 1964 and 1959, and the value of the crop for the census of 1964. Where available, there is also presented data for farms classified by acres harvested or quantity harvested.

For the less important crops, data are presented only for the 1964 census. For minor crops, data are not presented by States. For the less important crops and for the minor crops, data for each census from 1930 to 1964 will be found for each State in State table 9, volume I of the reports of the 1964 Census of Agriculture.

For some crops, separate data have not been obtained for every State for each census. Accordingly, totals are presented only for the specified States for which data are available. In most cases these totals usually are approximate totals for the United States or for regions.

Detailed data on production and value of horticultural specialties and forest products, including farms, acres harvested, quantity harvested, and quantity sold may be found for each county in county table 15 of volume I of the reports for the 1964 Census of Agriculture. State totals for each of these crops harvested for each census from 1930 to 1964 will be found in State table 11 of volume I of the reports of the 1964 Census of Agriculture.

Information on crops harvested for irrigated land is published in county table 14 in volume I of the reports of the 1964 Census of Agriculture.

Definitions and explanations—The definitions that are given here are limited to those necessary for the understanding of the data for field crops, vegetables, fruits and nuts, and horticultural and forest products. For definitions that have general application and for a description of procedures used, see the introduction to this volume.

Farms or farms reporting—The term "farms" or "farms reporting" represents the number of farms harvesting a given crop. A crop planted but not harvested would not be included in the count of farms for that crop.

Generally, "farms" represents a count of the farms which report either acreage or quantity harvested, or both, for a given crop. In the case of vegetables, the number of farms represents a count of the farms reporting acres harvested for sale. The total number of farms reporting vegetables includes only farms reporting sales of vegetable crops harvested in the open (not under glass). The count of farms for Irish potatoes and sweetpotatoes includes farms that reported small quantities harvested but no acreage.

Crops harvested—The 1964 agriculture questionnaire was similar to the questionnaire used in several prior censuses in that it provided for the collection of detailed information for each crop harvested on the farm. The variation in the crops listed on the questionnaires used for the different States made possible the direct reporting of all important crops grown in a State. Each State questionnaire contained several "all other crops" questions for reporting crops not specifically listed in separate questions.

Acres harvested—In most instances, the acres reported for individual crops represent the area harvested during 1964. The area harvested is usually less than the area planted. A part of the acreage of corn, sorghums, peanuts, soybeans, and cowpeas was hogged off or grazed. Mature or almost mature crops grazed or hogged off by livestock were considered as harvested. The acreage for vegetables includes the acreage harvested for sale and excludes the area of small plots and gardens used to produce vegetables for home use.

The acres in bearing and nonbearing trees and vines represent the area on the date of the enumeration. Data are not available (except for California and Hawaii) for the acreage in individual orchard fruits, nuts, or vineyards.

Because of drought and other climatic conditions, crops are not always harvested for the use for which they were planted. In the extensive drought area in South Dakota in 1959, considerable acreage of small grains, normally harvested for grain, was cut for hay or pastured. Drought conditions resulted in heavy abandonment of crops in some areas, so many farmers let their livestock graze on much of this acreage. Acres pastured would not appear with census statistics for acres of grain crops harvested but would be included under "root and grain crops hogged or grazed." If the crop were completely abandoned, i.e., not harvested for grain or cut for hay or pastured, the acreage would not appear in the data for any crop. Land planted to a crop that completely failed and not replanted to another crop during the same calendar year would not be included in the data for cropland harvested, but would be included in the land-use classification "cropland not harvested and not pastured."

The acreage of land from which crops were harvested is not always the same as the total acres of all crops harvested, since more than one crop may be harvested from the same land during the same crop year. Farm operators were asked, "How many acres of land were in fields and tracts from which crops were harvested (including hay cut) this year?" The land for this question has been termed "cropland harvested." If two different crops were harvested from the same land during the year, the same land would be counted for both crops and the total acres of the two crops would be double the acreage of cropland harvested. In many areas, the total acres of all crops harvested exceed the acreage of cropland harvested.

For most field crops, census enumerators and farm operators were asked to report only whole acres and not to report fractions of acres. The exceptions to this procedure included vegetables for sale, Irish potatoes, sweetpotatoes, tobacco, and sugarcane, and sweet sorghums for sirup (in States where the harvesting of sugarcane and/or sorghums for sirup is common). For these crops, tenths of acres were to be reported. The acreage of land in fruit and nut trees, berries and other small fruits, and horticultural specialities was also to be reported in tenths of acres.

The acreage harvested represents the area harvested during the crop year 1964. For Hawaii, the acres of pineapples harvested represent the acres harvested for the year ending May 31, 1964. For southern Florida, the data for vegetable and Irish potato crops relate to the acres harvested in the period—October 1, 1963, to September 30, 1964.

Quantity harvested—The tables in this chapter show quantity harvested for each crop. The quantity harvested represents the amount of the crop actually picked or gathered, and includes the amount sold, the amount belonging to or delivered to the landlord, culls, and the amount kept for home consumption. The quantity harvested may be less than the amount produced if part of the crop was not harvested because of poor quality, lack of labor, low prices, etc. Except for citrus fruits, olives, avocados, and coffee, the data for quantity harvested relate to the crop year 1964.

The quantity harvested relates to the crop harvested during a crop harvesting season as follows: For citrus fruits, the crop harvested from the bloom of 1963 during the 1963-1964 marketing season; for olives, from the 1963 bloom during the period September 1963, to February 28, 1964; for avocados, from the 1963 bloom during the period July 1, 1963, to February 28, 1964, in Florida, and October 1, 1963, to September 30, 1964, in California; and for coffee, from the 1963-1964 crop. For vegetables and berries and other small fruits, the quantity sold and not the quantity harvested was obtained. Generally, the enumeration was made at the end of the harvest season. However, farm operators and census enumerators were asked to estimate the quantity of any crop not harvested at the time of the enumeration and to include this in the total quantity harvested.

Unit of measure—The unit of measure in which quantities were to be reported has varied for some crops, not only from State to State, but also from census to census. The purpose of varying units of measure has been to permit reporting in the units of measure currently in use by farm operators. Table 1 shows by States the units of measure used for fruits and nuts in the enumeration and in this report. To provide readily comparable information, data published in earlier reports in different units of measure generally have been converted to the units used in this report for 1964.

Conversion factors—For publication, the units reported by various States were converted to a common unit by the use of standard weights and measures for the applicable crop. The conversion factors are given in table 2. The quantity of coffee is given in pounds of parchment (1 pound of parchment equals 4 pounds of "green" or cherry coffee). In California, the quantity harvested for raisin grapes was obtained on a dry weight basis and converted to a fresh weight basis. The conversion was made on the basis of 1 pound of raisins equals 4 pounds of fresh grapes. In California, prunes reported on a dry weight basis were converted to fresh weight on the basis of 1 pound of dried prunes equals 2½ pounds of fresh prunes; and in Washington and Oregon, 1 pound of dry prunes equals 3½ pounds on the fresh basis.

Miscellaneous and minor crops—The agriculture questionnaires for each State did not have a separate question for every field, berry, fruit, and nut crop. The enumerators were instructed to report various crops without a separate inquiry on the questionnaire under several "all other crops" questions provided on the questionnaire. Farm operators or enumerators were to write in the name of this crop and enter the data on acres, quantity harvested, etc., in the space provided. These crops were coded, and separate totals were obtained for each crop. For crops of very minor economic importance in a State, data have been combined in some instances with those for other States and are shown in the tables as "all other States."

Value of crops harvested—The total value of crops harvested represents the estimated value of all crops harvested for the crop year 1964. It includes the value of quantities used for feed, seed, human consumption, loss by waste, destruction, etc., as well as quantities sold. In most cases, farmers were not asked to report value of crops harvested. The values were calculated during the office processing. For individual crops, the quantity harvested was multiplied by the average price at which the crop was sold in the State. State average prices were compiled for the Bureau of the Census by the Statistical Reporting Service of the U.S. Department of Agriculture. These State average prices were based on reports received from a sample of farmers, dealers, etc. Quantities harvested were not obtained for vegetables, for some forest products, or for nursery and greenhouse products. Therefore, for these crops, the value of sales, as obtained from farm operators, was used in the calculation of the total value of crops harvested.

For corn, sorghums, cowpeas, root and grain crops hogged off or grazed, values of production were calculated by determining the average value per acre of the part of the crop harvested for other uses and multiplying this calculated average by the number of acres hogged or grazed.

Value of crops sold—Data for the value of crops sold in 1964 were obtained by enumeration for some products and by calculation for others. The agriculture questionnaire used for the 1964 census provided for farm operators to report value of sales for the following crops:

All vegetables
Nursery and greenhouse products
Standing timber
Miscellaneous forest products (poles, piling, bark, bolts, mine timbers, etc.)

For all other crops, the value of sales was calculated during the office processing. One of the following three procedures was used:

(1) For the crops for which data on quantities sold were obtained during enumeration, the State average prices were multiplied by the totals of the quantities reported as sold or the quantities reported as produced for sale.

This procedure was used for the following crops:

Corn for grain
Corn for silage
Sorghums for grain, seed, silage, sirup, and dry forage
All small grains
Hay crops (including grass silage)
All berries and small fruits
Firewood and fuelwood
Pulpwood
Fence posts
Sawlogs and veneer logs
Christmas trees
Gum for naval stores
Maple sap

(2) For most of the crops which are raised primarily for sale, the entire quantity produced was considered to be sold. The State average prices were accordingly multiplied by the total quantity produced. The following crops were covered by this procedure:

Cotton
Popcorn
Sugar beets for sugar
Broomcorn
Safflower
Sugarcane for sugar
Tobacco

(3) For all other crops, the State average prices were multiplied by the quantities sold as estimated on the basis of crop-distribution data furnished by the Statistical Reporting Service of the U.S. Department of Agriculture, or data reported in questions for "other crops" on the questionnaire, or data obtained from earlier censuses.

Data for the sales of crops represent total sales for the entire farm, regardless of who shared the receipts. For tenant operated farms, the landlord's share of crops was considered as sold provided the crops were moved off the tenant operated farmland. All crops raised under a contract arrangement were considered as sold from the farm where they were harvested. For institutional farms, all crops produced on land operated by the institution and consumed by the inmates were to be reported as sold.

All data on sales relate to one crop year. Crop sales are for crops harvested during the crop year whether the crops were actually sold immediately after harvest or placed in storage for later sale.

The value of crops sold for the 1959 Census of Agriculture is generally comparable with that for 1964. The data for farm products sold for the two censuses are not fully comparable for the following reasons:

(1) The 1964 value of forest products sold included gum for naval stores, which was specifically excluded for the 1959 census.

(2) The 1964 value of forest products sold included data on maple sap sold, and all maple sirup produced was considered sold. In 1959 the amount of sap sold was not obtained, and maple sirup produced was sold on the basis of disposition estimates obtained from the Statistical Reporting Service.

(3) The checking for the completeness of the reporting of the quantity sold for corn, sorghums, small grains, and hays was performed for individual farm records by computer for 1964 and by statistical clerks for the 1959 census. The checking and editing procedures were performed more uniformly for 1964 than for 1959. Reference should be made to the introduction to this volume for a statement regarding the editing of the questionnaire for the quantity of crops sold for the 1964 census.

