## U. S. Department of Commerce <br> Sinclair Weeks, Secretary

Bureau of the Census
Robert W. Burgess, Director

United States Census of Agriculture: 1954

## Volume III <br> SPECIAL REPORTS

Part 8
SIZE OF OPERATION BY TYPE OF FARM

# BUREAU OF THE CENSUS 

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## SUGGESTED IDENTIFICATION

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## PREFACE

Volume III, Special Reports, comprises a group of special compilations and summaries of data from the 1954 Census of Agriculture and related surveys. Part 8 of Volume III, "Size of Operation by Type of Farm," presents statistics for 119 subregions on the number and characteristics of farms of each type by economic class of farm.

The compilation of data for this report was made as a part of the 1954 Census of Agriculture. The 1954 Census of Agriculture was taken in conformity with the Act of Congress (Title 13, United States Code) approved August 31, 1954, which includes provision for the mid-decade Censuses of Agriculture.

The collection of the data wras carried out by Census enumerators directed by supervisors appointed by the Director of the Census and working under the direction of Jack B. Robertson, then Chief, Field Division. Ernest R. Underwood, then special Assistant to the Director, was responsible for the recruitment of the field staff. The planning of the Census and the compilation of the statistics were supervised by Ray Hurley, Chief, Agriculture Division, and Warder B. Jenkins, Assistant Chief. They were assisted by J. Thomas Breen, Hilton E. Robison, Orvin L. Wilhite, Hubert L. Collins, Benjamin J. Tepping, Lois Hutchison, Carl R. Nyman, Robert A. Overton, M. Vincent Lindquist, Russell V. Oliver, Charles F. Frazier, Gladys L. Eagle, Orville M. Slye, Gaylord G. Green, Harold N. Cox, Henry A. Tucker, Julia Moring, Margaret Wood, and Lois Miller.

## UNITED STATES CENSUS OF AGRICULTURE: 1954

## REPORTS

Volume I.-Counties and State Economic Areas. Statistics for counties include number of farms, acreage, value, and farm operators; farms by color and tenure of operator; facilities and equipment; use of commercial fertilizer: farm labor; farm expenditures; livestock and livestock products; specified crops harvested; farms classified by type of farm and by economic class; and value of products sold by source.

Data for state economic areas include farms and farm characteristics by tenure of operator, by type of farm, and by economic class. Volume $I$ is published in 33 parts as follows:

| Part | State or States | Part | State or States | Part | State or States |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 12 | New England States: Maine. |  | West North Central: Minnesota. | 21 | East South Central-Continued Alabama. |
|  | New Hampshire. | 8 | Mowa. | 22 |  |
|  | Vermont. | 10 | Missouri. |  | West South Central: <br> Arkansas. |
|  | Massachusetts. | 11 | North Dakota and South | 23 |  |
|  | Rhode Islend. |  | Dakota. | 24 | Louisiana. |
|  | Connecticut. ${ }^{\text {Comata }}$ Middle Atlantic States: | 12 | Nebraska. | 25 | Oklahoma, |
|  | New York. | 13 | Kansas. | 26 | Texas. <br> Mountain: |
|  | New Jersey. | 14 | Delaware and Marvland. | 27 | Montana. |
|  | - Pennsylvania. | 15 | Virginia and West Virginia. | 28 | Idaho. |
|  | East North Central: | 16 | North Carolina and South | 29 | Wyoming and Colorado. |
| 3 | Ohio. |  | Carolina. | 30 | New Mexico and Arizona. |
| 4 | Indiana. | 17 18 | Georgia. Florida. | 31 | Utah and Nevada. |
| 5 | Illinois. |  | East South Central: | 32 | Washington and Oregon. |
| 6 | Michigan. | 19 | Kentucky. | 33 | California. |
| 7 | Wisconsin. | 20 | Tennessee. |  |  |

Volume II.-General Report. Statistics by Subjects, United States Census of Agriculture, 1954. Summary data and analyses of the data for States, for Geographic Divisions, and for the United States by subjects as illustrated by the chapter titles listed below:

| Chapter | Title | Chapter | Title |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Farms and Land in Farms. ${ }_{\text {Age, }}$ Residence Years on Farm, Work Off Farm | VII | Field Crops and Vegetables. |  |
| III | Age, Residence, Years on Farm, Work Off Farm. Farm Facilities, Farm Equipment. | VIII | Fruits and Nuts, Horticultural Specialties, | Forest |
| IV | Farm Labor, Use of Fertilizer, Farm Expenditures, and | IX | Value of Farm Products. |  |
|  | Cash Rent. | X | Color, Race, and Tenure of Farm Operator. |  |
| V | Size of Farm. | XI | Economic Class of Farm. |  |
| VI | Livestock and Livestock Products. | XII | Type of Farm. |  |

## Volume III.-Special Reports

Part 1.-Multiple-unit Operations. This report will be similar to Part 2 of Volume $V$ of the reports for the 1950 Census of Agriculture. It will present statistics for approximately 900 counties and State economic areas in 12 Southern States and Missouri for the number and characteristics of multiple-nnit operations and farms in multiple units.

Part 2.-Ranking Agricultural Counties. This special report will present statistics for selected items of inventory and agricultural production for the leading counties in the United States.

Part 3.-Alaska, Hawail, Puerto Rico, District of Columbia, and U. S. Possessions. These areas were not included in the 1954 Census of Agriculture. The available current data from various Govermment sources will be compiled and published in this report.

Part 4.-Agriculture, 1954, a Graphic Summary. This report will present graphically some of the significant facts regarding agriculture and agricultural production as revealed by the 1954 Census of Agriculture.

Part 5.-Farm-mortgage Debt. This will be a cooperative study by the Agricultural Research Service of the U. S. Department of Agriculture and the Bureau of the Census. It will present, by States, data based on the 1954 Census of Agriculture and a special mail survey to be conducted in January 1956, on the number of mortgaged farms, the amount of mortgage debt, and the amount of debt held by principal lending agencies.

Part 6.-Irrigation in Humid Areas. This cooperative report by the Agricultural Research Service of the U. S. Department of Agriculture and the Bureau of the Census will present data obtained by a mail survey of operators of irrigated farms in 28 States on the source of water, method of applying water, number of pumps used, acres of crops irrigated in 1954 and 1955, the number of times each crop was irrigated, and the cost of irrigation equipment and the irrigation system.

Part 7.-Popular Report of the 1954 Census of Agriculture. This report is planned to be a general, easy-to-read publication for the general public on the status and broad characteristics of United States agriculture. It will seek to delineate such aspects of agriculture as the geographic distribution and differences by size of farm for such items as farm acreage, principal crops, and important kinds of livestock, farm facilities, farm equipment, use of fertilizer, soil conservation practices, farm tenure, and farm income.
Part 8.—Size of Operation by Type of Farm. This will be a cooperative special report to be prepared in cooperation with the Agricultural Research Service of the U. S. Department of Agriculture. This report will contain data for 119 economic subregions, (essentially general type-of-farming areas) showing the general characteristics for each type of farm by economic class. It will provide data for a current analysis of the differences that exist among groups of farms of the same type. It will furnish statistical basis for a realistic examination of production of such commodities as wheat, cotton, and dairy products in connection with actual or proposed governmental policies and programs.

## INTRODUCTION

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| Subregion | Page | Subregion | Page | Subregion | Page |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 23........ | 292 | 56......... | 232 | 80. | 272 |
|  | 196 | 57. | 236 | 97. | 276 |
|  | 200 | 59. | 240 | 98. | 280 |
| 36. | 204 | 60. | 244 | 99. | 28. |
| 37. | 208 | 61. | 248 | 101. | 288 |
| 38. | 212 | 74. | 252 | 102. | 292 |
| 41. | 216 | 75. | 256 | 103. | 296 |
| 42. | 220 | 76. | 260 | 108. | 300 |
| 43. | 224 | 78. | 264 | 114. | 304 308 |
| 55. | 228 | 79 | 268 | 116. | 308 |

Table 4.-Farne and fam characteristice for OTHER FIELD-CROP fans, by economic class: Census of 2954

| Subregion | Page | Subregion | Page | Subregion | Page |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1.......... | 314 | 31. | 346 |  | 374 |
| 19. | 318 | 32. | 350 | 45. | 378 |
| 20. | 322 | 33. | 354 | 52. | 382 |
| 21. | 326 | 36. | 358 | 53. | 386 |
| 22. | 330 | 37. | 362 | 77. | 390 |
| 23. | 334 | 38. | 366 | 96. | 394 |
| 24. | 338 | 41. | 370 | 212. | 398 |
| 25. | 342 |  |  |  |  |
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| Subregion | Page | Subrogion | Page | Subregion | Pege |
| 14,....... | 404 | 39... | 412 | 116. | 419 |
|  | 408 |  | 415 | 117....... | 423 |

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| Subregion | Page | Subregion | Page | Subregion | Page |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 39........ | 428 | 115...... | 436 | 117..... | 445 |
| 11. | 432 | 126 | 440 | 129. | 449 |
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| Subregion | Page | Subregion | Page | Subregion | Page |
| 1.:....... | 454 | 32.... | 514 | 72. | 574 |
| 2......... | 458 | 34.... | 518 | 73. | 578 |
| 4. | 462 | 47. | 522 | 82. | 582 |
| 5. | 466 | 48. | 526 | 84. | 586 |
|  | 470 | 49 | 530 | 85. | 590 |
| 7. | 474 | 50. | 534 |  | 594 |
| 8. | 478 | 54. | 538 |  | 598 |
| 9. | 482 | 58. | 542 | 103. | 602 |
| $10 .$ | 486 |  | 545 | 170. | 606 |
| 16. | 490 | 65. | 550 | 112. | 610 |
| 17. | 494 | 66. | 554 | 115. | 614 |
| 27. | 498 | 67. | 558 | 116. | 618 |
| 28. | 502 | 68. | 562 | 118. | 622 |
| 29. | 506 | 69. | 566 | 119. | 626 |
| 30. | 510 | 71. | 570 |  |  |

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| Subregion | Page | Subregion |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 938 | Subregion | Page | Subregion |
| 28. | 942 | 68 | 982 |  |
| 32. | 946 | 69. | 986 | 92. |
| 38. | 946 | 79. | 990 | 93. |
| 41. | 954 | 71. | 994 |  |
| 44. | 958 | 72. | 1002 | 97. |
| 47. | 962 | 84. | 1006 | 103. |
| 48. | 966 | 85. | 1010 | 106. |
| 49. | 974 | 86. | 1014 | 120. |
| 52. | 978 | 87. | 1018 | 112 |



## INTRODUCTION

Purpose.-The purpose of this report is to present selected data showing the characteristics of farms and farm operators for commercial farms, classified by type of farm.

