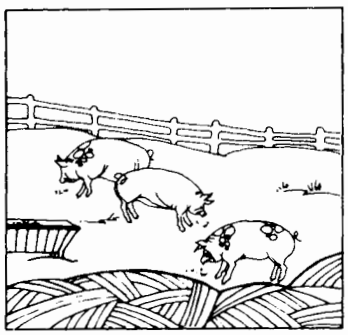
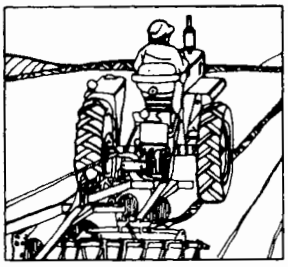
part 8

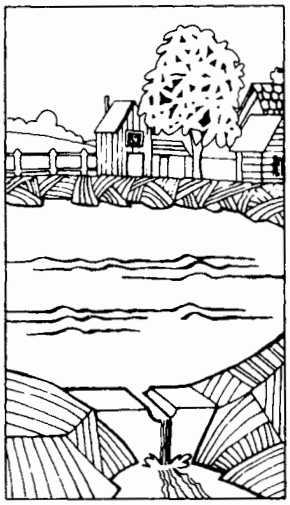
DAIRY

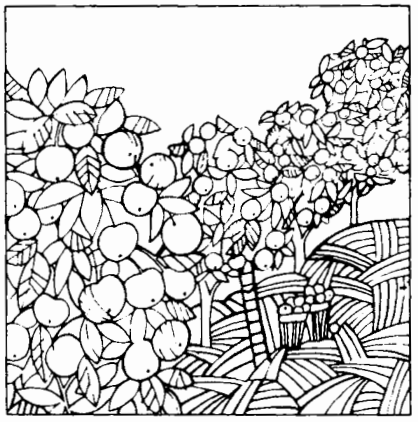
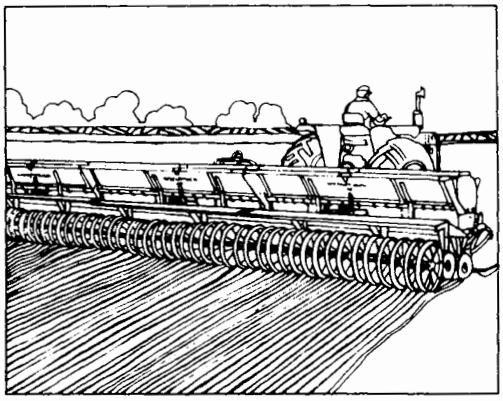
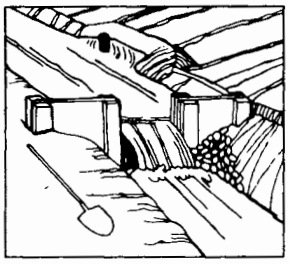
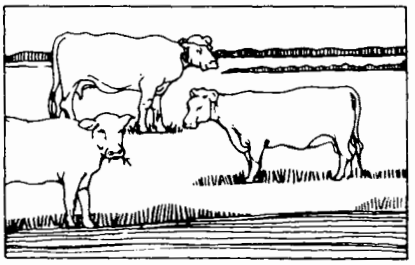
VOLUME V
SPECIAL REPORTS



1969 CENSUS OF AGRICULTURE

Issued September 1973

U. S. DEPARTMENT OF COMMERCE
Frederick B. Dent, Secretary
Sidney L. Jones, Assistant Secretary for Economic Affairs

Social and Economic Statistics Administration
Edward D. Failor, Administrator

BUREAU OF THE CENSUS
Vincent P. Barabba, Director

BUREAU OF THE CENSUS

Vincent P. Barabba, Director
Robert L. Hagan, Deputy Director
James W. Turbitt, Associate Director

AGRICULTURE DIVISION

J. Thomas Breen, Chief

REPORTS OF THE 1969 CENSUS OF AGRICULTURE

Individual County Reports

Eight-page reports have been issued for each county and State.

Volume I. Area Reports

A separate report has been published for each State, American Samoa, Guam, Puerto Rico, Trust Territory, and the Virgin Islands. The report consists of two sections. Section 1 contains State summary data, county summary of selected data, and miscellaneous items by counties; Section 2 contains the detailed county reports.