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Corn—The 1964 agriculture questionnaire provided for the reporting of corn according to use. The total acreage was classified into (1) corn for grain, (2) corn for silage, (3) corn cut for green or dry fodder, and (4) corn hogged or grazed. The questions were uniform for all of the 48 conterminous States. The 1964 questionnaire provided separate questions for corn cut for green and dry fodder and corn hogged or grazed. These two uses were combined in one question for the 1959 and 1954 censuses. Also there was a difference in the unit of measure for reporting quantity of corn harvested and sold. For 1964, bushels were specified as the unit for corn harvested for grain for all States except California, where hundredweight was used. For 1959, for the States of New York, Pennsylvania, Michigan, Delaware, Maryland, and West Virginia, the questionnaire contained a provision for the quantity of corn for grain to be reported either in bushels (shelled basis) or in baskets of ear corn. Prior to tabulation for 1959, all reports were converted to bushels (shelled basis) on the basis of the following factors: 70 pounds of ear corn, or two baskets of ears, or 56 pounds of shelled corn equal 1 bushel. A barrel of ear corn was usually considered equal to 5 bushels of shelled corn. This unit variation between 1964 and 1959 may

have had some effect on comparability in a few States.

Sorghums—The agriculture questionnaire used in 25 States contained questions requiring the reporting of the sorghum crop harvested according to use. The sorghum acreage was classified into (1) sorghums for grain or seed, (2) sorghums for silage, (3) sorghums cut for dry forage or hay, (4) sorghums hogged or grazed, and (5) sorghums for sirup. A question regarding sorghums for sirup was on the questionnaire for 14 States: Alabama, Arkansas, Georgia, Indiana, Iowa, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, South Carolina, Tennessee, Texas, and Virginia. The same detailed questions, except for sorghums for sirup, were asked in the following 11 States: Arizona, California, Colorado, Illinois, Kansas, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, and Wyoming. In other States, sorghums harvested were to be reported in the space provided for "all other crops."

The agriculture questionnaire for each State provided for the reporting of the quantity harvested and quantity sold in the unit of measure most commonly used in the State. The unit of measure for sorghums for grain was bushels for 16 of the 25 State questionnaires on which a specific inquiry on sorghums was included. In Colorado, New Mexico, Oklahoma, Texas, and Wyoming the unit of measure was pounds, and in Arizona, California, Kentucky, and Tennessee the unit of measure was hundredweight.

Sorghums for silage and for forage were reported in tons. Silage production was reported on a green-weight basis and forage on a dry weight basis. No information was obtained for the production for the acreage hogged or grazed.

Small grains—The agriculture questionnaire for 1964 contained several questions for the acreage and quantity of small grains harvested. There were separate questions for the most important small grains harvested in each State.

Some small grains were to be reported under "other grains" in all States except Colorado, Hawaii, and Wyoming. The number of small grain crops for which a separate question appeared on the agriculture questionnaire varied from State to State, therefore the kinds of small grains included in "other grains" were not the same for all States. Rice was the only small grain harvested in Hawaii.

Table 34 of this chapter shows farms, acreage, and quantity harvested for "other grains" for 1964 and 1959. In Texas, the kinds of small grains included under "other grains" differed for North Texas and South Texas because different questionnaires were used in the northern and southern parts of the State.

Wheat—Questions on the agriculture questionnaire on wheat provided for acres harvested, bushels harvested, and bushels sold. A separate question for wheat appeared on the questionnaire for each State except Hawaii. Separate questions also were included for each type of wheat in States where production of more than one type was important. In States where spring wheat and winter wheat were both important crops, separate questions were provided for each type. Three separate types of wheat (a) winter wheat, (b) durum wheat, and (c) other spring wheat, were listed in North Dakota, South Dakota, Minnesota, and Montana. Where a separate question was not provided, spring wheat was included under all "wheat." "Durum wheat" produced in States other than the four States with a separate question for durum wheat was included as spring wheat.

A count of farms reporting any wheat was made in 1964 for States where different types of wheat were reported. However, a count of farms reporting any wheat was not obtained for the 1959 census, and a total for the farms reporting wheat at the United States, region, or State level can only be approximated by adding the number of farms reporting the several types. Duplication occurred when two or more types of wheat were harvested on the same farm, as the farm would be counted as a farm reporting each type of wheat harvested. For this reason, farms reporting any wheat in table 16 for 1959 are given only for States in which data for 1959 are comparable with data for 1964.

Mixtures of wheat and other small grains were to be reported as "mixed grains" and not to be reported as wheat. The same procedure was used for the 1959, 1954, and 1950 censuses. For the 1945, 1940, and 1935 censuses, one-half of the acreage of a mixture, such as wheat and flax, was to be reported as wheat and the other half as flax.

The unit of measure for wheat was bushels for all States except Alaska, Arizona, and California where hundredweight was used.

Oats for grain—The questionnaire for all States, except for Oregon and Hawaii, listed one question for reporting acres, quantity harvested, and sales of oats harvested. In Oregon, in addition to a separate question concerning oats grown alone, a second question was used to

obtain the amount of oats cleaned out of vetch, peas, and oat mixtures. In Oregon, considerable acreages of oats and peas, or oats and vetch, are grown together and harvested at the same time. The acreage of oats and peas grown together was included under the acreage for peas, and the oats and vetch, under the acreage for vetch. Oats cleaned out of vetch and peas in Oregon were added to the production of oats grown alone. In Oregon, 324 farms reported 240,581 bushels of oats cleaned out of vetch and peas in 1964. For 1964, oats cut when ripe or nearly ripe were to be reported under "Oats, wheat, barley, rye, or other small grains cut for hay."

The unit of measure for oats was bushels on all State questionnaires except for Alaska, Arizona, and California.

Barley—A separate question for barley appeared on the State agriculture questionnaires for all States except New Hampshire, Vermont, Rhode Island, Massachusetts, Connecticut, Alabama, Mississippi, Florida, Louisiana, and Hawaii.

Bushel was the unit of measure used for reporting quantity harvested for all States except Arizona, California, and Alaska where the unit was hundredweight. Hundredweight was converted to bushels on the basis of 48 pounds per bushel.

Rye—A separate question for rye was included on the agriculture questionnaire for all States except Alabama, Arizona, Arkansas, California, Florida, Hawaii, Louisiana, Mississippi, and South Texas. Rye was to be reported in "other grains" for South Texas and these eight States. The unit of measure specified on the questionnaire was bushels for all States except Alaska, where hundredweight was specified. A considerable acreage of rye is used for grazing, plowed under for manure, or cut for hay. Green rye used for grazing was to be reported under "cropland pasture," but rye plowed under for soil improvement was reported as land in soil-improvement crops, if no crop was harvested from the land in 1964. Mixtures of rye and other grains were included as "mixed grains," while rye cut for hay was reported under "small grains cut for hay."

Flaxseed—A question for flaxseed was on the agriculture questionnaire in 1964 for seven States: North Dakota, South Dakota, Minnesota, Iowa, Wisconsin, Montana, and Arizona, plus North Texas. Flaxseed was included under "other grains" in all other States. The unit of measure was bushels in all States except Arizona where hundredweight was used.

Rice—The question on rice, providing information on acres harvested, quantity harvested, and quantity sold, appeared on the questionnaires for five States: Arkansas, Louisiana, Mississippi, California, and Hawaii, plus South Texas. The unit of measure was bushels in Mississippi and Arkansas; 162-pound barrels in Louisiana and South Texas; and 100-pound bags and hundredweight in California and Hawaii. A special tabulation was made to secure the acreage and quantity harvested for rice in Missouri.

Buckwheat—A separate question for buckwheat appeared on the agriculture questionnaire for seven States: Maine, New York, Pennsylvania, Ohio, Michigan, Wisconsin, and West Virginia. The unit of measure was bushels in all States.

Other grains—Separate questions were included on the agriculture questionnaire for all States except Hawaii to obtain data for the small grain crops for which a separate question did not appear on the agriculture questionnaire.

Table 34 lists the acreage, production, and sales of other small grains harvested for 1964 and 1959. The data for these 2 years, however, are not fully comparable, as the small grain crops included in the grouping "other grains" were not always the same for both censuses. Table 34 lists the small grains that are included in the figures for "other grains" as well as the small grain crops for which data are published separately.

Soybeans, cowpeas, peanuts—For soybeans, cowpeas, and peanuts, the acres and quantity grown or harvested for specific purposes was obtained for areas where those crops were grown extensively. Total acreage grown for each of these crops for all purposes was obtained by adding the acres for various purposes. For velvetbeans, only the total acreage grown for all purposes was obtained. The acreages of these crops plowed under for green manure were not to be included in cropland harvested but were to be included in land in soil-improvement crops. In 1959, the total acreage grown for all purposes includes some acreage used for soil-improvement purposes. Therefore, these data are not fully comparable with those for 1964. In 1964, as in earlier censuses, enumerators were instructed to report green soybeans and blackeyes and other green compeas harvested for sale as vegetables and not as field crops.

Soybeans—The agriculture questionnaire contained a separate question for soybeans for all except 19 States (six New England States, 13

Western States) and 78 counties in South Texas.

The separate questions on the questionnaire called for the acreage of soybeans for beans, soybeans for hay, and soybeans hogged or grazed or cut for silage in all 32 States except Nebraska, where only the question on soybeans for beans was asked.

Soybeans for beans were reported in bushels and soybeans cut for hay were reported in tons. The quantity of beans sold was not obtained but was estimated during office processing. The estimated quantities sold for soybeans were multiplied by the average prices per unit to obtain the value of sales.

Cowpeas—Separate questions for cowpeas were on the agriculture questionnaire in 12 southern and southwestern States where cowpeas are an important crop. The States were: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.

The questions were similar to those for soybeans. The acres of cowpeas harvested for fresh market, or for sale to canners, freezers, or other processors, were to be reported as vegetables harvested for sale. Cowpeas for dry peas were reported in bushels and cowpeas for hay were reported in tons.

Peanuts—A question on peanuts appeared on the agriculture questionnaire for the 11 most important peanut-producing States: Alabama, Florida, Georgia, Louisiana, Mississippi, New Mexico, North Carolina, Oklahoma, South Carolina, Texas, and Virginia. The questions asked for the reporting of acreage and quantity of peanuts for picking and threshing and for peanut vines or tops saved for hay. The acreage from which vines or tops are saved for hay is usually the same as that from which nuts are harvested. Separate questions were not included on the agriculture questionnaire for the acreage of peanuts hogged or grazed.

The quantity of peanuts sold was estimated on the basis of crop disposition data as reported by the Statistical Reporting Service of the U.S. Department of Agriculture. The estimated quantities of nuts were multiplied by the average price per unit to obtain the value of sales. Peanuts for nuts were reported in pounds, and peanut vines saved for hay were reported in tons.