The purpose of a classification of farms by type is to show (a) the kinds of farms in the various parts of the Nation; (b) the variation in the use of resources, production, sales, and organization among farms of the various types; and (c) the characteristics of the operators for different types of farms. The classification of farms by type places together farms having a high degree of uniformity in the kind and relative amount (proportion) of crops and livestock handled and in the methods and practices followed in production. The degree of agricultural specialization and the pattern of production can thus be shown. Information thus classified provides a basis for the study and analysis of agricultural problems, such as land use, soil conservation, and the production and marketing of agricultural commodities. It also is of value to those who provide products and services for farms and farm people.

Farms in each type have been further classified on the basis of economic class of farm, or on the basis of total value of farm products sold. The data provide a cross-section view of the organization, use of resources, productivity, and measures of differences for groups of farms of the same type in various parts of the country.

Presentation of statistics.- All the data presented in this report are for the United States or for economic subregions. The boundaries of the 119 subregions used for presenting data for this report are indicated by the map on page VI. Subregions represent primarily general type-of-farm areas and represent in all except 17 cases, combinations of State economic areas. Many of the economic subregions extend into two or more States. (For a more detailed description of economic subregions, see the publication "Economic Subregions of the United States, Series Census BAE; No. 19," published cooperatively by the Bureau of the Census and the Bureau of Agricultural Economics, U. S. Department of Agriculture, July 1953.)

The statistics have been arranged by type of farm. For each type of farm, there are presented statistics for the United States and for the subregions in which the number of farms of the type represent a significant number of farms. Usually, data are not presented for a subregion unless the number of farms of a type was at least 3,000 . Table 1 presents the number of farms by type of farm for each subregion. When the figure for the number of farms is shown in italics, this report contains detailed statistics for farms of that type for the subregion. Data for the three groups of general farms-i. e., primarily crop, primarily livestock, or both livestock and crop-are not shown for any subregion, but are shown for the United States.

For each type of farm, the tables for subregions are arranged according to the subregion number,

The table for each type for each subregion contains totals for all commercial farms in order to facilitate the determination of the relative importance of farms of the specific type of farm in the subregion.

Other reports by type of farm.-A description and analysis of the data contained in this report for the more important types of farms are presented in Part 9 of Volume III of the reports for the 1954 Census of Agriculture. Statistics for State economic areas are given in Economic Area Tables 4,5, and 6 of Volume I of the reports for the 1954 Census of Agriculture. Summary data are given for each type of farm in Chapter XII and for each econoraic
class of farm in Chapter XI of Volume II of the reports for the 1954 Census of Agriculture.

Farms classifled by type.--In making the classification by type of farm for the 1954 Census, farms were divided into two groupscommercial farms and other farms. Data are presented by type of farm only for commercial farms.

Commercial farms are those, except abnormal farms, with a total value of farm products sold of $\$ 1,200$ or more during one year plus those farms with a value of farm products sold of $\$ 250$ to $\$ 1,199$, provided the farm operator worked off his farm less than 100 days and the total value of farm products sold was greater than the income received by him and members of his family from nonfarm sources. (See Chapter XI, "Economic Class of Farm," for a more complete discussion of the composition of commercial farms.)

Other farms comprise part-time, residential, and abnormal farms. Part-time farms are farms with a value of farm products sold of $\$ 250$ to $\$ 1,199$, provided that the farm operator reported 100 or more days of work off the farm during the year, or that the nonfarm income received by him and members of his family was greater than the total value of agricultural products sold. Residential farms include all farms, except abnormal farms, with a total value of agricultural products sold of less than $\$ 250$. Abnormal farms comprise public and private institutional farms, community enterprises, experiment-station farms, grazing associations, etc.

Total Number of Farms with the Number of Proportion Classified by Type of Farm: Census of 1954

| Item | 1954 |
| :---: | :---: |
| Total number of farms. | 4, 783, 021 |
| Commercial farms: <br> Number <br> Percent of total. | $3,327,617$ 69.6 |
| Other farms: <br> Number <br> Percent of total | $\begin{array}{r} 1,455,404 \\ 30,4 \end{array}$ |

Basis of classification.-The classification of commercial farms by type was made on the basis of the relationship of the value of sales from a particular source, or sources, to the total value of all farm products sold from the farm. In some cases, the type of farm was determined on the basis of the sale of an individual farm product, such as cotton, or on the basis of the sales of closely related products such as dairy products. In other cases, the type of farm was determined on the basis of sales of a broader group of products, such as grain crops including corn, sorghums, all small grains, field peas, field beans, cowpeas, and soybeans. In order to be classified as a particular type, sales or anticipated sales of a product or group of products had to represent 50 percent or more of the total value of products sold.

The types of commercial farms for which data are shown, together with the product or group of products on which the classification is based are:

| Type of farm | Product or group of products amounting to 50 percent or more of the value of all farm products sold |
| :---: | :---: |
| Cash-grain | Corn, sorghum, small grains, field peas, field beans, cowpeas, and soybeans. |
| Cotton | Cotton (lint and seed). |
| Other field | Peanuts, Irish potatoes, sweetpotatoes, tobacco, sugarcane, sugar beets for sugar, and other miscellaneous crops. |

TVpe of farm $\quad$ Product or proup of products amounting to 60 percent or
more of the value of all farm products sold
Vegetable of
Fruit-and-nut......... Berries and other small fruits and tree Vegetables. fruits, grapes, and nuts.
Dairy.-.............. Milk and other dairy products. The criterion of 50 percent of the total sales was modified in the case of dairy farms. A farm for which the value of sales of dairy products represented less than 50 percent of the total value of farm products sold was classified as a dairy farm if:
(a) Milk and other dairy products accounted for 30 percent or more of the total value of products sold, and
(b) Milk cows represented 50 percent or more of all cows, and
(c) Sales of dairy products, together with the sales of cattle and calves, amounted to 50 percent or more of the total value of farm products sold.
Poultry................ Chickens, eggs, turkeys, and other poultry products.
Livestock farms other than dairy and
poultry
Cattle, calves, hogs, sheep, goats, wool, and mohair, provided the farm did not qualify as a dairy farm.
 value of products from one source or group of sources did not represent as much as 50 percent of the total value of all farm products sold. Separate figures are given for three kinds of general farms:
(a) Primarily crop
(b) Primarily livestook
(c) Crop and livestock

Primarily crop farms are those for which the sale of one of the following crops or groups of crops-vegetables, fruits and nuts, cotton, cash grains or other field crops-did not amount to 50 percent or more of the value of all farm products sold, but for which the value of sales for all these groups of crops represented 70 percent or more of the value of all farm products sold.
Primarily livestock farms are those which could not qualify as dairy farms, poultry farms, or livestock farms other than dairy and poultry, but on which the sale of livestock and poultry and livestock and poultry products amounted to 70 percent or more of the value of all farm products sold.
General crop and livestock farms are those which could not be classified as either crop farms or livestock farms, but on which the sale of all crops amounted to at least 30 percent but less than 70 percent of the total value of all farm products sold.
Miscellaneous........ This group of farms includes those that had 50 percent or more of the total value of products accounted for by sale of horticultural products, or sale of horses, or sale of forest products. In 1950, this group of farms also included those that had 50 percent or more of the total value of farm products accounted for by the sale of fur animals or the sale of bees and honey.
The above types provide a classification meaningful to large areas of the United States both as to number of farms, and as to the kind of farming followed. Relatively unimportant types, such as forest product farms, horse farms, etc., were grouped as miscellaneous since the main purpose in classifying these was to exclude them from the other types.

Cotton farms were classified separately from "Other field-crop farms" because they constitute such a large proportion of the total farms. The separate classification of cotton farms also makes the
data more useful in areas where cotton is a competing cash orop with peanuts or tobacco. Usually it is possible to identify the crop accounting for the "Other field-crop farms" because, in most areas, only one crop provides the source of income for other field crop farms.

General farms were separated into three groups in order to provide a more specific description of the farms not obtaining as much as 50 percent of the value of all farm products sold from one source or group of sources.

In the South, the "home" farms of multiple-unit operations were classified on the same basis as all other farms. No attempt was made to consider value of sales of products from the land rented out. The "home" farm may have been classified as residential, and thus not have been included with the farms classified by type, even though it was the headquarters of a relatively large agricultural operation.

In a few instances, the number of "crop-type" farms reporting cropland harvested is less than the total number of farms in the type group. This difference oocurs because the land use tabulations did not provide for the counting of farms reporting and acres of cropland harvested when the acreage of cropland harvested was less than one acre. Such differences occurred largely on farms where tobacco or berries and small fruits was the important crop.

Limitations of the use of value of products sold for classifying farms by type. - The value of farm products sold has been used for several Censuses as the basis for making a classification of farms by type. It provides a common denominator for relating the importance of all enterprises. As a general rule, it reflects the physical resources and productivity of the farm. However, the use of income data has limitations for those farms where crop failure curtailed production during the year, for farms where livestock or other inventories were expanding or contracting at greater than the usual yearly rate for the farm, and for farms on which a considerable part of the products sold are represented by purchased items. The use of gross sales without adjustment for any of the costs of production may give too great an importance to certain products. For example, any farms purchasing feeder cattle may be classified as livestock farms even though the net income from crops may exceed the net income from livestock and livestock products. Farms may be classified differently in each Census if prices of the several groups of farm products change at different rates. This is particularly true for farms on which more than one product or groups of products provide important sources of income. However, farms on which the production of one product provides a large part of the total sales would be classified the same as to type regardless of the change in price level.