Volume II. General Report

Statistics by subject are presented in separate chapters with totals for the United States, regions, geographic divisions, and States. The nine chapters are being issued as individual reports as follows:

Chapter 1 General Information; Procedures for Collection, Processing, Classification
Chapter 2 Farms: Number, Use of Land, Size of Farm
Chapter 3 Farm Management, Farm Operators
Chapter 4 Equipment, Labor, Expenditures, Chemicals
Chapter 5 Livestock, Poultry, Livestock and Poultry Products
Chapter 6 Crops, Nursery and Greenhouse Products, Forest Products
Chapter 7 Value of Products, Economic Class, Contracts
Chapter 8 Type of Farm
Chapter 9 Irrigation and Drainage on Farms

Volume III. Agricultural Services

This new report contains data relating to agricultural services for the United States by State and county.

Volume IV. Irrigation

Data will be included on drainage basins, land irrigated, crop production on irrigated land, water conveyed, users, and types of organizations.

Volume V. Special Reports

Reports may contain data obtained from supplemental surveys, such as type of farm, horticulture, and farm finance; in addition to information obtained in the census.

Parts 1 to 9. Type-of-Farm Operations.—One for each of nine major type-of-farm classifications.
Part 10. Horticultural Specialties.
Part 11. Farm Finance.
Part 12. Ranking Agricultural Counties.
Part 13. Forms and Procedures.
Part 14. Procedural History.
Part 15. Graphic Summary.
Part 16. Coverage Evaluation.

Volume VI. Drainage of Agricultural Lands

This report will include agricultural drainage statistics collected from individual farms and from publicly organized drainage projects.

ACKNOWLEDGMENTS—As with any data collection effort of this type, credit is due first and foremost to the respondents, the farm operators, members of their families, and employees who filled out and returned the enterprise survey forms; they furnished the information tabulated and published in these reports. Many others made significant contributions.

The Department of Agriculture cooperated at all levels: Local employees in the county offices of the Agriculture Stabilization and Conservation Service, the Farmers Home Administration, the Federal Extension Service, and the Soil Conservation Service aided in the publicity and provided assistance to the farm operators who requested help in filling out the census forms correctly; personnel of the Economic Research Service and the Statistical Reporting Service were especially helpful in the determination of what data should be collected, and the tabulations that were needed.

Members of the Census Advisory Committee on Agriculture Statistics and representatives from public and private agencies and firms gave generously of their time and effort in establishing the data requirements and priorities for collection and publication of the information.

The press, radio, and television media, especially those relating to agribusiness activities, were most helpful in promoting awareness of the 1969 census among farm and ranch operators and enlisting their cooperation. **Charles Merzel,** International Statistical Programs Division, and **Jack H. Margolis,** Agriculture Division, were responsible for the systems and processing procedures, including clerical procedures.

A large part of the clerical and data-keying operations were performed in the Data Preparation Division, Jeffersonville, Ind., **Hobert A. Yerkey,** Chief, under the supervision of **Rex L. Pullin, Don L. Adams,** and **Rebecca Nesbitt. John A. Blackledge, William A. Harlan,** and **John C. Womack,** Agriculture Division, were responsible for the subject-matter review in Jeffersonville.

Computer processing was performed in the Computer Services Division under the supervision of **James R. Pepal.** Computer programing was performed in the Agriculture Division under the supervision of **Ralph A. Graham,** Branch Chief, assisted by **John Adkins.**

Orvin L. Wilhite, Assistant Division Chief for Agricultural Statistics and **Thomas D. Monroe,** Chief of the Livestock Branch, assisted by **Avon B. Floyd,** participated in the overall planning and supervised the preparation of the data-collection form, specifications for editing and tabulation, review of tabulations, and preparation of tables for this report on the Dairy Survey. The specifications for precomputer and computer edit were prepared by **John A. Branch,** who also reviewed the tables and prepared the text specifically related to the Dairy Survey. **Reginald Masano** prepared the formatting program. The computer edit program was written by **Charles C. King** and **Billy E. Stark; Billy E. Stark** wrote the tabulation program.