Velvetbeans—The agriculture questionnaire included a separate question on velvetbeans for only five States: Alabama, Florida, Georgia, Mississippi, and South Carolina. The question included the acreage for all purposes and the quantity of velvetbeans harvested. The quantity of velvetbeans harvested was reported in bushels in all States except Florida where pounds were used.

Hay crops—Separate questions for one or more kinds of hay appeared on the questionnaire for each State. The acreage harvested, tons harvested, and tons sold were to be reported. Specific questions for each important kind of hay were included on the questionnaire for each State. For each State, the questionnaire had a single question for "All other hay."

For most States, separate questions were on the questionnaire for alfalfa and alfalfa mixtures for hay; clover, timothy, and mixtures of clover and grasses for hay; oats, wheat, barley, rye, or other small grains cut for hay; other hay; and grass silage made from grasses, alfalfa, clover, or small grains. Separate questions for Coastal Bermuda grass hay, lespedeza hay, and wild hay were not listed on the questionnaires for all States. (The composite questionnaire in the introduction to this volume indicates the kinds of hay that appeared on the questionnaire for each State.)

The data for all hay do not include the acreage, quantity harvested, or value of sorghum, soybean, cowpea, or peanut hay. These hays were reported separately and are published with the other data for these crops. The quantity of hay harvested was to be reported on a dry-weight basis. Grass silage was reported on a green-weight basis. If two or more cuttings of hay were made from the same acreage, the acres were to be counted only once, but the total production was to be reported from all cuttings.

Grass silage was defined as silage made from grasses, alfalfa, clover, or small grains, including silage made from crops cut from land used also for pasture. It did not include silage made from corn or sorghums. A separate question for grass silage was included on the questionnaire for each of the 50 States. A considerable proportion of grass silage was cut from the same acreage from which a hay crop was cut. If both hay and grass silage were cut from the same land, the acres from which the hay was cut and the acres from which grass silage was cut were counted for each crop.

Alfalfa hay for 1964 and 1959 includes the acreage and production of alfalfa used for hay and for dehydrating.

In Washington and Oregon, the questionnaire included a question on "vetch or peas, alone or mixed with oats or other grains, cut for hay."

The acreage, production, and quantity sold for this kind of hay are shown below:

State	Farms reporting	Acres	Quantity harvested	Quantity sold (tons)
Oregon.....	1,048	19,162	35,450	8,111
Washington.....	307	6,748	10,191	1,963

Table 35 of this chapter contains data on the total acreage of land from which hay was cut. Acres of sorghum, soybean, cowpea, and peanut hay are not included with this total. The table also shows the total quantity of hay harvested. This total includes the quantity harvested for grass silage converted to a dry-weight basis by multiplying tons of silage by 0.33.

In 1964, total land from which hay was cut was obtained by adding the acreage of the various hay crops including grass silage. The same procedure was followed in all prior censuses except in 1950, when the acreage of all hay land was obtained from the farm operator.

The value of hay crops was obtained by multiplying the State average price by tons harvested for each of the several kinds of hay. The value of all hay also includes the value of grass silage. The value of each kind of hay sold was computed by multiplying the State average price per ton by the tons sold for each kind of hay.

Field seed crops—The field seed crops for which a separate inquiry appeared on each version of the questionnaire were limited to those considered most important within each State. Each State questionnaire in the United States contained space for reporting other field seed crops in order to provide for the reporting of every field seed crop harvested. Quantity harvested was to be reported in pounds of clean seed for all field seed crops except orchardgrass seed, which was to be reported in bushels for Kentucky, and bluegrass and June grass seed were to be reported in pounds on a green-weight basis for Iowa and Minnesota.

Cotton—A separate question appeared for cotton on the agriculture questionnaire for 18 States where cotton was considered an important crop. The crop was to be reported in the "all other" questions for Illinois and Kansas. The questionnaire called for acreage harvested and the quantity harvested in number of bales of lint cotton.

The value of the cotton crop harvested and value of sales are identical and were computed by multiplying the number of bales by the State average price per bale. These values included the value of lint and also the value of the cotton seed.

Tobacco—The agriculture questionnaire included one or more questions for 16 leading tobacco-producing States. Respondents were asked to report area harvested in acres and tenths of an acre and quantity harvested for each type of tobacco listed on the questionnaire. In 10 States the crop was to be reported as "tobacco" regardless of type. There were separate questions for selected types of tobacco in six States: Binder and wrapper types in Massachusetts and Connecticut; flue-cured, burley, and other tobacco in Virginia; flue-cured and burley tobacco in North Carolina; and burley, dark fired, and dark air-cured tobacco in Kentucky and Tennessee.

Irish potatoes—The total quantity harvested was reported in all cases, whether harvested for home use or for sale. However, the acreage harvested was to be reported only when the quantity amounted to 10 or more hundredweight (or the approximate equivalent in terms of barrels, as specified on the Maine questionnaire). The procedure of not reporting acres or fractions of an acre when the quantity harvested was less than 10 hundredweight was designed to facilitate the reporting of potatoes harvested on small plots or in gardens for consumption on the farm. The same procedure was followed for the 1959, 1954, and 1950 censuses. In censuses prior to 1950, however, the acreage of Irish potatoes was to be reported in all cases, including cases where the quantity harvested was small and harvested for use on the farm. Therefore, the data on acres for censuses prior to 1950 are not fully comparable with those for the last four censuses, especially in States where production for home use make up a considerable proportion of the quantity harvested.

The unit of measure for reporting quantity harvested was hundredweight in 49 States. "Barrels" was used as the unit of measure for Maine (barrel equals 165 lb.). Quantities in this report are in hundredweight.

The quantities sold were estimated on the basis of crop disposition data supplied by the Statistical Reporting Service of the U.S. Department of Agriculture.

Sweetpotatoes—A separate question for sweetpotatoes appeared on the agriculture questionnaire for 26 States in which sweetpotatoes are an important crop. In the remaining States, sweetpotatoes were to be reported under "all other crops." The quantity harvested included

the amount harvested for home use, or for sale, and for use for livestock feed. The acreage harvested was to be reported when the quantity amounted to 20 or more bushels (10 or more if hundredweight was the specified reporting unit). In censuses prior to 1950, the acreage of sweetpotatoes was to be reported in all cases, even when the quantity harvested was small. Therefore, acres harvested for censuses prior to 1950 are not fully comparable with those of the last four censuses.

The unit of measure for reporting quantity harvested was bushels in all States except California and Hawaii where the unit was hundredweight.

Sugarcane—The 1964 agriculture questionnaire included a question on the acreage and quantity produced for sugarcane for sirup for the following six States: South Carolina, Georgia, Florida, Alabama, Mississippi, and Louisiana. The acreage of sugarcane for sirup was reported in acres and tenths of an acre. For Louisiana and Florida two additional questions on sugarcane were provided on the questionnaire—sugarcane for sugar and sugarcane for seed.

For Hawaii, the principal sugarcane-producing State, questions were provided for the "acres in sugarcane now" and the acres and tons of cane "harvested in 1964."

Popcorn—A separate question for popcorn appeared on the agriculture questionnaire for only eleven States: Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Missouri, Nebraska, Ohio, and Tennessee. In all other States, information concerning popcorn was obtained under the question for "all other crops." Data were obtained for whole acres and production in pounds of ear corn.

Minor and miscellaneous crops—The agriculture questionnaire provided space for reporting other field seed crops, other vegetables, and other miscellaneous crops.

Vegetables harvested for sale—The agriculture questionnaire contained questions asking for the whole acres and tenths of acres for each vegetable crop harvested for sale in 1964. Separate questions were provided for the most important vegetables for each State, and space was provided for writing in the names and acres of other vegetables harvested for sale. Vegetables harvested for sale included vegetables for market and vegetables for sale to canners, freezers, dehydraters, or other processors.

The total acreage of each vegetable crop harvested was to be reported. If two plantings of the same crop were harvested from a 3-acre field during 1964, the enumerator was instructed to report 6 acres as harvested. Likewise, if the same land was used for one or more vegetable crops followed by a field crop, the land was to be reported for both the vegetable crop and the field crop.

The value of vegetables sold was obtained for all the vegetables harvested for sale for each farm but not for each vegetable crop harvested.

The value represents the amount the farm operator received. If the vegetable crop was sold to a packer, processor, shipper, or other persons in the field or at the farm, the value reported represents the amount the producer received for the crop in the field, at the farm, etc.

Berries and small fruits—The question for berries and small fruits related only to the acreage harvested and quantity harvested for sale.

For all except the six New England States, only tame or cultivated berries were to be reported. The agriculture questionnaire for the New England States contained an inquiry regarding the acreages from which wild blueberries were harvested and the quantity harvested. Farm operators and enumerators were instructed to report total quantity of each kind of berry harvested for sale and to report the area harvested only when it amounted to one-tenth acre or more. The acres occupied by nonbearing plants and the small plots utilized for the production of berries or small fruits for use on the farm were to be excluded. The 1964 data are comparable to the 1959, 1954, and 1950 figures. Prior to 1950, the figures for acreage and quantity harvested included berries and small fruits for use on the farm as well as those for sale.

The units of measure for reporting berries and small fruits varied. Units of measure used were pounds, quarts, crates, and barrels. The data on quantity harvested for sale given in this report are given in pounds. Data for the various units of measure used in the States were converted into pounds using the best available information regarding conversion factors.

Tree fruits, nuts, grapes, and coffee—The questions on the agriculture questionnaire asked for the number of trees or vines not of

bearing age, the number of trees or vines of bearing age, and the quantity harvested for tree fruits, nuts, grapes, and coffee. The acres planted to individual tree fruits, nuts, and grapes were obtained only in California and Hawaii. The acreages for these States appear in county table 13, Volume I. There were separate questions on the agriculture questionnaire for the most important fruit and nut crops in each State. Fruit and nut crops for which the agriculture questionnaire did not have a separate question by name were reported under the question for "Other fruits and nuts." Data for these crops are included in the totals published in this chapter.

For 1964, as for 1959 and 1954, the acreage of land in farms and the number of trees or vines, quantity harvested, etc., for fruit trees, nut trees, grapevines, and coffee trees were not obtained for farms on which the total number of trees or grapevines was less than 20 at the time of enumeration. Both bearing and nonbearing trees and vines were to be included. For censuses prior to 1954, data were obtained for each farm with any fruit or nut trees or grapevines on the farm. For 1950, the area in fruit orchards, groves, vineyards, and planted nut trees was obtained only if the area on the farm equaled one-half acre or more. Because of these changes in method of reporting, the data for 1964, 1959, and 1954 are not fully comparable with those for earlier censuses. In commercial fruit-producing counties, the change in method of reporting may have affected the comparability of data for quantity harvested or the number of trees or vines. In counties where most of the trees or vines were in small plantings and where quantity harvested was largely for use on the farm, the changes in reporting procedures affected the comparability not only for data on the number of farms, but also in the number of trees and vines and in the quantity harvested for the censuses of 1950 to 1964 and prior censuses.