For 1954 , for the purpose of classifying farms by type, it was necessary to determine the approximate total value of farm products sold for each farm and also the relationship of the income from the most important source or sources to this total. These determinations were made for each farm during the office processing. For all livestock and livestock products, except wool and mohair, Census enumerators obtained the value of sales during the enumeration. Also the Census enumerators obtained for each farm, the value of vegetables sold, the value of nursery and greenhouse products sold, the value of forest products sold, and the value of miscellaneous crops sold. For most of the principal field crops-corn, wheat, oats, barley, other small grains, hay, berries, and small fruits-the enumerator obtained the quantity sold or to be sold. The value of the sales of the crops for which the quantity sold was obtained by Census enumerators was calculated by multiplying the quantity sold by State average prices. For other products for the purpose of determining the total value of farm products sold and the income from the most important source or sources, the value of sales was estimated by multiplying the quantity harvested by State average prices when the value of the quantity sold would be $\$ 100$ or more. This procedure was

Table 1.-NUMBER OF FARMS BY TYPE OF FARM, BY ECONOMIC SUBREGIONS: CENSUS OF 1954
[When the figure for number of farms is in italice, thie roport containg dotailed data for the type of farm, for the subregion]

| Subroedon | Number of farms by type |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | Cash grain | Cotion | Owhor <br> fiold- <br> crop | Vegetable | Fruit-andnut | Dairy | Poult try | Livestock other than diniry and poul. try | Goneral |  |  |  | Miscel. Lancous |
|  |  |  |  |  |  |  |  |  |  | Total | $\begin{gathered} \text { Primerily } \\ \text { crop } \end{gathered}$ | Primarily <br> livestock | Crop and li ves tock |  |
| Unislod Statoc... | 3,327,889 | 537, 974 | 525, 163 | 367,733 | 32,581 | 82,096 | 548,76\% | 154,251 | 694,888 | 347,079 | 80,039 | 63.197 | 203.843 | $\xrightarrow{37,057}$ |
| 1,................... | 18, 669 | 45 | ... | 3,365 | 147 | 581 | 9,469 | 2,282 | 639 | 252 | 594 | 111 | 247 | 1,183 |
| 2.... | 8, 279 | 6 | ... | 262 | 220 | 269 | 3,728 | 2,410 | 433 | 456 | 325 | 43 | ${ }^{89}$ | 495 |
| 3.... | 6,712 | 5 | $\ldots$ | 40 | 485 | 595 | 1,929 | 2,362 | 324 | 201 | 121 | 25 | 65 | ${ }^{7} 1$ |
| 4................... | 10,012 | 15 | $\cdots$ | 1,150 | 410 | 473 | 3,948 | 2,899 | 344 | 946 | 260 | 26 | 60 | 418 |
| 6.................... | 11,787 | 627 | $\ldots$ | 840 | 961 | 394 | 3,138 | 3,717 | 100 | 359 | 217 | 40 | 112 | 1,541 |
| 8.................... | 21,986 | 70 | $\ldots$ | 10 | 587 | 732 | 7,205 | 2,024 | 555 | 450 | 288 | 36 | 106 | 303 |
| 7,................... | 16,062 | 15 | ... | 82 | 41 | 98 | 14,080 | 489 | 90 | 527 | 417 | 15 | 95 | 201 |
| 8.................... | 13, 149 | 056 |  | 56 | 445 | 1.11 | 9,588 | 926 | 551 | 614 | 341 | 80 | 193 | 202 |
| $9 .$. | 17,514 | 2,621 | $\cdots$ | 158 | 923 | 1,996 | 6,789 | 1,380 | 1,085 | 2,295 | 649 | 270 | 1,376 | 333 |
| 10................... | 30, 306 | 466 | ... | 180 | 192 | 845 | 23.451 | 2,503 | 1,155 | 1,161 | 607 | 187 | 367 | 353 |
| 11................... | 6,923 | 811 | $\ldots$ | 173 | 16 ? | 120 | 2,230 | 1,734 | 417 | 1,062 | 233 | 209 | 620 | 214 |
| 12.... | 6,099 | 687 | $\ldots$ | 312 | 105 | 103 | 2,547 | 980 | 448 | 711 | 170 | 115 | 425 | 195 |
| 13. | 6,175 | 500 | $\cdots$ | 26 | $12{ }^{1}$ | 215 | 2,65\% | 1,126 | 524 | 506 | 135 | 126 | 245 | 595 |
| 14. | 3,031 | 172 | $\ldots$ | 75 | 711 | 442 | 555 | 065 | 140 | 126 | 45 | 25 | 56 | 145 |
| 16. | 23,51.6 | 5,300 | ... | 3,051 | 2,064 | 380 | 3,273 | 7,167 | 1,406 | 2,480 | 896 | 218 | 1.366 | 495 |
| 16.................... | 24,678 | 2.051 | $\ldots$ | 595 | 274 | 604 | 9,068 | 3,752 | 3,552 | 4,519 | 331 | 1,450 | 2,738 | 253 |
| 17.................... | 11,119 | 1,357 | ... | 45 | 66 | 165 | 5,387 | 1,601 | 055 | 1,680 | 147 | 536 | 997 | 173 |
| 18................... | 7,882 | 354 | $\ldots$ | ... | 10 | 411 | 1,427 | 2,354 | 2,451 | 828 | 70 | 350 | 408 | 47 |
| 19.................... | 12,967 | 529 | ... | 4.546 | 270 | 212 | 1,953 | 1,009 | 3,236 | 923 | 142 | 236 | 545 | 289 |
| 20................... | 10,099 | 417 | 5 | 4,316 | 40 | 229 | 1,150 | 892 | 1,298 | 1,482 | 479 | 130 | 873 | 272 |
| 21................... | 21,012 | 593 | 1,453 | 15,178 | 32 | 5 | 73 | 116 | 2,702 | 2,633 | 1,797 | 51 | 785 | 137 |
| $22 . . . . . . . . . . . . . . . . .$. | 25, 964 | 1,547 | 175 | 21,371 | 122 | 110 | 197 | 268 | 1,153 | 901 | 535 | 5 | 361 | 120 |
| 23.................. | 36,620 | 283 | 5,473 | 27,827 | 48 | 27 | 156 | 583 | 703 | 1,360 | 1,084 | 40 | 236 | 159 |
| 34................... | 55,424 | 434 | 2,037 | 49,070 | 105 | 30 | 232 | 482 | 1,084 | 1.722 | 1,332 | 35 | 355 | 228 |
| 25..................... | 50,016 | 503 | 130 | 43,975 | 31 | 159 | 1.472 | 945 | 1,150 | 1.071 | 433 | 87 | 551 | 590 |
| 26................... | 10,728 | 268 | $\cdots$ | 41 | 32 | 265 | 2.095 | 2,176 | 8,615 | 944 | 108 | 316 | 520 | 292 |
| 27. | 17,404 | 1,223 | ... | 90 | 155 | 220 | 7,8\%6 | 1,853 | 3,460 | 2.062 | 381 | 582 | 1.099 | 465 |
| $28 . \ldots \ldots . . . . . . . . . .$. | 36,831 | 5,072 | ... | 279 | 456 | 1,222 | 16.084 | 3.445 | 4,798 | 4.662 | 542 | 1,796 | 2,124 | 1,013 |
| 29................... | 18,573 | 2,500 | $\ldots$ | 45 | 45 | 281 | 6,534 | 820 | 5.463 | 2,69? | 150 | 1,365 | 1,182 | 198 |
| 30..................... | 18,168 | 1,136 | $\ldots$ | 1,950 | 215 | 316 | 6,755 | 1,330 | 5,892 | 2,327 | 412 | 831 | 1,084 | 237 |
| 31.................... | 21,872 | 776 | 20 | 14,471 | 141 | 312 | 1,137 | 664 | 2,640 | 1,300 | 403 | 138 | 759 | 410 |
| 32,.................. | 40, 929 | 554 | 391 | 22.150 | 227 | 213 | 6.264 | 775 | 4,941 | 6,975 | 1,121 | 452 | 3,402 | 509 |
| 33.................... | 20,509 | 459 | 140 | 8,639 | 725 | 556 | 1,708 | 4,323 | 2,080 | 1,368 | $4: 27$ | 112 | 849 | 562 |
| 34,................... | 37,699 | 2, 107 | 17,740 | 3,032 | 162 | 821 | 4,088 | 3,340 | 2,098 | 3,479 | 1,452 | 255 | 1,772 | 832 |
| $38 . . . . . . . . . . . . . . . . . . . . . . ~$ | 11,016 | 330 | 7,587 | 303 | 246 | 98 | 257 | 502 | 823 | 734 | 416 | 22 | 296 | 236 |
| 36,................... | 30,522 | 352 | 19,726 | 4, 831 | 229 | 14 | 419 | 319 | 1,968 | 2,661 | 1,693 | 31 | 837 | 203 |
| 37,................... | 8,989 | 108 | 3,290 | 3,5,98 | 119 | 15 | 147 | 219 | 1.306 | 898 | 602 | 12 | 284 | 294 |
| 38,................... | 30,683 | 319 | 3,388 | 15,965 | 364 | 54 | 364 | 466 | 3.545 | 5,720 | 3,878 | 22 | 1,820 | 498 |
| 39,................... | 18,737 | .. | $\ldots$ | 139 | 2,582 | 11,003 | 515 | 1,108 | 1,958 | 214 | 98 | $\ldots$ | 116 | 1,139 |
| 40.................... | 4,2,2 | 94 | 526 | 489 | 271 | 150 | 230 | 464 | 1,112 | 542 | 298 | ... | 244 | 274 |
| 41,.................. | 42,852 | 545 | 18.910 | 8.188 | 233 | 144 | 342 | 515 | 5.218 | 8,350 | 5,461 | 53 | 2,736 | 557 |
| 42................... | 39,533 | 774 | 32,529 | 30 | 379 | 230 | 2,523 | 7,188 | 2,871 | 2,875 | 754 | 135 | 986 | 1,174 |
| 43................... | 12,287 | 338 | 7,779 | 30 | 132 | 46 | 689 | 1,439 | 1,035 | $\stackrel{569}{ }$ | 290 | 32 | 247 | 2, 230 |
| $44 . . . . . . . . . . . . . . . . .$. | 37,915 | 989 | 2,094 | 19,623 | 35 | 201 | 3,036 | 353 | 6,418 | 4,761 | 1.056 | 401 | 3,304 | 405 |
| $45 . . . . . . . . . . . . . . . . .$. | 39,905 | 211 | ... | 29,442 | 10 | 45 | 2,992 | 197 | 4,793 | 2, 142 | 2.7 | 150 | 1,775 | 164 |
| $46 . . . . . . . . . . . . . . . . . . .$. | 21,829 | 3,061 | $\ldots$ | 3,168 | 220 | 150 | 3,430 | 936 | 5,335 | 5,316 | 483 | 1,230 |  |  |
| 47................... | 71,638 | 33,957 | $\ldots$ | 330 | 289 | 125 | 6,513 | 2,24.5 | 28,300 | 9,432 | 483 461 | 1,230 2,421 | 3,601 6,950 | 215 |
| 48................... | 78.548 | 34,067 | $\cdots$ | 224 | 292 | 431 | 10,310 | 3,533 | 15,243 | 15,063 | 765 | 4,530 | 9,768 | 387 |
| 40................... | 49.169 | 15,784 | ... | 856 | 993 | 376 | 16,616 | 1,867 | 4,879 | 7.251 | 1,088 | 1,383 | 4,780 | 547 |
| so.................... . | 17,926 | 1,328 | $\ldots$ | 110 | 925 | 3,632 | 5,789 | 1,680 | 1,403 | 2,687 | 1,088 612 | 1,383 645 | 4,780 1,430 |  |
| s1.................... | 27,094 | 11,276 | $\cdots$ | 1,869 | 175 | 85 | 1,322 | 920 | 7,938 |  |  |  |  |  |
| 52.................... | 28,505 | 2, 312 | $\ldots$ | 10,380 | -25 | 45 | 2,206 | 1,301 | 6,387 | 3,439 4,938 | 930 | 960 025 | 2,349 3,392 | 70 131 |
| 35, .................. | 87,732 | 1,396 | 482 | 13.829 | 10 | 105 | 2,500 | 250 | 3,728 | 5,463 | 1,450 | 285 | 3,392 3.748 | 131 11 |
| 04..................... | 19.437 | 430 | 1,090 | 3.437 | 65 | 20 | 6,681 | 186 | 4,029 | 2,4838 2,788 | $\begin{array}{r}1,150 \\ \hline 387 \\ \hline 8\end{array}$ | 245 561 | 3,748 1,940 | 11 |
| 85..... | 30, 560 | 498 | 24,369 | 195 | 111 | 85 | 690 | 1.381 | 1,649 | 2,768 1,388 | 682 680 | 561 48 | $\begin{array}{r}1,940 \\ \hline 780\end{array}$ | 209 |
| $86 . . . . . . . . . . . . . . . . . .$. | 12,478 | 76 | 9,955 | 33 | 85 | 293 | 293 | 401 | 908 | 661 | 238 | 63 |  |  |
| 97.................... | 85, 85s | 103 | 30,511 | 70 | 26 | 5 | 2,174 | 3 x | 8.630 | 807 | 206 | 64 | 361 | 283 217 |
| \$2.................... | 13.360 | 457 | 3,52.4 | 301 | 356 | 1,684 | 2,730 | 770 | 2,029 | 960 | 450 | 94 98 | 337 448 | 217 468 |
| 08..................... | 48,2.26 | 313 | 35,285 | 248 | 247 | 61 | 3.024 | 1. 207 | 4,946 | 2.171 | 827 | 122 | 1,222 | 468 716 |
| 60. | 20,370 | 500 | 24,078 | 512 | 50 |  | 1,727 | 432 | 2,660 | 2,182 | 499 | 183 | 1,202 | 184 |