For some of the important States, the agriculture questionnaire contained separate questions for variety, or type groups for pears, cherries, plums and prunes, grapes, oranges, and pecans. For pears, the two groupings were Bartlett and other pears; for cherries, sweet cherries and sour cherries; and for plums and prunes, there were separate inquiries for plums and for prunes. There were three groups for grapes in California on the basis of variety, (1) table, (2) raisin, and (3) wine or juice grapes. Two groupings, wild or seedling and improved, were made for pecans. Improved pecans comprised the pecan trees that have been budded, grafted, or top worked. The classification for oranges was based on variety so that the groups varied for the leading orange-producing States.

The quantity harvested for tree fruits, nuts, grapes, and coffee was to be reported for the crop year, and in most cases for the crop year 1964. For citrus fruits, the agriculture questionnaire specified the quantity harvested in 1963-64 from the bloom of 1963. For olives, the questionnaire specified the quantity harvested from the bloom of 1963. (Farm operators and enumerators were asked to estimate the quantity of olives not harvested at the time of enumeration, but which would be harvested for oil in late 1964 or early 1965.) For coffee, the questionnaire for Hawaii specified the quantity harvested for the 1963-64 crop. For avocados, the quantity harvested for California relates to the quantity harvested from the bloom of 1963 during the marketing season October 1, 1963, to September 30, 1964, and for Florida to the quantity harvested during the marketing season from July 1, 1963, to March 1, 1964.

Horticultural specialty crops—Data were obtained for three separate groups of horticultural specialty crops as follows:

1. Nursery crops including trees, shrubs, vines, and ornamentals. The acreage includes the area used for growing such crops in 1964. From some of the acreage included, nursery crops were not sold in 1964. The value of sales represents, in most cases, the amount received by the farm operator. Some of the sales (at retail prices) may have been direct to consumers of nursery products when the place of sale was at the nursery, while other sales may have been to wholesalers for resale to consumers.

2. Cut flowers, potted plants, florist greens, and bedding plants for sale include, largely, products grown under glass protection, although such products grown in the open are also included. The acreage includes the area used in 1964 for the growing of such crops. The area for the products grown in the open was obtained in acres or fractions of acres, while the area used for growing products under glass or other protection was reported in square feet. The products may have been sold at either retail or wholesale prices. The value of sales represents the amount received by the farm operator regardless of the method of sale.

3. Vegetables grown under glass or other protection, flower seeds, vegetable seeds, vegetable plants, bulbs, and mushrooms include all of these products grown on places

qualifying as farms. The area and value of sales of vegetables grown under glass or other protection were included as horticultural specialty crops only and were not included under "vegetables grown for sale." If the area used for growing vegetables under glass was also used for growing cut flowers in 1964, the area was counted under cut flowers and again under vegetables grown under glass. Vegetable seeds do not include dry field beans, seed peas, lima bean seed, or sweet corn seed. The area used for growing includes not only the acreage in the open, but also the area under glass or other protection in hotbeds and coldframes and in mushroom houses. The value of sales represents the total receipts by the farm operator. The value of sales includes those sold by the producer at retail prices and also those sold at wholesale prices.

The questions on the agriculture questionnaire regarding horticultural specialty crops for Hawaii differed from those on the agriculture questionnaires for the other 49 States. The horticultural specialty crops in Hawaii are grown largely in the open. The questionnaire for Hawaii listed groups of flowers and flowering plants, the number of plants and/or flowers sold, and the value of sales for each of several important kinds of flowers and flowering plants.

Forest products—The statistics on forest products relate only to forest products cut on farms. Production of forest products from commercial forests is not included. Data for firewood and fuelwood, fence posts, sawlogs and veneer logs, and receipts from the sale of standing timber were obtained for all States. Figures for pulpwood, Christmas trees, and maple sirup were obtained only for the States in which the production of those products was relatively important. In 1964 data were collected on gum for naval stores in Georgia. (Data on gum for naval stores was specifically excluded on the 1959 agriculture questionnaire.)

Only the quantity of maple sirup produced was obtained from farm operators in 1959. In 1964, the quantity of maple sap sold was obtained as well as the quantity of maple sirup produced.

Acreage and production of principal crops—In 1964 more than 283 million acres of field crops other than vegetables, small fruits and berries, and fruit and nut crops were harvested. The total value of all field crops harvested was $18.4 billion. Field crops accounted for 84.5 percent of the value of all crops harvested in 1964. However, only 19 field crops accounted for as much as one-half of 1 percent of the total value of all field crops harvested and the value of production of these 19 field crops accounted for 97.4 percent of the value of all field crops harvested in 1964. The acreage of these 19 field crops represented 95.4 percent of the acreage of cropland harvested in 1964.

Crops	Percent of all farms	Acres harvested as a percent of cropland harvested	Total value of crop		
			Dollars (million)	Percent of value of all field crops harvested	Average per farm reporting (dollars)
All field crops	(NA)	95.4	18,369	100.0	(NA)
Corn for all purposes	49.0	22.1	4,636	25.2	2,996
Cotton	10.3	4.9	2,390	13.0	7,369
Soybeans for all purposes	(NA)	10.6	1,780	9.8	(NA)
Wheat	23.4	16.7	1,672	9.1	2,261
Alfalfa and alfalfa mixture cut for hay	28.3	9.8	1,654	9.0	1,851
Tobacco	10.5	0.4	1,168	6.4	3,526
Irish potatoes	9.8	0.4	761	4.1	2,454
Sorghums for all purposes	7.9	5.2	680	3.7	2,735
Oats for grain	22.4	6.6	510	2.8	721
Clover, timothy and mixtures of clover and grasses cut for hay	17.5	4.7	486	2.6	878
Rice	0.3	0.6	369	2.0	37,243
Barley for grain	5.7	3.4	338	1.8	1,894
Sugar beets for sugar	0.7	0.5	277	1.5	12,482
Peanuts for all purposes	(NA)	0.6	230	1.3	(NA)
Sugarcane for sugar	0.1	0.2	201	1.1	71,486
Other hay	8.7	2.2	197	1.1	717
Wild hay	5.4	3.6	166	0.9	978
Dry field and seed beans	0.9	0.5	136	0.7	5,020
Grass silage from grasses, alfalfa, clover or small grains	2.4	0.6	85	0.5	1,125

NA Not available.

The area of land used for crops has changed very little since 1919. The total acres of land used for crops has varied between 377 and 413 million acres for each of the censuses from 1919 to 1964. The acreage used for crops in 1964 and 1959 was about 5 percent less than

the acreage during the 1920's. Some new cropland has been added during the last 40 years by drainage, clearing, irrigation, or by the conversion of pastureland to cropland. The acreage of added cropland has offset the area withdrawn from use as cropland because of erosion, depletion of fertility, and conversion to pasture or other use. The added cropland is probably more productive than the land retired from use for crops, as part of it is in irrigated areas.

TABLE 3. **Acres of Selected Crops Harvested for the United States: 1899 to 1964**

Subject	1964	1959	1954	1949	1944	1939	1934	1929	1924	1919	1909	1899
	Million acres											
Land used for crops, total[1]	377	382	394	409	403	399	415	413	391	402	347	319
Cropland harvested	287	311	333	345	353	321	296	359	345	349	311	283
Land in summer fallow	37	31	29	26	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Land in soil improvement crops	29	16	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Crops harvested:												
Corn for grain	54	70	67	75	84	77	62	83	82	88	98	95
Wheat	48	50	51	71	58	51	42	62	51	73	44	53
All hay	65	64	70	67	73	61	63	68	75	71	68	62
Oats for grain	19	27	38	35	35	30	25	33	38	38	35	30
Soybeans	30	22	16	10	(NA)	4	(NA)	(NA)	(NA)	(2)	(2)	(NA)
Cotton	14	15	19	27	19	23	27	43	39	34	32	24
Sorghums for grain	11	15	11	6	9	5	2	4	4	4	2	(2)
Barley	10	14	13	9	12	12	6	13	7	6	8	4
Orchard fruits and grapes	4	4	4	5	5	5	6	6	(NA)	(NA)	(NA)	(NA)
Vegetables for sale	3	3	4	4	4	3	4	3	(NA)	1	1	(NA)
Dry field and seed peas	(2)	(2)	(2)	(2)	1	(2)	(NA)	(NA)	(NA)	1	1	1
Rye	2	1	1	1	2	4	2	3	4	8	2	2
Flaxseed	3	3	5	5	2	2	1	3	3	1	2	2
Rice	2	2	2	2	1	1	1	1	1	1	1	(2)
Irish potatoes	1	1	1	2	3	3	4	4	3	3	4	3
Cowpeas for peas	(2)	(2)	(2)	(2)	(NA)	2	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Peanuts for nuts	1	1	1	2	3	2	(NA)	(NA)	(NA)	1	1	1
Dry field and seed beans	1	1	1	2	2	2	(NA)	(NA)	(NA)	1	1	(2)
Tobacco	1	1	2	2	2	2	1	2	2	2	1	1
Sugarcane and sugar beets	2	1	1	1	1	1	1	1	1	1	(2)	(2)

NA Not available.
[1]Cropland harvested, land in summer fallow, land in soil improvement crops, crop failure and cropland idle.
[2]Less than 500,000.

The data in tables 3 and 4 show the change in acres harvested, production, and yield per acre for the crops having approximately 1 million or more acres harvested. The acres of cropland harvested for 1959 and 1964 were significantly smaller than for prior censuses partly because of government control programs.

Since 1920, the expansion in crop production and in the quantity of crops marketed, while the acreage used for crops remained almost unchanged has resulted from many factors. The substitution of tractor for animal power not only added to total production but had a significant effect upon the quantity of crops marketed. The shift of the production of fuel for farm power from hay and grain fields to oil fields, oil refineries, and electric generators, as 8 million farm tractors and trucks replaced 23 million horses and mules, released 60 to 70 million acres, once used to produce feed for horses and mules, for other uses. The use of tractors, trucks, and other machines have contributed to the increase in crop production by improving the precision and timing of various tilling, planting, and harvesting operations and by permitting farmers to take advantage of favorable weather conditions.

Crop production has increased tremendously since 1940, even though the area used for crops has remained relatively stable. Most of the increase of crop production has occurred in the last 10 years. The increase in crop production has resulted largely from increases in yield per acre although part of the increase has resulted from shifts in areas of production and from the change in the quality of land used for production.

There have been signicant increases in yield per acre of many crops since 1950. These increases have resulted from the development and adoption of an increasing number of new technologies. In addition to the use of improved varieties, increased use of fertilizers, increased use of irrigation, and increased specialization in production, there has been an increasing use of a large number of cultural practices and other yield raising technologies. These include improved plant breeding to increase or stabilize yields by protecting plants against insects and disease; contour cultivation, strip cropping, terracing, summer fallowing, reduced tillage, improved scheduling of the application of irrigation water according to time and quantity applied, and use of plastic and other mulches to conserve or control water usage; control of weeds through the use of chemicals; narrow row planting of crops such as grain sorghum; the significant increase in the number of plants per acre of row crops; the early planting, especially in arid and semi-arid areas, of crops and of quick maturing varieties so that the growing is completed before the drought part of the season; inoculations of seeds; the use of high quality seeds; the increased use of existing, new and improved insecticides and pesticides; the chemical

TABLE 4. Quantities of Selected Crops Harvested for the United States: 1899 to 1964

Year	Corn for grain (million bu.)	Wheat (million bu.)	All hay (million tons)	Oats for grain (million bu.)	Soybeans for beans (million bu.)	Cotton (million bales)	Sorghums for grain (million bu.)	Barley (million bu.)	Dry field and seed peas (million lb.)	Rye (million bu.)
1964	3,361	1,218	116	808	670	15	463	362	498	31
1959	3,697	1,056	107	1,001	516	14	508	398	499	22
1954	2,613	909	104	1,314	324	13	224	355	337	22
1949	2,778	1,007	89	1,137	212	15	141	221	313	17
1944	2,788	1,033	95	1,041	188	12	178	261	857	21
1939	2,311	709	74	870	88	11	52	261	228	36
1934	1,169	513	54	459	23	9	19	110	(NA)	16
1929	2,131	801	82	993	9	15	49	264	197	34
1924	1,824	801	88	1,305	(NA)	14	59	159	(NA)	56
1919	2,346	945	89	1,055	1	11	74	122	345	76
1909	2,552	683	87	1,007	(2)	11	18	173	428	30
1899	2,666	659	79	943	(NA)	10	5	120	566	26

Year	Flaxseed (million bu.)	Rice (million lb.)	Irish potatoes (million cwt.)	Cowpeas for peas (million bu.)	Peanuts (million lb.)	Dry field and seed beans (million lb.)	Tobacco (million lb.)	Sugarcane for sugar (million tons)	Sugar beets for sugar (million tons)
1964	22	7,482	222	1	2,004	1,766	1,988	25	23
1959	20	5,440	224	1	1,413	1,909	1,647	17	17
1954	35	6,528	204	1	885	1,713	1,922	7	14
1949	40	4,025	220	2	1,722	1,922	1,770	14	10
1944	21	2,927	214	4	2,009	1,565	1,779	5	7
1939	19	1,973	191	6	1,155	1,420	1,700	14	10
1934	6	1,483	242	6	Bu. [1]44	1,122	1,021	(NA)	7
1929	15	1,514	193	3	Bu. [1]37	1,221	1,457	10	7
1924	28	1,329	211	(NA)	Bu. (NA)	(NA)	1,106	(NA)	7
1919	7	1,619	174	(NA)	Bu. [1]27	845	1,372	(NA)	6
1909	20	1,025	234	(NA)	Bu. [1]19	675	1,056	(NA)	4
1899	20	439	164	(NA)	Bu. [1]12	304	868	(NA)	1

NA Not available. [1]Reported in million bushels. [2]Less than 500,000.

treatment of seeds of small grains, corn, sorghums, cotton, etc., to secure more uniform stand and growth; the improvement of the quality of many farm operations such as dusting, spraying, etc.; the taking out of production of land of less than average quality through acreage control programs; the large scale improvement in management practices; and the increased farm and geographical specialization in production.

Crop	Unit of measure	Yield per acre											
		1964	1959	1954	1949	1944	1939	1934	1929	1924	1919	1909	1899
Corn for grain	Bushel	62.5	52.8	39.1	37.0	33.1	29.9	18.8	25.6	22.2	26.7	25.9	28.1
Wheat	Bushel	25.4	21.3	17.7	14.1	17.7	14.0	12.2	12.9	15.7	12.9	15.4	12.5
All hay	Ton	1.77	1.68	1.48	1.32	1.29	1.21	0.86	1.21	1.18	1.25	1.28	1.28
Oats for grain	Bushel	42.7	37.7	34.7	32.2	29.4	29.1	18.7	29.7	34.7	27.8	28.6	31.9
Soybeans for beans	Bushel	22.4	23.4	19.7	20.9	(NA)	20.5	(NA)	(NA)	(NA)	9.6	10.6	(NA)
Cotton	Bale	1.06	0.95	0.69	0.58	0.62	0.50	0.35	0.34	0.35	0.34	0.33	0.39
Sorghums for grain	Bushel	41.4	34.9	19.8	22.3	19.6	11.2	7.8	13.9	16.6	19.8	10.8	19.4
Barley	Bushel	36.9	28.1	28.3	24.1	22.4	21.7	17.8	20.4	23.5	18.9	22.5	26.8
Dry field and seed peas	Pound	1,660	1,453	1,321	856	1,230	[1]17.7	(NA)	(NA)	(NA)	[1]6.6	[1]5.5	[1]7.7
Rye	Bushel	18.9	15.7	15.1	11.7	10.6	10.1	8.5	11.3	14.9	9.9	13.4	12.4
Flaxseed	Bushel	8.2	6.9	6.9	8.4	8.4	9.0	5.6	5.1	8.2	5.3	9.4	9.5
Rice	Pound	4,123	3,364	2,613	2,213	2,100	2,317	2,101	2,038	1,786	1,766	1,654	1,248
Irish potatoes	Hundredweight	189.0	186.7	168.6	145.1	84.3	72.2	67.6	49.0	72.7	53.6	63.6	55.8
Cowpeas for peas	Bushel	8.2	8.2	4.4	5.1	(NA)	3.1	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Peanuts	Pound	1,488	1,060	696	807	679	647	(NA)	(NA)	(NA)	[1]24.4	[1]22.3	[1]23.2
Dry field and seed beans	Pound	1,319	1,350	1,177	1,080	824	895	(NA)	(NA)	(NA)	727	841	1,116
Tobacco	Pound	1,939	1,486	1,234	1,155	1,091	917	826	771	719	737	815	788
Sugar beets for sugar	Ton	16.9	18.4	15.8	15.0	12.5	11.9	9.8	11.1	9.4	9.4	10.8	7.2
Sugarcane for sugar	Ton	38.3	40.6	23.4	33.2	18.8	36.2	(NA)	30.7	(NA)	(NA)	(NA)	(NA)

NA Not available. [1]Yield reported in bushels.

The use of improved varieties of crops has made important contributions to the expansion of crop production. The use of hybrid seed corn has been a significant factor in increasing the production of the most important crops in the United States. In some cases, improvements in crop varieties have resulted from the development of varieties particularly suited to the climatic and soil conditions in a specific area, for example, Gaines wheat in the Pacific Northwest and Monon wheat in the North Central States.

The increased use of fertilizer has been a major factor in increasing crop production. From 1940 to 1964, the total tonnage of fertilizers increased almost fourfold, and the use of primary nutrients increased almost sevenfold. From 1959 to 1964, the amount of fertilizer increased more than 20 percent, and the consumption of primary plant nutrients increased more than 40 percent.

The increasing use of irrigation has had a significant effect upon crop production, especially in the West. The acreage of crops harvested from irrigated land was twice as large in 1964 as in 1929. The 1964 acreage of irrigated cropland harvested represented 11 percent of all cropland harvested. In the 17

Western States and Hawaii, irrigated cropland harvested represented 49 percent of the acreage of all cropland harvested. All or a large part of several crops—rice, sugar beets for sugar, sugarcane for sugar, hops, citrus fruits, vegetables harvested for sale—comes from irrigated land.

Year	All land irrigated (million acres)	Irrigated cropland harvested (million acres)
1964	37.1	30.7
1959	33.1	26.3
1954	29.6	23.3
1949	25.9	[1]21.1
1939	18.0	[1]15.2
1929	[1]19.5	[1]14.6

[1]Data are for 17 conterminous Western States plus Arkansas, Louisiana, and Florida.

Increasing concentration of the production of most crops on fewer, larger, and more specialized farms has contributed to the increasing production. Farm operators with the larger acreage of crops are not only more skilled farm managers, but they are also able to use better adapted and larger machinery, perform farm operations in a more timely manner, and adopt new technology earlier than other farm operators. There has been a large scale reduction in the number of farms harvesting most crops. This reduction has resulted in the decline in the number of farms harvesting less than 25 acres. The number of farms harvesting 100 acres or more of each crop has increased significantly during the last 10 years, and the proportion of the total acreage harvested on these farms comprises a significant part of the total acreage harvested in all farms in 1964.

Crop	Farms harvesting crop (1,000)			Farms harvesting less than 15 acres (1,000)			Farms harvesting 100 acres or more (1,000)			Percent of acreage harvested by farms with 100 acres or more, 1964
	1964	1959	1954[1]	1964	1959	1954[1]	1964	1959	1954[1]	
Corn for all purposes	1,547	2,144	2,855	[2]727	[2]1,091	[3]1,546	167	206	135	10.8
Sorghums for all purposes	249	329	366	[2]87	[2]141	[3]188	42	49	46	17.1
Soybeans for beans	558	500	599	145	[4]225	[4]361	68	46	27	12.1
Peanuts for nuts	60	85	118	36	70	107	2	1	1	3.8
All wheat	728	715	(NA)	244	309	(NA)	125	66	(NA)	17.2
Rye	59	67	90	29	41	[4]75	3	2	2	5.1
Oats for grain	708	1,027	1,418	289	416	[4]868	24	24	43	3.4
Barley	179	290	323	64	121	[4]202	26	37	29	14.3
Alfalfa and alfalfa mixtures cut for hay and for dehydrating	893	970	1,146	321	409	[4]803	41	31	28	4.6
Clover, timothy, and mixtures of clover and grasses cut for hay	554	641	862	256	318	[4]638	15	12	11	2.7
Lespedeza, cut for hay	170	248	317	116	185	[4]289	1	1	2	0.7
Oats, wheat, barley, rye, or other small grains cut for hay	174	211	421	119	152	[4]378	3	5	4	1.9
Wild hay cut	170	188	231	65	79	[4]137	24	23	28	14.1
Other hay cut	263	246	339	150	156	[4]283	10	7	6	3.7
Grass silage made from grasses, alfalfa clover, or small grains	75	68	78	35	43	[4]65	2	1	1	2.8
Sugarbeets for sugar	22	24	24	2	6	[4]14	3	1	1	13.5

NA Not available.
[1]Data for Alaska and Hawaii not included.
[2]Less than 20 acres.
[3]1 to 15 acres.
[4]Less than 25 acres.

Corn—Corn is the most important crop of the United States in acreage, except for hay of all types. The value of the corn crop was equal to 25 percent of all field crops in 1964. Its acreage in 1964 was equal to 22 percent of the acreage from which all crops were harvested. It was grown in almost every State. It was more widely distributed than most other field crops. Part of the crop is marketed as a cash grain, but 46.2 percent of the crop harvested for grain was fed to livestock on the farm on which it was produced. The importance of corn has resulted in its name being used to describe the Corn Belt agricultural region, the most important agricultural producing area in the United States.

The nine Corn Belt States of Iowa, Illinois, Minnesota, Indiana, Nebraska, Ohio, Missouri, Wisconsin, and South Dakota comprise the center of corn production in the United States. Over 72 percent of the corn acreage and 75 percent of the corn production in 1964 were in these States. The dominance of corn in the Corn Belt is indicated by the fact that corn acreage represented 36 percent of cropland harvested in this nine-State area.

Approximately 13 percent of the corn acreage in 1964 was used for silage. Most of the corn silage was in the States bordering on the Great Lakes and in the Northeast. The largest acreage in any State was 1.2 million acres in Minnesota. Wisconsin and South Dakota each

had nearly 1.0 million acres of corn for silage. Nearly half of the corn grown in the Northeast was for silage. Over 94 percent of the corn in the New England States and over 43 percent in New York and Pennsylvania was cut for silage.