Table 1.-NUMBER OF FARMS BY TYPE OF FARM, BY ECONOMIC SUBREGIONS: CENSUS OF 1954-Continued


| Subregion | Nunber of farms by typo |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | Cashgrain | Cotton | Other fieldcrop | Vegotable | Fruitand nut | Dairy | Poultry | Livestook other than dairy and poultry | Ceneral |  |  |  | Miscellaneous |
|  |  |  |  |  |  |  |  |  |  | Total | $\int_{\text {Prop }}^{\text {Primarily }}$ | Primarily <br> livestock | Crop and livostock |  |
| $61 . . . . . . . . . . . . . . .$. | 60,613 | 800 | 52,808 | 72 | 3.02 | 110 | 930 | 377 | 3,636 | 1,567 | 579 | 83 | 905 | 21 |
| 62.................. | 18,776 | 8,681 | 85 | 75 | 75 | 216 | 1,106 | 860 | 4,493 | 3,124 | 281 | 395 | 2,248 | 61 |
| 63................... | 46,755 | 33,124 | ... | 20 | 1.58 | 15 | 1,491 | 791 | 7,902 | 3,112 | 80 | 535 | 2.497 | 142 |
| 64................... | 20,491 | 6,711 | $\cdots$ | 93 | 739 | 50 | 6,411 | 871 | 2.927 | 1,909 | 200 | 481 | 1,228 | 780 |
| 65................... | 54,537 | 2,023 | -•• | 267 | 501 | 412 | 42, 772 | 956 | 3,655 | 3,686 | 721 | 1,177 | 1,780 | 265 |
| 66.................. | 38,962 | 773 | ... | 842 | 306 | 261 | 28,001 | 1,221 | 2,931 | 3,893 | 1,40\% | 759 | 1,717 | 734 |
| 67.................. | 25,845 | 606 | ... | 126 | 95 | 180 | 22,177 | 471 | 978 | 1,068 | 229 | 280 | 559 | 144 |
| 68.................. | 62,629 | 3,476 | $\ldots$ | 291 | 425 | 144 | 41,815 | 1,929 | 6,991 | 7,491 | 246 | 4,252 | 2,993 | 209 |
| 69.................... | 78,046 | 14,527 | $\cdots$ | 151 | 205 | 25 | 15,424 | 1,512 | 93,020 | 13,055 | 165 | 5,432 | 7.469 | 127 |
| 70................... | 64,422 | 14,063 | . $\cdot$. | 12 | 145 | 45 | 2,948 | 900 | 41,102 | 5,111 | 165 | 1,240 | 3,706 | 115 |
| 71................... | 83, 207 | 18,672 | $\cdots$ | 80 | 35 | 20.1 | 5,494 | 1,574 | 47.123 | 9,967 | 506 | - 2,482 | 6,959 | 81 |
| 72.................. | 27, 263 | 7,486 | 10 | 15 | 206 | 151 | 3,978 | 1,396 | 9,393 | 5,153 | 207 | 1,658 | 3,288 | 175 |
| 73................... | 36,330 | 1,061 | 517 | 20 | 32 | 287 | 16,758 | 2,047 | 12,743 | 2,598 | 261 | 1,063 | 1,274 | 267 |
| 74.................... | 12,027 | 693 | 3,670 | 80 | 126 | 377 | 2,124 | 1,172 | 2,679 | 1,012 | 367 | 115 | 530 | 94 |
| 75................... | 23,656 | 3,077 | 18,661 | 25 | 20 | 60 | 406 | 215 | 764 | 475 | 197 | 30 | 248 | 23 |
| 76.................... | 122,321 | 3,823 | 109,385 | 1,232 | 100 | 67 | 832 | 512 | 4,065 | 2,130 | 1,169 | 76 | 885 | 176 |
| 77.................. | 4.355 | 126 | 1,151 | 2,130 | 218 | 40 | 99 | 10 | 326 | 204 | 255 | ... | 49 | 21 |
| 78.................. | 19,589 | 4,975 | 7,995 | 265 | 226 | 10 | 725 | 752 | 3,586 | 868 | 281 | 100 | 487 | 187 |
| 79................... | 5,541 | 65 | 2.107 | 70 | 25 | $\ldots$ | 543 | 711 | 1,663 | 196 | 51 | 26 | 119 | 171 |
| 80.................. | 39.542 | 310 | 16,480 | 1,253 | 1.067 | 344 | 2,266 | 2,981 | 10,399 | 3.656 | 1,247 | 250 | 2,159 | 885 |
| 81.................. | 6,539 | 91 | 059 | 165 | 36 | 82 | 523 | 598 | 3,797 | 478 | 132 | 75 | 271 | 110 |
| 82.................... | 14,758 | 1,220 | $\ldots$ | 20 | 70 | 280 | 6,259 | 2.779 | 3,045 | 1,023 | 88 | 378 | 557 | 62 |
| 83................... | 25,603 | 7,743 | 156 | 5 | 40 | 25 | 3,570 | 538 | 9,896 | 3.546 | 362 | 693 | 2,491 | 86 |
| 84................... | 27,443 | 6,027 | ... | 5 | 5 | 5 | 5,518 | 927 | 10,128 | 4,783 | 332 | 1,201 | 3,249 | 46 |
| 85.................. | 109,640 | 28.839 | ... | 241 | 216 | 100 | 5,847 | 1,748 | 59,824 | 12,510 | 755 | 2,331 | 9,424 | 315 |
| 86.................. | 56,668 | 21,870 | $\cdots$ | 40 | 23 | 5 | 1,222 | 1,191 | 23,066 | 9,131 | 252 | 1,697 | 7,182 | 120 |
| 87.................. | 30,523 | 12,942 | ... | 54 | 6 | ... | 1,704 | 817 | 7,588 | 7,387 | 311 | 1,673 | 5.403 | 25 |
| 88.................. | 26, 210 | 1,497 | ... | 18 | 10 | ... | 17,737 | 959 | 2,843 | 3,076 | 255 | 1,493 | 1,328 | 70 |
| 89.......... | 23,844 | 13,280 | ... | 1,590 | 36 | 10 | 3,179 | 485 | 1,201 | 3,998 | 781 | 701 | 2,516 | 65 |
| 90. | 34,649 | 24,389 | ... | 36 | 5 | * | 2.170 | 139 | 3,326 | 4,559 | 217 | 486 | 3,856 | 25 |
| 91................... | 20,587 | 8,687 | $\cdots$ | 23 | ... | $\cdots$ | 641 | 176 | 6,672 | 4,383 | 293 | 756 | 3,334 | 5 |
| 92................... | 41,609 | 10,176 | ... | 80 | 20 | 5 | 1,058 | 395 | 22,975 | 6,874 | 788 | 838 | 5,248 | 26 |
| 93.................. | 34, 927 | 19.859 | . $\cdot$ | 16 | -•• | 5 | 839 | 395 | 8,568 | 5,215 | 171 | 779 | 4,265 | 30 |
| 94. | 34,266 | 23.140 | 300 | 6 | 55 | 6 | 1,709 | 530 | 4,721 | 3,714 | 487 | 401 | 2,826 | 85 |
| 95.......... | 16,947 | 1,458 | 2,091 | 457 | 107 | 95 | 2,334 | 631 | 6,918 | 2,746 | 840 | 447 | 1,459 | 110 |
| 96................... | 24,128 | 1,274 | 2,290 | 1,394 | 135 | 78 | 2,551 | 1,219 | 11,720 | 3.375 | 1.072 | 353 | 1,951 | 92 |
| 97.................. | 45,742 | 1,974 | 24,335 | 357 | 268 | 21 | 1,641 | 2,084 | 7,256 | 5,668 | 1,912 | 444 | 3,312 | 138 |
| 98.................. | 13,4.57 | 610 | 4,237 | 560 | 364 | 75 | 718 | 842 | 4,364 | 1,626 | 601 | 170 | 855 | ${ }^{61}$ |
| 99................... | 6,286 | 36 | 5,299 | $\cdots \cdot$ | 249 | 222 | 105 | 65 | 121 | 141 | 133 | ... | 8 | 48 |
| $200 . . . . . . . . . . . . . . .$. | 11,075 | 311 | 891 | 98 | 26 | 12 | 270 | 671 | 8,325 | 435 | 80 | 12.4 | 231 | 36 |
| 101.................. | 37,701 | 7,257 | 16,375 | 338 | 55 | 5 | 1,304 | 549 | 6,822 | 4,958 | 2,016 | 209 | 2,733 | 38 |
| 102.................. | 11,979 | 338 | 10,644 | 1 | 10 | . | 82 | 103 | 514 | 269 | 198 | 12 | 60 | 16 |
| 103.................. | 59,778 | 32,545 | 4.006 | 154 | 343 | ** | 2,597 | 578 | 13,673 | 4,612 | 1,029 | 538 | 3,045 | 270 |
| 104.................. | 20,383 | 3,332 | . . | 245 | 25 | 5 | 459 | 91 | 14,132 | 2,065 | 687 | 191 | 1,287 | 29 |
| 105.................. | 25,298 | 15,071 | - | 185 | 15 | - | 962 | 79 | 6,336 | 2,636 | 281 | 285 | 2,070 | 14 |
| 106.................. | 26,037 | 6,902 | $\cdots$ | 1,902 | 92 | 26 | 2,127 | 450 | 10,283 | 4,104 | 1,883 | 234 | 1,987 | 91 |
| 107.................. | 9,822 | 1,072 | 303 | 568 | 191 | 1. | 834 | 255 | 5,024 | 1,570 | 1,009 | 70 | 491 | 24 |
| 108.................. | 5,961 | 29 | 3,427 | 5 | 51 | 99 | 129 | 63 | 2,003 | 134 | 83 | 8 | 43 | 21 |
| 109.................. | 27,315 | 3,969 | ... | 1.016 | 240 | 1,641 | 3,215 | 520 | 12,549 | 3,760 | 1,597 | 480 | 1,683 | 505 |
| 110.................. | 24,552 | 9,109 | . ${ }^{\text {c }}$ | 238 | 288 | 688 | 1,071 | 509 | 1,489 | 922 | 488 | 58 | 376 | 237 |
| 111.................. | 9,906 | 674 | . $\cdot$ | 930 | 431 | 3.970 | 891 | 244 | 1,461 | 1,197 | 649 | 73 | 475 | 108 |
| 112.................. | 34,472 | 5,757 | -•• | 4,363 | 451 | 1.011 | 8,459 | 1,362 | 5,485 | 7,451 | 2,979 | 546 | 3,926 | 153 |
| 213.................. | 19,984 | 1,930 | 8 | 1,014 | 116 | 930 | 2,797 | 856 | 8,902 | 3,168 | 1,768 | 209 | 1,191 | 263 |
| 114.................. | 5,212 | 163 | 2,266 | 5 | 171 | 259 | 528 | 352 | 1,111 | 286 | 222 | 10 | 54 | 71 |
| 115.................. | 23,84.7 | 790 | 430 | 282 | 1,351 | 10,263 | 1,101 | 5,399 | 1,715 | 1,302 | 1,133 | 12 | 157 | 1,214 |
| 116................... | 42,223 | 2,644 | 6,165 | 642 | 1,159 | 13,294 | 8,783 | 2,759 | 3,612 | 3,017 | 2,346 | 62 | 609 | 208 |
| 117.................. | 16, 247 | 771 | 1 | 129 | 980 | 6,581. | 1,381 | 2,973 | 2,201 | 627 | 413 | 47 | 167 | 603 |
| 128.................. | 15,977 | 102 | ... | 45 | 226 | 1,893 | 7,501 | 1,586 | 2,778 | 095 | 308 | 96 | 291 | 1,151 |
| 119.................. | 24,212 | 2,661 | -•• | 233 | 1,239 | 4,929 | 4.820 | 3,662 | 2,401 | 3,495 | 1,946 | 266 | 1,283 | 1,772 |