The number of farms harvesting corn has been declining. Only 35 percent as many farms grew corn in 1964 as in 1939. There was a decrease of 46 percent in the number of farms growing corn from 1954 to 1964.

Year	Farms growing corn (1,000)
1964	1,547
1959	2,144
1954	2,844
1949	3,404
1944	3,923
1939	4,456
1934	4,850
1929	4,598
1924	4,760

Most of the decline in the number of farms harvesting corn has been the result of the discontinuance of corn production on farms with small acreages of corn.

Farms with acres of corn harvested of—	Number of farms harvesting corn (1,000)		
	1964	1959	1954
Total, all farms	1,547	2,144	2,855
Less than 20 acres	727	1,091	1,678
20 to 49 acres	393	512	675
50 to 74 acres	166	214	250
75 to 99 acres	94	121	117
100 to 149 acres	97	126	93
150 to 199 acres	36	44	25
200 acres or more	34	37	17

The 70,000 farms with 150 acres or more harvested in 1964 had one-fourth of the acreage of corn harvested. Of these 70,000 farms, 62,500 were in the East and West North Central geographic divisions.

The acreage of corn in 1964 was less than for any other census since 1929. It was 20 percent less than the acreage in 1959 and 19 percent less than the acreage in 1954.

Year	Acres of corn for all purposes (million)
1964	64
1959	80
1954	78
1949	83
1944	92
1939	87
1934	87
1929	98

While the acreage of corn harvested for grain has been declining, the production has been increasing because of increases in yield per acre.

Year	Corn for grain		
	Acres harvested (million)	Bushels harvested (million)	Yield per acre (bushels)
1964	54	3,361	63
1959	70	3,697	53
1954	67	2,613	39
1949	75	2,778	37
1944	84	2,788	33
1939	77	2,311	30
1934	62	1,169	19
1929	83	2,131	26
1924	82	1,824	22
1919	88	2,346	27
1909	98	2,552	26
1899	95	2,666	28

The yield per acre of corn increased very little from 1899 to 1939. However, since 1939 the yield for corn has more than doubled. A substantial part of the increase occurred during the last 10 years.

The significant increase in corn yields has resulted from the use of hybrid seed, increased use of fertilizers and lime, mechanization, the adoption of relatively new technologies such as greater plant density per acre, minimum tillage, and chemical weed control, the improvement in the quality of land used for corn, and the general increase in the managerial abilities of farmers growing corn. The percentage of the corn acreage fertilized increased from 60 percent in 1954 to 80 percent in 1964. However, the rate of fertilizer application, especially liquid fertilizer (largely nitrogen fertilizers) has increased substantially.

Subject	Fertilizer used (pounds per acre)		
	1964	1959	1954
Total	308	265	259
Dry materials	253	240	(NA)
Liquid materials	55	25	(NA)

NA Not available.

In 1964, approximately 47 percent of the acreage of corn in the East and West North Central States was treated with herbicides.

The acreage of corn cut for silage has been increasing. The 1964 acreage was almost double that for 1939. The yield of silage per acre in 1944 was approximately 25 percent greater than for the period 1929 to 1949.

Cotton—On the basis of value, cotton is the second most important field crop in the United States. In 1964, the cotton crop accounted for 13 percent of the value of all field crops harvested, although its acreage was equivalent to only 4.9 percent of cropland harvested.

Cotton was produced on 10.3 percent of the Nation's farms. Of the 324,000 farms producing cotton, 306,000 were in the South and 11,000 in the West. Four States—Texas, Mississippi, California, and Arkansas—accounted for 64 percent of the 1964 production.

Tremendous changes have occurred in the number of farms growing cotton, in acreage, in yield per acre, and in the geographical location of cotton production during the last few decades.

In 1964, less than half as many farms were producing cotton as in 1954. In 25 years the number of cotton-producing farms decreased from almost 2,000,000 to 324,000.

Year	Farms growing cotton (1,000)
1964.....	324
1959.....	510
1954.....	864
1949.....	1,111
1944.....	1,218
1939.....	1,590
1934.....	1,920
1929.....	1,987

The decline in the number of farms growing cotton has resulted from the almost complete disappearance during the last 35 years of three-quarters of a million cropper farms in the South, the replacement of animal power and hand methods of production by tractors and machinery, the shift of production to the drier and irrigated areas, and to acreage control programs.

The acreage of cotton has been declining. The 13.9 million acres harvested in 1964 was the smallest reported for any census since 1879. However, the production of cotton has not declined. The maintenance of the level of cotton production has resulted from significant increases in yield per acre.

Year	Acres of cotton harvested (million)	Bales harvested (million)	Yield per acre (bales)
1964.....	13.9	14.7	1.06
1959.....	14.6	13.9	.95
1954.....	18.9	12.9	.69
1949.....	26.6	15.4	.58
1944.....	19.0	11.8	.62
1939.....	22.8	11.5	.50
1934.....	26.8	9.5	.35
1929.....	43.2	14.6	.34
1924.....	39.2	13.7	.35
1919.....	33.7	11.4	.34
1909.....	32.0	10.6	.33
1899.....	24.3	9.5	.39

The yield per acre in 1964 was more than twice that of 1939. As much cotton was produced on 13.9 million acres in 1964 as on three times as large an acreage in 1929. The substantial increase in the yield per acre of cotton during the last 25 years has resulted from greater use of fertilizers, the shift of production to irrigated land, the use of pesticides and insecticides, the improved methods of production arising from the use of power equipment, change in row spacings, the improvement in the management ability of farmers growing cotton, and in the use of better quality land for cotton production.

In 1964, 77 percentage of the acreage of cotton was fertilized. This compares with 63 percent for 1959 and 56 percent for 1954. The rate of application of fertilizer per acre has also increased.

Subject	Pounds of fertilizer applied per acre		
	1964	1959	1954
Total.....	390	383	374
Dry materials.....	317	334	(NA)
Liquid materials.....	73	49	(NA)

NA Not available.

In 1964, 60 percent of the acreage of cotton was treated for the control of insects and disease and 29 percent was treated with herbicides for the control of weeds, etc.

The geographical location of cotton production has changed during the last few decades. An increasing part of the production has come from the irrigated areas in Texas and the West and from the States in the Mississippi River Delta.

Year	Cotton production (million bales)					Yield per acre (acres)				
	All States	The West	Texas and Okla.	Miss, Ark, La. and Mo.	All other States	All States	The West	Texas and Okla.	Miss, Ark, La. and Mo.	All other States
1964...	14.7	2.8	4.2	4.7	3.1	1.06	2.11	0.68	1.32	1.08
1959...	13.9	2.8	4.5	4.0	2.6	0.95	2.03	0.67	1.10	0.89
1954...	12.9	2.6	3.8	3.8	2.7	0.69	1.71	0.45	0.80	0.65
1949...	15.4	2.0	6.1	4.2	3.1	0.58	1.33	0.52	0.61	0.48
1944...	11.8	0.6	3.2	4.2	3.9	0.62	1.11	0.39	0.80	0.76
1939...	11.5	0.7	3.2	4.0	3.5	0.50	1.25	0.33	0.67	0.54
1934...	9.5	0.5	2.6	2.7	3.7	0.35	1.03	0.21	0.43	0.50
1929...	14.6	0.5	4.9	4.3	4.9	0.34	0.76	0.23	0.44	0.41

The proportion of the cotton acreage irrigated has been increasing. In 1964, the irrigated acreage represented 27 percent of the acreage harvested, the corresponding percentage for 1959 was 22 and for 1954, 16.

Increasing cotton production is becoming concentrated on large cotton-producing farms. In 1964, farms producing 200 or more bales accounted for the production of 48 percent of the cotton crop.

Farms with bales of cotton harvested of—	Number of farms			Bales of cotton harvested (million bales)		
	1964	1959	1954	1964	1959	1954
Total, all farms	324,311	508,419	863,016	14.7	13.9	12.9
Less than 20 bales.	201,676	382,762	824,673	1.6	2.6	(NA)
20 to 49 bales.....	63,608	72,552		1.9	2.1	(NA)
50 to 99 bales.....	27,212	26,459	20,440	1.9	1.8	(NA)
100 to 199 bales...	17,329	15,440	16,120	2.4	2.1	(NA)
200 to 499 bales...	10,825	8,641		3.2	2.5	(NA)
500 to 999 bales...	2,609	1,821	1,236	1.7	1.2	(NA)
1,000 bales or more	1,052	744	547	2.1	1.5	(NA)

NA Not available.

The third leading crop in 1964 on the basis of value or production was soybeans. The acreage of soybeans harvested for all purposes was equal to 10.6 percent of the acreage from which crops were harvested in 1964. Of the acres of soybeans harvested for all purposes, over 98 percent were harvested for beans. In 1964 as in 1959, over 80 percent of the soybean production was concentrated in an eight-State area in the North Central region and the Upper Mississippi River Delta. These States were: Illinois, Iowa, Minnesota, Indiana, Missouri, Ohio, Arkansas, and Mississippi.

Soybeans are a relatively new crop, with the acreage harvested increasing over 4½ times since 1934. The 30.4 million acres harvested for all purposes in 1964 were 30 percent greater than the acreage harvested in 1959 and nearly 70 percent greater than the acreage harvested in 1954. Over three-fourths of the increase in soybean acreage between 1959 and 1964 occurred in the eight important soybean-producing States. The increase in soybean production has resulted largely from increases in acreage as yield per acre has increased only slightly during the last 25 years.

Wheat—Wheat is the principal food grain in the United States and the fourth most important crop on the basis of the value of production. It's acreage represented 17 percent of the acreage of cropland harvested in 1964. Most of the land in summer fallow is used also for wheat, and if the acreage for summer fallow is added to the acreage of wheat harvested, then the area used for wheat in 1964 totaled 85 million acres and represented 23 percent of the land used for crops.

More than two-thirds of the wheat acreage in 1964 was in the six States stretching from Texas north to North Dakota plus Montana and Colorado. Farm operators in these eight States harvested 33 million acres and 607 million bushels in 1964. In these eight States, there were approximately 31 million acres fallow, waiting for the next year's crop. In Kansas and southward, the wheat is fall sown and this area represents the major winter wheat-producing area of the United States. North of Kansas, the severity of the winter requires that most of the acreage be spring sown and this area comprises the spring wheat region. The States of Montana, North Dakota, South Dakota, and Minnesota are largely in the spring wheat region. These four States harvested 13 million acres and 292 million bushels of wheat in 1964, and 77 percent of the crop was spring wheat.

The third most important wheat-producing area lies in the Columbia plateau of Washington, Oregon, and Idaho. These three States had 3.9 million acres harvested in 1964 and produced 12 percent of the Nation's wheat crop. In the western part of this area part of the wheatland is in summer fallow. In part of the area, edible peas are an important crop that take the place of fallow in the wheat rotation. Wheat production in this area has increased significantly during the last 10 years as a result of the development and use of new high-yielding varieties and increased use of fertilizer. The average yield per acre in the three States in 1964 was 38.4 bushels per acre compared with the average of 25.4 bushels for all areas.

A considerable acreage of wheat is grown east of the Great Plain States. In this area wheat is a cash-grain crop which has been fitted into the crop rotation system, because it reduces soil erosion, equalizes the seasonable distribution of farm labor, etc.

There have been significant changes in the number of farms growing wheat, in acreage, and in yield per acre. Only 79 percent as many farms produced wheat in 1964 as in 1959 and the 48.0 million acres harvested in 1964 was less than that for any census year since 1909 except for the drought year of 1934.

Year	Farms growing wheat (1,000)	Acres harvested (million)	Bushels harvested (million)	Yield per acre (bushels)
1964.....	740	48	1,218	25.4
1959.....	931	50	1,056	21.3
1954.....	(NA)	51	909	17.7
1949.....	1,148	71	1,007	14.1
1944.....	(NA)	58	1,033	17.7
1939.....	1,386	51	709	14.0
1934.....	1,364	42	513	12.2
1929.....	1,208	62	801	12.9
1924.....	(NA)	51	801	15.7
1919.....	2,225	73	945	12.9
1909.....	1,459	44	683	15.4

NA Not available.

The trend in the acreage of wheat harvested was upward from 1909 to 1949. For 1954 and the subsequent census years, the reduction in wheat acreage was largely the result of acreage allotment and other control programs.

There has been a significant increase in wheat yields during the last two decades. The

use of improved varieties, the increased use of summer fallow, increased use of fertilizer, increase in the acreage of wheat irrigated, mechanization, the use of better quality of land for wheat production, improvement in the management ability of farmers producing wheat, and the use of improved cultural practices, including the use of herbicides, have contributed to the increase in yield per acre and the increase in total production, notwithstanding a decrease of approximately 20 million in the harvested acreage.

In 1964, approximately 54 percent of the acreage of wheat was fertilized; for 1959, the percentage was 42; for 1954, 29 percent.

Subject	Pounds of fertilizer applied per acre		
	1964	1959	1954
Total	148	161	191
Dry materials	130	148	(NA)
Liquid materials	18	13	(NA)

NA Not available.

In 1964, the land in summer fallow in the 17 conterminous Western States totaled 37 million acres, compared with 26 million acres in 1949. The percentage that fallow land was of the acreage of wheat harvested in the 17 conterminous Western States was:

Year	Percent
1964	99
1959	78
1954	69

Approximately 2 million acres of wheat were harvested from irrigated land in 1964. This compares with 1.3 million acres in 1959 and 0.9 million acres in 1954.

With the decline in the number of farms growing wheat, the production of wheat has become more and more concentrated on the larger farms. Farms with 1,000 acres or more of land accounted for 39 percent of the wheat production in 1964.

Size of farm (acres in farm)	Farms producing wheat (1,000)	Acres harvested (million)	Bushels harvested (million)
Under 500 acres	555	15.3	442
500 to 699 acres	61	5.5	143
700 to 999 acres	49	6.7	163
1,000 acres or more	74	20.4	470

Hay—A larger acreage is used for hay crops than for any other crop. Since 1900, except for the drought year, 1934, the acreage of hay crops harvested has varied from 61 to 75 million acres and has been equivalent to 19 to 23 percent of the acreage of cropland harvested. The production of hay has been increasing, particularly since 1949. The increase in production has resulted largely from the increase in the relative importance of alfalfa hay, which has yields almost double the yields for all other hay crops.

Year	Yield per acre (tons)		Proportion of the production of all hay represented by alfalfa hay
	Alfalfa	All other hay crops	
1964	2.42	1.28	.59
1959	2.29	1.25	.56
1954	2.11	1.11	.53
1949	2.15	1.05	.40
1944	2.18	1.07	.34
1939	2.00	1.00	.35
1934	1.61	0.69	.35
1929	2.04	1.05	.29
1919	2.19	1.12	.21
1909	2.52	1.19	.14
1899	2.49	1.24	.07

Alfalfa, which is the most important hay crop on the basis of value, is the fifth most important field crop in the United States. Alfalfa made up over 40 percent of the acreage of all hay harvested in 1964. The proportion of the total acreage of hay represented by alfalfa was over twice as large in 1964 as in 1944. Alfalfa has accounted for a steadily increasing part of total hay acreage since 1944. The data in the following table indicate the change in the relative importance of the acreage of various kinds of hay since 1939.

Year	Percent of land from which hay was cut represented by acreage in—					
	Alfalfa (and alfalfa mixtures) hay	Clover and/or timothy hay	Lespedeza hay	Small grain hay	Wild hay	All other hay
1964	43.2	20.5	3.6	4.3	15.9	12.5
1959	41.1	22.1	4.9	5.6	16.5	9.8
1954	37.2	24.2	4.7	6.7	17.8	9.4
1949	24.2	27.4	10.2	7.2	21.1	9.9
1944	20.4	30.8	8.1	7.8	21.2	11.7
1939	20.9	28.2	7.7	9.9	19.5	13.8

The number of farms reporting alfalfa hay harvested declined about 8 percent between 1959 and 1964. This decrease was nearly all accounted for by the decrease in farms reporting less than 25 acres harvested. In 1964, over one-half of the alfalfa acreage was on farms with 50 acres or more harvested.

Clover, timothy, and mixtures of clover and grasses cut for hay were the tenth most important field crop harvested in 1964. Clover and timothy hay has been declining in importance since World War II. Since 1944 the number of farms reporting clover and timothy hay has decreased 55 percent, the acreage has

decreased 41 percent, and the production has decreased 36 percent. The production of clover and timothy hay was concentrated in the Middle Atlantic and North Central States with the six leading States in 1964 being New York, Missouri, Pennsylvania, Iowa, Ohio, and Wisconsin. These six States had over 45 percent of all clover and timothy hay harvested in 1964.

Other hay was the sixteenth most important field crop, based on value, and the third most important hay crop. The acreage of other hay represented 2.1 percent of the acreage of cropland harvested and 12.5 percent of the acreage from which any hay was cut. While other hay was distributed throughout the United States, it was concentrated in the West North Central and West South Central regions. In these two areas the nine States of Missouri, North Dakota, South Dakota, Nebraska, Kansas, Arkansas, Louisiana, Oklahoma, and Texas had 52 percent of the 6 million acres of other hay harvested in 1964. These nine States also had 45 percent of farms reporting other hay.

Wild hay was the seventeenth most important field crop and the fourth most important hay crop in 1964. The value of wild hay produced was 0.9 percent of the value of all field crops, but its acreage amounted to 3.6 percent of the acreage of all cropland harvested. Wild hay production is centered in the West North Central States, with the four States of North Dakota, South Dakota, Nebraska, and Kansas having 67 percent of the total acreage and 53 percent of the total farms reporting wild hay. Wild hay acreage accounted for 16 percent of the total acreage of all hay harvested. Both the acreage and production of wild hay have been declining. The 1964 acreage was 33 percent less than that of 1944 and was only 60 percent of the acreage cut in 1909.

On the basis of value, tobacco was the sixth most important field crop in 1964. It was grown in 15 States and its acreage was equivalent to only 0.4 percent of all cropland harvested, but its value represented 6.4 percent of the value of all crops produced.

Because of the influence of climate and soil on the properties of the leaf, tobacco production is highly localized. Flue-cured tobacco was produced in North Carolina, South Carolina, Virginia, and Georgia; dark fire-cured and dark air-cured, in Kentucky and Tennessee; burley, in Virginia, North Carolina, Kentucky, and Tennessee; Maryland type, in Maryland; and cigar type, in Pennsylvania, Wisconsin, Florida, Georgia, Massachusetts, and Connecticut.

Tobacco acreage was 7.5 percent less in 1964 than 1959, and the 1964 average was the smallest recorded by any census since 1889. The continuing decrease in acres was due principally to the government acreage control programs. The number of farms producing tobacco declined over 20 percent between 1959 and 1964 and while farms and acreage were decreasing, production has been increasing to about 2 billion pounds. While the 1964 acreage was less than two-thirds of the acreage in the 1920's, the 1964 production was 50 percent greater than the average for the 1924 and 1929 crops. The 1964 yield per acre was also a new census record of 1,939 pounds per acre. This exceeded the previous census high reported for 1959 by over 30 percent. The record 1964 production was the result of increased use of fertilizer, improved varieties, use of irrigation, use of better quality land for producing tobacco, and improvements in the management skills of farmers growing tobacco.

In 1964, 16.8 percent of the acreage for tobacco was irrigated. This compares with 2.1 percent for 1954. Almost all the tobacco acreage has been fertilized at each of the last three censuses. However, the average amount of fertilizer applied has increased significantly.

Year	Pounds of fertilizer per acre
1964	1,816
1959	1,602
1954	1,347

The acreage used on individual farms for producing tobacco is very small. One-fourth of the farms harvesting tobacco have less than one acre and 80 percent have less than 5 acres.

Acres harvested	Farms producing tobacco	
	Number (1,000)	Percent distribution
Total	330	100
Under .05 acre	23	7
0.5 to 0.9 acre	71	22
1.0 to 2.4 acres	99	30
2.5 to 4.9 acres	74	22
5.0 to 9.9 acres	47	14
10.0 acres or more	15	5

Irish potatoes—Irish potatoes, the seventh most important field crop, accounted for 4.1 percent of the value of all crops harvested, even though the acreage harvested represented only 0.4 percent of all cropland harvested.

Potatoes are produced in every State. Because of their bulkiness and resulting high cost of transportation, production for many years tended to be located near consuming

centers. Greater specialization, new processing methods, and the use of power-type equipment for efficient farm operations have resulted in the production of potatoes becoming a large-scale specialized farm enterprise, and with improved methods of storing and marketing, potato production has become concentrated in specialized potato-producing areas. Maine, Idaho, and the Red River Valley in North Dakota and Minnesota produced 42 percent of the 1964 crop.

Significant changes in potato production during the last 40 years have included a very large reduction in the number of farms producing potatoes and in the acreage of potatoes, an increase in yield per acre, and the concentration of potato production in specialized producing areas and on specialized potato farms. Irish potatoes were harvested on only one-tenth as many farms in 1964 as in 1934, and the 1964 acreage was only one-third of that for 1934, but the quantity harvested in 1964 was almost equal to 90 percent of that for 1934.

The production of Irish potatoes for each census since 1929 has exceeded 190 million hundredweight, but the acreage has been declining. The discontinuance of potato production on 2.6 million farms producing small amounts, the use of improved seeds and cultural practices, increased use of fertilizer and irrigation, the concentration of potato production in the better potato-producing areas, and the increasing concentration of production on specialized potato farms have made possible the production of 190 to 240 million hundredweight of potatoes by fewer farmers on fewer acres.

Year	Farms (1,000)	Acres harvested (1,000)	Quantity harvested	
			Total (million hundredweight)	Yield per acre (hundredweight)
1964	310	1,174	222	189
1959	685	1,200	224	187
1954	1,432	1,211	204	169
1949	1,650	1,515	220	145
1944[1]	2,065	2,537	214	84
1939	2,632	2,645	191	72
1934[1]	3,102	3,582	242	68
1929	2,983	3,945	193	49
1924[1]	2,324	2,911	211	73
1919	2,888	3,253	174	54

[1]Data for Alaska and Hawaii not included.