used to determine the value of sales for the following farm products:
Soybeans
Cowpeas
Peanuts
Field and seed
peas
Field seed crops
Potatoes
Cotton

Tobacco
Sugarcane
Sweet sorghums for sirup
Other field crops
Small fruits
Tree fruits, nuts, and grapes
Wool
Mohair
The value of crops sold estimated for crops for which the quantity sold was not obtained by Census enumerators and for crops for which it could not be assumed that all the crop was sold, totalled approximately $\$ 2,775$ million and comprised approximately 11.3 percent of all farm products sold in the United States.

Comparisons of value of farm products sold by type of farm.The gross value of farm products sold does not indicate accurately the relative levels of production and net income for the various types of farms. In the case of some types of farms-for example cotton and cash-grain farms-the value of farm products sold provides a reasonably accurate measure of farm production. In the case of livestock type of farms, in many areas the value of sales may overstate the level of farm production because of the value of products added by livestock purchased then sold, and by feed purchased.

Farms by economic class.-A classification of farms by economic class was made for the purpose of segregating groups of farms that are somewhat alike in their characteristics and size of operation. This classification was made in order to present an accurate description of the farms in each class and in order to provide basic data for an analysis of the organization of agriculture.

The classification of farms by economic class was made on the basis of three factors; namely, total value of all farm products sold, number of days the farm operator worked off the farm, and the relationship of the income received from nonfarm sources by the operator and members of his family to the value of all farm products sold. Farms operated by institutions, experiment stations, grazing associations, and community projects were classified as abnormal, regardless of any of the three factors.

For the purpose of determining the code for economic class and type of farm, it was necessary to obtain the total value of farm products sold as well as the value of some individual products sold. The total value of farm products sold was obtained by adding the reported or estimated values for all products sold from the farm. The value of livestock, livestock products except wool and mohair, vegetables, nursery and greenhouse products, and forest products was obtained by the enumerator from the farm operator for each farm. The enumerator also obtained from the farm operator the quantity sold for corn, sorghums, small grains, hays, and small fruits. The value of sales for these crops was obtained by multiplying the quantity sold by State average prices. The quantity sold was estimated for all other farm products. The entire quantity produced for wool, mohair, cotton, tobacco, sugar beets for sugar, sugarcane for sugar, broomcorn, hops, and mint for oil was estimated as sold. To obtain the value of each product sold, the quantity sold was multiplied by State average prices.

In making the classification of farms by economic class, farms were grouped into two major groups, namely, commercial farms and other farms. In general, all farms with a value of sales of farm products amounting to $\$ 1,200$ or more were classified as commercial. Farms with a value of sales of $\$ 250$ to $\$ 1,199$ were classified as commercial only if the farm operator worked off the farm less than 100 days or if the income of the farm operator and members of his family received from nonfarm sources was less than the total value of all farm products sold.

Commercial farms were divided into six groups on the basis of the total value of all farm products sold, as follows:

| Class of farm | $\begin{array}{c}\text { Value of farm } \\ \text { products }\end{array}$ |  |
| :---: | :---: | :---: |
| I sold |  |  |$\}$

*Provided the farm operator worked off the farm less than 100 days, and provided the lncome the farm operator and members of his family recelved from nonfarm sources was less than the value of all farm products sold.

## DEFINITIONS AND EXPLANATIONS

Definitions and explanations are presented only for those items for which the table descriptions are considered inadequate. The definitions consist primarily of a résume of the questionnaire wording, occasionally supplemented by the more essential parts of instructions given to the enumerators. For the exact phrasing of the inquiries and of the instructions included on the questionnaire, reference should be made to the facsimile of the 1954 Agriculture Questionnaire shown in the Appendix of Volume II of the reports of the 1954 Census of Agriculture.

An analysis of the inquiries included on the questionnaires and of the data obtained is shown in Volume II, General Report, Statistics by Subjects, United States Census of Agriculture, 1954. The General Report presents statistics for States by subject matter.

## General Farm Information

Date of enumeration.-The enumeration of the 1954 Census of Agriculture was made during the latter part of 1954. The 1954 Census beginning dates were varied by areas or States, ranging from October 4 to November 8. In general, the varied starting dates were based upon (1) selecting dates late enough for the enumeration to follow the harvesting of the bulk of important crops, (2) setting the dates early enough to avoid undesirable weather and travel conditions during the enumeration, and (3) arranging for the enumeration to be substantially completed prior to customary dates when farm operators move from one farm to another.