The concentration of the production of Irish potatoes on a relatively small number of large-scale potato farms has been increasing. In 1964, 81 percent of the potato crop was produced on 6,500 farms.

Acres harvested	Farms (1,000)			Acres harvested (1,000)			Hundredweight harvested (million)		
	1964	1959	1954[1]	1964	1959	1954[1]	1964	1959	1954[1]
All farms	310	685	1,432	1,174	1,200	1,211	222	224	204
Farms with less than 10 hundredweight harvested	237	484	1,138	-	-	-	1	2	6
0.1 to 0.9 acre	45	152	210	13	38	65	1	3	5
1.0 to 2.9 acres	9	22	45	12	27	56	1	2	3
3.0 to 9.9 acres	4	8	15	22	41	79	3	6	10
10.0 to 24.9 acres	4	8	12	68	121	189	11	22	32
25.0 to 49.9 acres	4	6	7	133	206	230	25	40	40
50.0 acres or more	7	6	6	925	768	593	179	148	108

[1]Data for Alaska and Hawaii not included.

Irish potato production has become increasingly concentrated in a few areas with suitable soil, climate, and other conditions favorable to potato production. In 1964, 42 percent of the potato crop was produced in Idaho, Maine, and the Red River Valley in Minnesota and North Dakota. In 1939, only 17 percent of the potato crop was produced in these areas.

All of the commercial acreage used for Irish potatoes in 1964 was fertilized, and the average rate of application exceeded 1,000 pounds of fertilizer per acre. Approximately 52 percent of the acreage of Irish potatoes harvested in 1964 was irrigated.

Sorghums—Sorghum crops ranked eighth among field crops on the basis of the value of production in 1964. Most of the sorghum acreage is used to produce grain, silage, or forage. Only a small part of the acreage is used to produce sirup.

The production of sorghums is concentrated in the southern part of the Great Plains; the States of Kansas, Oklahoma, and Texas accounted for more than two-thirds of the acreage in 1964.

The acreage of sorghums has been increasing. The 1964 acreage was less than 1959 acreage because of the acreage control under the Feed Grain Program and crop failure. In 1964, the distribution of the acreage harvested by purpose was as follows: grain, 75 percent; silage. 7.7 percent; hay, forage, or grazing, 17.2 percent; and for sirup, 0.1 percent. Sorghums for sirup are grown largely in the Southern States. The number of farms producing, acreage, and production for sorghums for sirup

have been declining rapidly. In 1964 there were 200,000 less farms producing sorghums for sirup and 164,000 fewer acres in 1964 than in 1934.

There has been a significant increase in yield percent by sorghum for grain or for seed during the last 10 years. The improvement in varieties, the increased density of planting, the increased use of fertilizer, and irrigation have contributed to the increase in yield. The acreage for the sorghums in Kansas, Texas, and Oklahoma, harvested from irrigated land, increased from 466,000 acres in 1949 to 2,358,000 acres in 1964. In 1964, the average yield of sorghum for grain from irrigated land in these three States was 3,815 pounds compared with 1,574 pounds per acre for sorghum harvested from non-irrigated land. In these three States, 46 percent of the acreage was fertilized in 1964.

Oats for grain—Oats for grain ranked ninth among field crops on the basis of the value of production in 1964. The acreage of oats for grain was equivalent to 6.6 percent for the acreage from which crops were harvested in 1964.

Oats for grain were grown mainly in the Corn Belt. More than 80 percent of the acreage harvested in 1964 was in the East and West North Central States, and five States—Minnesota, Iowa, Wisconsin, North Dakota, and South Dakota—produced over three-fifths of the 1964 crop. The number of farms producing oats, acreage, and production have been declining. Only half as many farms harvested oats in 1964 as in 1954, and the 1964 acreage was only half that 10 years earlier. The 1964 production was only 62 percent of that for 1954.

Rice—Rice ranks eleventh among field crops on the basis of value of production. Its acreage represented 0.6 percent of the acreage for cropland harvested and 5.9 percent of the acreage of irrigated cropland harvested in 1964. Rice is produced in five specialized producing areas—(1) Central Valley of California, (2) Grand Prairie area of Arkansas (Lonoke and Prairie counties), (3) Mississippi River Delta (19 counties in Arkansas, 11 counties in Mississippi, and 4 parishes in Louisiana), (4) southwestern Louisiana (9 southwestern parishes), and (5) the Coastal Prairie of Texas (16 counties). Except for the Central Valley of California and the Mississippi River Delta, rice is the leading cash crop in each of the areas. In southwest Louisiana and in the Coastal Prairie of Texas, rice production often involves the alternate use of land by specialized rice tenants and by cattle grazing under the management of the landowner or a lessee of the land for grazing.

The following data indicates the relative importance of each of these six producing areas.

Area	Farms producing rice	Acres harvested (1,000)	Pounds harvested (million)
Total, United States.....	9,908	1,815.0	7,482
Central Valley, California.....	1,263	338.7	1,681
Grand Prairie, Arkansas.....	632	77.3	340
Mississippi River Delta.....	2,903	387.9	1,641
Southwest, Louisiana.....	3,183	483.0	1,656
Coastal Prairie, Texas.....	1,615	471.2	1,954

Since 1920 there have been 9,000 to 14,000 farmers producing rice. However, the acreage and production nearly tripled from 1939 to 1954. Since 1954, the acreage planted to rice has been restricted by acreage control programs, and the acres harvested in 1959 and 1964 were 35.3 and 27.3 percent below the 1954 acreage. However, the average production of rice for 1959 and 1964 was about the same as for 1954.

In 1964, 4,538 farms with 500 acres or more harvested accounted for 62 percent of the acres harvested.

Size of farm	Farms reporting rice	Acres harvested (1,000)	Production (million pounds)
Total.....	9,908	1,815	7,482
Under 500 acres.....	5,370	520	2,077
500 to 699 acres.....	1,229	225	913
700 to 999 acres.....	1,142	256	1,049
1,000 acres or more.....	2,167	814	3,443

Barley—Barley ranked twelfth among field crops on the basis of the value for production in 1964. Its acreage was equivalent to 3.4 percent of the acreage for cropland harvested.

The most important barley-producing area in the United States is in the spring wheat region. The four States of North Dakota, South Dakota, Montana, and Minnesota accounted for 48 percent of the acreage and 41 percent of the production in 1964. The second most important barley-producing region is in the Central Valley of California. In 1964, California had 1.3 million acres of barley and produced nearly 20 percent of the Nation's crop. Part of the reduction in the barley crop from 1959 to 1964 was the result of acreage reduction under the Feed Grains Program.

Sugar beets on the basis of the value of the crop were the thirteenth most important field crop in 1964. Sugar beets for sugar accounted for percent of the value of all field crops harvested, and the acreage of sugar beets was equivalent to 0.5 percent of the acreage of

cropland harvested in 1964. Sugar beet production is concentrated in areas near processing facilities. In 1964, nearly 80 percent of the sugar beet production was harvested in the seven States of California, Colorado, Idaho, Michigan, Minnesota, Nebraska, and Washington.

The number of farms reporting sugar beets since World War II has not varied much with 22,000 to 28,000 farms reporting sugar beets in the last four censuses. The acreage increased 51 percent between 1959 and 1964 and has more than doubled since 1949. Production of sugar beets increased 38 percent between 1959 and 1964 and increased 133 percent from 1949 to 1964. Nearly all sugar beets are grown on irrigated land. In 1964, 80 percent of the 1.4 million acres for sugar beets harvested were produced on irrigated land.

Peanuts—On the basis of value, peanuts for nuts ranked fourteenth among field crops in 1964. The acreage of peanuts for nuts represented 0.5 percent of the acreage for cropland harvested in 1964.

Peanuts are produced largely in the Southern States. Most of the crop is produced in three areas—(1) southern Alabama, southern Georgia, and northern Florida, (2) southeastern Virginia and northeastern North Carolina, and (3) Texas and Oklahoma. The Alabama-Georgia-Florida area had 52 percent of the acres harvested for nuts and produced 53 percent of the 1964 crop. The Virginia-North Carolina area had 20 percent of the acreage, but produced 26 percent of the 1964 crop. The total acreage for peanuts for nuts in the Texas-Oklahoma area was 357,000 or 26.5 percent of the United States total, and the production represented 20 percent of the United States total. While the acreage for peanuts harvested for nuts in 1964 was greater than in 1954, only about half as many farms produced peanuts in 1964 as in 1954. The disappearance of cropper farm operators and the acreage control program contributed to the decline in peanut-producing farms. The increased use of fertilizers, improved varieties, improved cultural practices, the improvement in the management skills of farmers producing peanuts, changes in the relative importance of the producing areas, and the improved quality of land used for producing peanuts contributed to the doubling of the yield per acre from 1954 to 1964. Because of changes in yield per acre, only half as many acres were used in 1964 as in 1954 to produce a 2 billion pound peanut crop.

Dry field and seed beans—On the basis of the value of the crop, dry feed and seed beans ranked eighteenth in 1964. The acreage harvested was equivalent to 0.5 percent of the acres of cropland harvested, and the value of the crop totaled $136 million or 0.7 percent of all field crops harvested. The production of dry field and seed beans is highly localized within limited areas. Central Michigan and western New York account for over one-half of the acreage. In California the production of dry lima and other field beans is concentrated in the Sacramento and San Joaquin River Valleys. Other areas of concentrated production are the Snake River Plain in Idaho, the San Juan River area in Colorado, and the North Platte River Valley in western Nebraska and southwestern Wyoming. Michigan had the largest acreage of dry field and seed beans with more than 590,000 acres in 1964. California was second with 170,000 acres, followed by Colorado, Idaho, and New York. The yield per acre in California was 34 percent higher than that of Michigan, but Michigan ranked first in production with over 2½ times as much as California. In 1964, 45 percent of the acreage of dry field and seed beans was grown on irrigated land.

Sugarcane for sugar—Sugarcane for sugar ranks fifteenth among field crops harvested in 1964 on the basis of value of the crop. This crop is important only in Hawaii, in 18 parishes in Louisiana, and in three counties in Florida. The acreage harvested in 1964 was equivalent to approximately 0.2 percent of the acreage of cropland harvested; an additional 122,000 acres were planted for harvest after 1964.

Most of the sugarcane is produced on large plantations and on managed farms. In 1964, 68.5 percent of the acreage harvested was on farms with 1,000 acres or more, and 53.0 percent was on farms operated by managers. A large part of the crop is harvested from irrigated land. In 1964, 43 percent of the acres harvested were irrigated.

Vegetables for sale—The value of vegetables harvested for sale totaled $987 million in 1964 compared to $740 million in 1959. The 1964 value of vegetables sold represented 6.0 percent of all crops sold and 2.8 percent of all farm products sold. The 3.3 million acres of vegetables harvested for sale comprised 1.2 percent of land from which crops were harvested in 1964.