Information for inventory items is based on the situation as of the actual day of enumeration. Data on acreage and quantity of crops harvested are for the crop year 1954. Data on sales of crops relate to crops harvested in the year 1954 regardless of when sold; data on sales of livestock products relate to the production and sales during the calendar year 1954. Since the period to be included was not yet completed for some items at the time of enumeration, special emphasis was placed upon including accurate estimates for such items for the remainder of the period. For example, the question relating to dairy products stated, "Be sure to include dairy products which you will sell before January 1, 1955."

A farm.-For the 1954 Census of Agriculture, places of 3 or more acres were counted as farms if the annual value of agricultural products, exclusive of home-garden products, amounted to $\$ 150$ or more. The agricultural products could have been either for home use or for sale. Places of less than 3 acres were counted as farms only if the annual value of sales of agricultural products amounted to $\$ 150$ or more. Places for which the value of agricultural products for 1954 was less than these minima because of crop failure or other unusual conditions, and places operated at the time of the Census for the first time were counted as farms if normally they could be expected to produce these minimum quantities of agricultural products.

All the land under the control of one person or partnership was included as one farm. Control may have been through ownership, or through lease, rental, or cropping arrangement.

For the 1954 Census, enumerators were instructed to obtain an agricultural questionnaire for all places that the operator considered a farm and for all places having during 1954 (1) any hogs, cattle, sheep, or goats; (2) any crops such as corn, oats, hay, or tobacco; (3) 20 or more chickens, turkeys, and geese; (4) 20 or more fruit trees, grapevines, and planted nut trees; or (5) any vegetables, berries, or nursery or greenhouse products grown for sale. Thus, agriculture questionnaires were filled for more places than those qualifying as farms.

The determination as to which reports were to be included in the tabulations as farms was made during the central office processing of questionnaires.

Farm operator.-A "farm operator" is a person who operates a farm, either performing the labor himself or directly supervising it. He may be an owner, a hired manager, or a tenant, renter, or sharecropper. If he rents land to others or has land cropped for him by others, he is listed as the operator of only that land which he retains. In the case of a partnership, only one partner was included as the operator. The number of farm operators is considered the same as the number of farms.

Farms reporting or operators reporting.-Figures for farms reporting or operators reporting represent the number of farms, or farm operators, for which the specified item was reported. For example, if there were 6,922 farms in a subregion and only 6,465 had chickens over 4 months old on hand, the number of farms reporting chickens would be 6,465 . The difference between the total number of farms and the number of farms reporting an item represents the number of farms not having that item, provided the inquiry was answered completely for all farms.

For some of the items, such as the residence of the operator, for which reports were to have been obtained for all farms, figures are given for the number of farms not reporting. The number of farms, or operators, not reporting indicates the extent of the incompleteness of the reporting for the item.

Land in farms.-The acreage designated "land in farms" includes considerable areas of land not actually under cultivation and some land not used for pasture or grazing. All woodland and wasteland owned by farm operators, or included in tracts rented from others, is included as land in farms unless such land was held for other than agricultural purposes, or unless the acreage of such land held by a farm operator was unusually large. If a place had 1,000 or more acres of land not being used for agricultural purposes and less than 10 percent of the total acreage in the place was used for agricultural purposes, the nonagricultural land in excess of the number of acres used for agricultural purposes was excluded from the farm area. In applying this rule, land used for crops, for pasture, or grazing, and land rented to others were considered to be land for agricultural purposes. On the other hand, land was defined as nonagricultural when it was woodland not pastured, or in house and barn lots, roads, lanes, ditches, or wasteland.

Except for open range and grazing land used under government permit, all grazing land was to be included as land in farms. Land used rent free was to be included as land rented from others. Grazing lands operated by grazing associations were to be reported in the name of the manager in charge. All land in Indian reservations used for growing crops or grazing livestock was to be included. Land in Indian reservations not reported by individual Indians or not rented to non-Indians was to be reported in the name of the cooperative group using the land. Thus, in some instances the entire Indian reservation was reported as one farm.

Land in farms according to use.-Land in farms was classified according to the use made of it in 1954. The classes of land are mutually exclusive, i.e., each acre of land was included only once even though it may have had more than one use during the year.

The classes are as follows:
Cropland harvested.-This includes land from which crops were harvested; land from which hay (including wild hay) was cut; and land in small fruits, orchards, vineyards, nurseries, and greenhouses. Land from which two or more crops were reported as harvested was to be counted only once.
The enumerator was instructed to check the figure for cropland harvested for each farm by adding the acreages of the individual crops reported and subtracting the acres of land from which two crops were harvested. This procedure was repeated during the central office editing process for farms with 100 or more acres of cropland harvested.
If the harvested cropland was used for other purposes, either before or after the harvest of a crop, the enumerator was specifically instructed to report the acreage only under cropland harvested.
Cropland used only for pasture.-In the 1954 Census, the enumerator's instructions stated that rotation pasture and all other cropland that was used only for pasture were to be included under this class. No further definition of cropland pastured was given the farm operator or enumerator. Permanent open pasture may, therefore, have been included under this item or under "other pasture," depending on whether the enumerator or farm operator considered it as cropland.

Cropland not harvested and not pastured. -This item includes idle cropland, land in soil-improvement crops only, land on which all crops failed, land seeded to crops for harvest after 1954, and cultivated summer fallow.

In the Western States, this class was subdivided to show separately the acres of cultivated summer fallow. In these States, the acreage not in cultivated summer fallow represents largely crop failure.

In the States other than the Western States, this general class was subdivided to show separately the acres of idle cropland (not used for crops or for pasture in 1954). In these States, the incidence of crop failure is usually low. It was expected that the acreage figure that excludad idle land would reflect the acreage in soil-improvement crops. However, the 1954 crop year was one of low rainfall in many Eastern and Southern States and, therefore, in these areas the acreage of cropland not harvested and not pastured includes more land on which all crops failed than would usually be the case.

Cultivated summer fallow.-This item includes cropland that was plowed and cultivated but left unseeded for several months to control weeds and conserve moisture. No land from which crops were harvested in 1954 was to be included under this item.
Woodland pastured.-This includes all woodland that was used for pasture or grazing. The questionnaire contained the following instruction: "Include as woodland all wood lots and timber tracts and cutover land with young trees which have or will have value as wood or timber."

Woodland not pastured.--This includes all woodland that was not used for pasture or grazing. Unusually large tracts of timberland reported as woodland not pastured were excluded from the tabulations of land in farms when it was evident that such land was held primarily for nonagricultural purposes. The definition for woodland, as stated above, was used also for enumerating woodland not pastured.

Other pasture (not cropland and not woodland). This includes rough and brush land pastured and any other land pastured that the respondent did not consider as either woodland or cropland.

Improved pasture.-This item includes land in "other pasture" on which one or more of the following practices had been used: Liming, fertilizing, seeding to grasses or legumes, irrigating, draining, or controlling weeds and brush. The question on improved pasture was included in 1954 for the first time.
Other land (house lots, roads, wasteland, etc.).-This item includes house lots, barn lots, lanes, roads, ditches, and wasteland. It includes all land that does not belong under any of the other land-use classes.
In addition to the complete classification of land in farms according to use, the tables also present data for three summary classifications as follows:

Cropland, total.-This includes cropland harvested, cropland used only for pasture, and cropland not harvested and not pastured.

Land pastured, total.-This includes cropland used only for pasture, wondland pastured, and other pasture (not cropland and not woodland).

Woodland, total.-This includes woodland pastured and woodland not pastured.
Value of land and buildings.-The value to be reported was the approximate amount for which the land and the buildings on it would sell. This item was obtained for only a sample of the farms; however, the value was not reported for all the farms comprising the sample.

Many problems, not encountered in enumerating most agricultural items, are involved in obtaining farm real-estate values. Most enumerated items require the respondent to make a statement based upon fact. It may be the number and value of farm animals sold alive during the year or the number of lambs under 1 year old on the place. In either case, only information as to activities during a specified period, or the situation as of a stated time, is required. This information is based upon actual transactions or existing conditions. But the estimation of the value of land and buildings is based largely upon opinion. In the event a farm had been recently purchased, answers could be based upon that experience. But many farms have not changed hands for many years, nor are they currently for sale. In such cases, farm operators may have no clear basis for estimating the value In making an intelligent estimate, a respondent needs, first, to estimate the prevailing market value in the community. Secondly, he must in some way add to or subtract from this base to allow for his farm's special characteristics. In many cases, a farm operator who would not sell his place under any circumstances may be inclined to give a "market value" that is unreasonably high. Some operators who had purchased their real estate during periods of relatively low prices may give an estimate that is unduly influenced by that experience. Furthermore, the extent of variation known to exist in real-estate values makes it difficult to establish checking procedures that will disclose inaccurate estimates.

Only average values of land and buildings per farm and per acre are presented in this report. A total value of the land and buildings for States, geographic divisions, and the United States, are presented in Volume II.
Irrigated land in farms.-This relates only to that part of the land in irrigated farms to which water was applied. However, for Arkansas and Louisiana the total for irrigated land does not include land used solely for pasture or grazing. For the 17 Western States and for Arkansas, Florida, and Louisiana, this total does not include irrigated cropland that was not harvested and not pastured.

Fertilizer.-The 1954 questionnaires contained inquiries on the tonnage and cost of fertilizers and the acreage on which they were used during the calendar year 1954. Fertilizer and lime used on the place were to be included regardless of whether the landowner, tenant, or both paid for them. Fertilizer was to include only commercial fertilizer or fertilizing material. No specific mention was made of basic slag. It was thought that this byproduct of steel production would be considered as a fertilizing material. Barnyard manure, straw, refuse materials, and soil conditioners were to be excluded.

Acres on which purchased materials were used were to be reported for both lime and fertilizer. In case fertilizer was applied to the same crop more than once in 1954, instructions were to report acres of land only once but to report the total tonnage used. The acres fertilized and tons applied were obtained separately for selected crops. The selected crops varied by regions. This arrangement made it possible to obtain data for crops most commonly fertilized in the region.

In the South, some landlords, who conducted some farming operations themselves, reported for their operations fertilizer paid for wholly or in part by them for use on their teaant-operated
land. The tenants may also have reported the fertilizer. During the editing procedure such reports, when detected, were adjusted to prevent duplication in the reports for fertilizer by landlords and their tenants.

Residence of farm operator.-Farm operators were classified by residence on the basis of whether or not they lived on the farm operated. Some of those not living on the farm operated lived on other farms. When a farm operator rented land from others or worked land on shares for others and had the use of a dwelling as part of the rental arrangement, the enumerator was instructed to consider the dwelling a part of the farm operated. The dwelling assigned may have been on a tract other than that assigned for crops. In a few cases, the enumerator failed to indicate the residence of the farm operator. Differences between the total number of farms and the number of farm operators by residence represent underreporting of this item.
Farms by size.-Farms were classified by size according to the total land area of each farm. The same classification was used for all States.
In analyzing size-of-farm statistics, consideration should be given to the definition of a farm for Census purposes. Census farms are essentially operating units, not ownership tracts. If a landlord has croppers or other tenants, the land assigned each cropper or tenant is a separate farm even though the landlord may operate the entire holding essentially as one farm in respect to supervision, equipment, rotation practices, purchase of supplies, or sale of products.

Farms by color of operator--Farm operators are classified by color as "white" and "nonwhite." Nonwhite includes Negroes, Indians, Chinese, Japanese, and all other nonwhite races.
Farms by tenure of operator.-Farm operators are classified according to the tenure under which they hold their land on the basis of the replies to the inquiries on total land owned, total land rented from others, total land managed for others, and land rented to others.

Owners, part owners, and managers.- Full owners own land but do not retain any land rented from others. Part owners own land and rent land from others. Managers operate farms for others and are paid a wage or salary for their services. Persons acting merely as caretakers or hired as laborers are not classified as managers. If a farm operator managed land for others and also operated land on his own account, the land operated on his own account was considered as one farm and the land managed for others as a second farm. If a farm operator managed land for two or more employers all the land managed was considered one farm.

Tenants rent from others or work on shares for others all the land they operate.

In subregions located in the South, figures are given for croppers. Croppers are crop-share tenants whose landlords furnish all work power. The landlords either furnish all the work animals or furnish tractor power in lieu of work animals. Croppers usually work under the close supervision of the landowners, or their agents, or another farm operator, and the land assigned them is often merely a part of a larger enterprise operated as a single unit.
Age of operator.-Farm operators were classified by age into six age groups.
Off-farm work and other income.- Many farm operators receive a part of their income from sources other than the sale of farm products from their farms. The 1954 Agriculture Questionnaire included several inquiries relating to work off the farm and nonfarm income. These inquiries called for the number of days worked off the farm by the farm operator; whether other members of the operator's family worked off the farm; and whether the farm operator received income from other sources, such as sale of products from land rented out, cash rent, boarders, old age assistance, pensions, veterans' allowances, unemployment compensation, interest, dividends, profits from nonfarm business, and help from other members of the operator's family. Another inquiry asked whether the income of the operator and his family
from off-farm work and other sources was greater than the total value of all agricultural products sold from the farm in 1954. Off-farm work was to include work at nonfarm jobs, businesses, or professions, whether performed on the farm premises or elsewhere; also work on someone else's farm for pay or wages. Exchange work was not to be included.

The purposes of these four inquiries were (1) to obtain information in regard to the extent that farm operators performed off-farm work and the relation of other nonfarm income to the value of farm products sold and (2) to provide a basis for the classification of farms by economic class. The intent of the inquiry in regard to whether or not a member of the family had a nonfarm job, and the inquiry regarding income of the farm operator from other nonfarm sources, was to obtain more accurate replies to the inquiry regarding the relationship of the income from off-farm work and other sources to the total value of all agricultural products sold.

Classiflcation of farms by class of work power.-Farms were grouped by class of work power on the basis of whether horses, mules, or tractors (wheel or crawler, but not garden) were reported. This classification does not present a complete picture of the work power used on all farms. For some farms, all the work power may be furnished by the landlord; and for some farms, all the work power may be hired. Thus, farms hiring all of the work power from others and those having it furnished are shown as having no work power, unless the work animals or tractors were kept on the tenant-operated tract.

Specifled facilities and equipment.-Inquiries were made in 1954 for a sample of farms to determine the presence or absence of selected items on each place such as (1) telephone, (2) piped running water, (3) electricity, (4) television set, (5) home freezer, (6) electric pig brooder, (7) milking machine, and (8) power feed grinder. Such facilities or equipment were to be counted even though temporarily out of order. Piped running water was defined as water piped from a pressure system or by gravity flow from a natural or artificial source. The enumerator's instructions stated that pig brooders were to include those heated by an electric heating element, by an infra-red or heat bulb, or by ordinary electric bulbs. They could be homemade.

The number of selected types of other farm equipment was also obtained for a sample of farms. The selected kinds of farm equipment to be reported were (1) grain combines (for harvesting and threshing grains or seeds in one operation) ; (2) corn pickers; (3) pick-up balers (stationary ones not to be reported); (4) field forage harvesters (for field chopping of silage and forage crops); (5) motortrucks; (6) wheel tractors (other than garden) ; (7) garden tractors; (8) crawler tractors (tracklaying, caterpillar) ; (9) automobiles; and (10) artificial ponds, reservoirs, and earth tanks.

Wheel tractors were to include homemade tractors but were not to include implements having built-in power units such as self-propelled combines, powered buck rakes, etc. "Pick-up" and truck-trailer combinations were to be reported as motortrucks. School buses were not to be reported, and jeeps and station wagons were to be included as motortrucks or automobiles, depending on whether used for hauling farm products or supplies, or as passenger vehicles.

Farm labor. -The farm-labor inquiries for 1954, made on a sample basis, called for the number of persons doing farm work or chores on the place during a specified calendar week. Since starting dates of the 1954 enumeration varied by areas or States, the calendar week to which the farm-labor inquiries related varied also. The calendar week was September 26 -October 2 or October 24-30. States with the September 26-October 2 calendar week were: Arizona, California, Colorado, Connecticut, Florida, Idaho, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Ten-
nessee, Texas, Utah, Vermont, Washington, Wisconsin, and Wyoming. States with the October 24-30 calendar week were: Alabama, Arkansas, Delaware, Georgia, Illinois, Indiana, Iowa, Maryland, Mississippi, Missouri, North Carolina, Ohio, South Carolina, Virginia, and West Virginia. Farm work was to include any work, chores, or planning necessary to the operation of the farm or ranch business. Housework, contract construction work, and labor involved when equipment was hired (custom work) were not to be inoluded.

The farm labor information was obtained in three parts: (1) Operators working, (2) unpaid members of the operator's family working, and (3) hired persons working. Operators wero considered as working if they worked 1 or more hours; unpaid members of the operator's family, if they worked 15 or more hours; and hired persons, if they worked any time during the calendar week specified. Instructions contained no specifications regarding age of the persons working.

Data shown for earlier Censuses are not fully comparable with those for 1954, primarily because of differences in the period to which the data relate. The data for 1954 were purposely related to a period of peak farm employment.

Regular and seasonal workers.-Hired persons working on the farm during the specified week were classed as "regular" workers if the period of actual or expected employment was 150 days or more during the year, and as "seasonal" workers if the period of actual or expected employment was less than 150 days. If the period of expected employment was not reported, the period of employment was estimated for the individual farm after taking into account such items as the basis of payment, wage rate, expenditures for labor in 1954, and the type and other characteristics of the farm.
Speciffed farm expenditures.-The 1954 Census obtained data for selected farm expense items in addition to those for fertilizer and lime. The expenditures were to include the total specified expenditures for the place whether made by landlord, tenant, or both.

Expenditures for machine hire were to include any labor included in the cost of such machine hire. Machine hire refers to custom machine work such as tractor hire, threshing, combining, silo filling, baling, ginning, plowing, and spraying. If part of the farm products was given as pay for machine hire, the value of the products traded for this service was to be included in the amount of expenditures reported. The cost of trucking, freight, and express was not to be included.

Expenditures for hired labor were to include only cash payments. Expenditures for housework, custom work, and contract construction work were not to be included.

Expenditures for feed were to include the expenditures for pasture, salt, condiments, concentrates, and mineral supplements, as well as those for grain, hay, and mill feeds. Expenditures for grinding and mixing feeds were also to be included. Payments made by a tenant to his landlord for feed grown on the land rented by the tenant were not to be included.

Expenditures for gasoline and other petroleum fuel and oil were to include only those used for the farm business. Petroleum products used for the farmer's automobile for pleasure or used exclusively in the farm home for heating, cooking, and lighting were not to be included.

## Crops

Crops harvested.--The agriculture questionnaire was organized to make possible the listing of acreage and quantity harvested for each crop. To facilitate the enumerator's work, specific crop questions were varied according to areas (usually each area comprised a State or a group of States). Regionalizing questionnaires made it possible to devote special attention to the more important crops for a given area and also to use the unit of measure that was in most common use in the area.

In most instances, the harvested acreage that was reported for individual crops represents the area harvested for the 1954 crop year. An exception was made for land in fruit orchards, vineyards, and planted nut trees; in this case the acreage represents that in both bearing and nonbearing trees and vines as of the date of enumeration (usually October or November 1954). The acreage harvested for various crops is often less than the acreage planted.

With three exceptions, citrus fruits, olives, and avocados, figures for quantity harvested represent the amount actually harvested during the 1954 crop year. Citrus fruit production was to be reported for the 1953-1954 marketing season (from the bloom of 1953). Olive and avocado production for California related to the quantity harvested from the 1953 bloom (an instruction to enumerators referred to the marketing season which began October 1, 1953). In Florida, the avocado production period, according to the Enumerator's Instruction Book, was to include the quantity harvested from the 1953 bloom (the harvesting season extending from July 1, 1953, to June 30, 1954).

The unit of measure used for reporting the quantity harvested for some crops varied from State to State. However, the data in quantity harvested are shown in a common unit of measure. Conversions were made on the basis of standard weights and measures. The conversion factors used are given in Chapters VII and VIII of Volume II of the reports for the 1954 Census of Agriculture.

Data are shown for the important kinds of crops for each type of farm.

Annual legumes.-Acres and quantity harvested for the most important uses of soybeans, cowpeas, and peanuts, as well as the total acreage grown for all purposes, were obtained for areas where these crops are grown extensively. The total acreage grown for all purposes includes some acreage not harvested as the acreage plowed under for green manure was included. In certain States, separate figures were obtained for the acres grown alone and the acres grown with other crops. For the 1954 Census, enumerators were instructed to report acres and value of sales for cowpeas harvested for green peas with vegetables harvested for sale.

Hay crops.-The tables contain data regarding the total acres and tons for each important kind of hay. Sorghum, soybean, cowpea, and peanut hays are not shown with the hay crops as separate questions were provided in those States where these crops are important. Alfalfa hay includes any production which was dehydrated. The tonnage of alfalfa hay for dehydration (as well as that for other hays but not for grass silage) is given on a dry-weight basis.

Enumerators and farmers were instructed to report the total quantity of hay harvested from all cuttings, but to report only once the acres of land from which more than one cutting was made. For 1954, alfalfa hay included alfalfa and alfalfa mixtures. Likewise, clover and timothy hay included clover and timothy and mixtures of clover and grasses.

Irish potatoes and sweetpotatoes.-The 1954 Census inquiry for both Irish and sweet potatoes called for acres harvested and the quantity harvested. If less than 20 bushels (or 10 bags in specified States) of Irish potatoes or if less than 20 bushels of sweetpotatoes were harvested, the enumerator was instructed to report the quantity harvested, but not the area harvested. This method of reporting was used in order to facilitate the enumeration of potatoes grown on small plots for home use.

Tree fruits, nuts, and grapes.-For 1954, the acreage in fruit orchards, groves, vineyards, and planted nut trees was not enumerated if there were less than 20 fruit or nut trees and grapevines on the farm.

In the regional questionnaire for Arizona and California, the acreage in each individual fruit and nut crop was secured.

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The acreage in fruit and planted nut trees and grapevines does not usually include the acreage of wild pecans that were not planted.

Nursery and greenhouse products.-The agriculture questionnaire included three inquiries relating to horticultural-specialty crops. One called for acres and value of sales in 1954 of nursery products (trees, shrubs, vines, ornamentals, etc.). Another asked for the area grown under glass; area grown in the open; and value of sales of cut flowers, potted plants, florist greens, and bedding plants. The third called for area grown under glass or in house; area grown in the open; and value of sales of vegetables grown under glass, flower seeds, vegetable seeds, vegetable plants, bulbs, and mushrooms.

Value of all farm products sold.-The data on the value of all farm products sold represent estimates based upon the tabulation of data for only a sample of approximately 20 percent of the farms. For the sale of livestock and livestock products, the estimates are based upon the tabulation of data for all livestock and livestock products sold. For field crops, the estimates are based upon the tabulation of data for field crops representing 98 percent of all field crops sold and upon estimates of the value of field crops sold for the other field crops sold. For fruits and muts, the estimates of values are based upon the tabulation of data by economic class of farm for fruits and nuts representing 80 percent of the value of all fruits and nuts sold and upon estimates of the value of fruits and nuts sold by economic class of farm for the other fruit-and-nut crops sold. (For an explanation of the methods used for computing the value of farm products sold and a statement of the reliability of the data, see Chapter IX of Volume II of the reports for the 1954 Census of Agriculture.)

## Livestock and Poultry

The 1954 questionnaire called for an inventory of or for some phase of production for all the important kinds of farm animals and poultry. Respondents were asked for the numbers on hand on the day of enumeration. Livestock were to be enumerated on the place on which they were located, regardless of ownership. Livestock grazing in national forests, grazing districts, or on open range at the time of enumeration were to be reported for the farm or ranch to which they belonged.

The time of the year at which livestock and poultry were enumerated influences greatly the resulting data. Therefore, the date of the enumeration needs to be considered when considering the 1954 totals.

Milk sold.-The tables contain figures on total milk sold. These figures represent the total equivalent of milk and pounds of butterfat in cream sold in terms of whole milk. Pounds of butterfat were converted into gallons or pounds of whole milk, as shown by data furnished by the Agricultural Marketing Service of the United States Department of Agriculture.

Sows and gilts farrowing.-The 1954 questionnaire asked for spring litters by an inquiry on the number of sows and gilts farrowing between December 1, 1953, and June 1, 1954, and for fall litters by an inquiry on the number of sows and gilts farrowing since June 1, but before December 1, 1954. The classification for farms reporting sows and gilts farrowing or to farrow, by number farrowing, was made on the basis of the total sows farrowing or to farrow between December 1, 1953, and December 1, 1954.

Goats and mohair.--In Louisiana, New Mexico, Oklahoma, Oregon, Texas, Washington, and in Missouri, special questions were provided for reporting goats and mohair. These questions called for the number of all goats, Angora goats, and other goats, separately, and for the number of goats clipped and pounds of mohair clipped in 1954.

Livestock products.-The inquiries regarding livestock production and sales relate to the calendar year 1954, and those for sales of livestock products relate to the products produced in 1954.

Sales of live animals.-The 1954 questionnaire called for the number and value of sales of animals sold alive from the place during 1954. Since the 1954 Census was a fall enumeration, an additional problem was involved in getting information on animals sold alive. It was necessary not only to ask the respondent for sales he had made during 1954 prior to the date of the enumeration, but also for an estimate of sales he would make during the remainder of 1954 . Some respondents may not have reported sales to be made after the enumeration but before December 31, 1954.

## Source and Reliability of Data

Source of data.- The data presented in this report are estimates based upon data for the 1954 Census of Agriculture. The tabulations on which the estimates were made included approximately 20 percent of all farms in the United States. For a description of the sample and sampling procedures, see page XIX of the Introduction to Volume II of the reports for the 1954 Census of Agriculture.

Method of estimation.-Data tabulated for the sample of farms were expanded to represent figures for all farms. The expended figure for an item was obtained by multiplying by five the tabulated total for that item for the farms in the 20 percent part of the sample and adding the total for the specified farms.

Reliability of estimates based on the sample.-The estimates based on the tabulation of data for a sample of farms are subject to sampling errors. Approximate measures of the sampling reliability of estimates are given in Table 2 for farms reporting and for item totals. These measures indicate the general level of sampling reliability of the estimates, but do not include adequate allowances for sources of error other than sampling variation as, for example, errors in original data furnished by farmers. Sources of error other than sampling may be relatively more important than sampling variation.

In general, the measures of sampling reliability presented are conservative in that they tend to overestimate the variations in sample estimates, because (1) the predicted limits of error do not always take fully into consideration that complete data were tabulated for all specified farms and (2) the maximum figures intended to serve for all economic areas were used. Consequently, there is a tendency to overestimate the variations in the sample, especially for groups with large numbers of farms or for groups for which the totals for specified farms represent a high percentage of the item totals.

Data in Tables 2 and 3 are given to assist in determining the general level of sampling reliability of estimated totals. In Table 3 a list of the items is given and the level of sampling reliability as shown in Table 2 is indicated. By referring to Table 2 in the
column for the level of sampling reliability designated in Table 3 the sampling error according to the number of farms reporting may be obtained. For farms reporting, the indicated level of sampling is level 1. Table 2 shows percentage limits such that the chances are about 68 in 100 that the difference between the estimates based on the sample and the figure that would have been obtained from a tabulation for all farms would be approximately within the limit specified. However, the chances are 99 in 100 that the difference would be less than two and one-half times the percentage given in the table.

The data in Table 2 indicate that when the number of farms reporting specified items is small, the item totals are subject to relatively large sampling errors. Nevertheless, the considerable detail for every classification for each item is presented to insure maximum usefulness for appraising estimates for any combination of items that may be desired.

Percentage figures and averages derived from the tables will generally have greater reliability than the estimated totals; also, significant patterns of relationships may sometimes be observed even though the individual data are subject to relatively large sampling errors.

Table 2.-Sampling Reliability of Estimated Number or Farms, Farms Reporting, and Totals for Specified Items, Subregions, and United States: Census of 1954

| If the estimated number of farms or farms reporting is- | Then the chanees are about 2 in 3 that the estimated number would differ from result of a comploto tabulation by less than- |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Level 1 : | Level 2 | Level 3 | Level 4 |
|  | Percent | Percent | Percent | Percent |
| 1,000 | 9.8 |  |  | 18 |
| 2,500 | 4.4 | 6.2 | 8.3 | 11 |
| 5,000. | 3.1 | 4.3 | 5.8 | 8.0 |
| 10,000. | 2.2 | 3.0 | 4.1 | ${ }^{5.6}$ |
| 25,000. | 1.4 | 2.0 | 2.6 | 3.5 |
| 60,000 | 1.0 | 1.4 | 1.9 | 2.5 |
| 100,000 | 0.7 | 0.9 | 1.3 | 1.8 |
| 250,000. | 0.4 | 0.6 | 0.8 | 1.2 |
| 500,000. | 0.3 | 0.4 | 0.6 | 0.8 |

${ }^{1}$ Level I should be used in determining the sampling reliablifty of estimated numbers of farms and farms reporting.

Differences in published data.-In some cases, the data in this report will differ slightly from those for the same item given in other reports for the 1954 Census of Agriculture, because, as a matter of economy, adjustments in the tabulations were not made when the differences were not great enough to affect the usefulness of the data. These differences usually amount to less than onehalf of one percent of the total for the item.

## Table 3.-Indicated Level of Sampling Reliabllity of Estimated Subregion and United States Totals For Specified Items: Census of 1954

To determine sampling rellability for an item, it is necessary to use this table to find out whith of the 4 levels of sampling reliability given in Table 2 to use. Reference is required, also, to the subrogion or United States table in order to obtain the number of farms reporting]


Note: Items whose level is indieated by an X may be approximated by using the ievel given in column headed "Total."