J. Jack Ingram, Assistant Division Chief for Research and Methodology, assisted by **Maurice R. Kniceley** and **Harold V. Edwards,** designed the sample and wrote the related text. The general part of the text was written by **Orvin L. Wilhite. Arnold L. Bollenbacher,** Chief of the Farm Economics Branch, assisted by **Ted J. McGrath,** prepared the agricultural labor tables and text. **Joseph A. Correll,** assisted by **John H. Barrett,** prepared the specifications for the fertilizer tables. **Helen D. Turner** assisted by **Janet W. Hall** was responsible for editing and liaison in the publications area.

The program was under the primary direction of **J. Thomas Breen,** Chief, Agriculture Division.

SUGGESTED CITATION

U.S. Bureau of the Census, Census of Agriculture, 1969
Volume V. Special Reports
Part 8. Dairy

U.S. Government Printing Office, Washington, D.C. 1973

LIBRARY OF CONGRESS CARD NO. 72-601370

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 - Price $6.90 Stock Number 0324-00229

UNITED STATES
EPARTMENT OF
OMMERCE
UBLICATION

1969 CENSUS OF AGRICULTURE

VOLUME V—SPECIAL REPORTS

Part 8

DAIRY

mber 6, 1973 U. S. DEPARTMENT OF COMMERCE • Social and Economic Statistics Administration • BUREAU OF THE CENSUS

CHANGE SHEET

The following changes should be made in table 6, volume V, part 8, Dairy, 1969 Census of Agriculture on the "PRINCIPLE" line for each State under "TOTAL MILK SALES."

	Column 4 1,000 LBS	Column 5 $1,000
Alabama	535 607	36 578
Arizona	505 205	33 623
Arkansas	411 882	24 608
California	7 233 533	418 921
Colorado	580 795	36 775
Connecticut	506 679	33 608
Delaware	94 857	5 904
Florida	1 521 104	117 300
Georgia	866 326	55 368
Hawaii	117 019	10 875
Idaho	824 551	44 268
Illinois	1 838 417	101 716
Indiana	1 369 461	80 159
Iowa	1 916 506	103 710
Kansas	1 101 654	61 657
Kentucky	1 101 820	63 745
Louisiana	828 282	53 950
Maine	461 820	30 776
Maryland	1 150 788	73 303
Massachusetts	520 827	34 738
Michigan	3 319 164	196 319
Minnesota	5 638 904	293 884
Mississippi	749 850	45 957
Missouri	1 484 859	84 307
Montana	180 987	10 394
Nebraska	610 047	32 516
Nevada	105 595	6 100
New Hampshire	267 305	17 336
New Jersey	512 799	32 419
New Mexico	271 320	17 455
New York	8 182 329	494 728
North Carolina	1 033 646	71 176
North Dakota	379 270	20 034
Ohio	3 096 609	184 011
Oklahoma	801 640	46 353
Oregon	673 852	41 921
Pennsylvania	5 461 775	343 257
Rhode Island	47 661	3 065
South Carolina	350 736	24 671
South Dakota	643 640	33 374
Tennessee	1 152 154	69 957
Texas	2 331 888	146 811
Utah	508 628	29 722
Vermont	1 609 011	103 125
Virginia	1 170 565	76 099
Washington	1 478 213	87 660
West Virginia	238 975	14 788
Wisconsin	13 518 618	728 900
Wyoming	70 329	4 166

CONTENTS

TABLES

TABLES—Continued

TABLES—Continued

Introduction

THE FARM ENTERPRISE SURVEYS

The first part of this text provides information that applies to the nine specialized type-of-farm enterprises included in the survey. The second, provides information specifically related to the enterprise for which data are presented in this book.

Authority, Area Covered, and Method

The 1971 Survey of Specialized Agriculture was conducted as part of the 1969 Census of Agriculture authorized by the Congress of the United States in "Title 13, United States Code—Census," Sections 142(a) and 193. The survey was conducted primarily by mail, and covers all States except Alaska.

History and Precedent

The 1971 Survey of Specialized Agriculture is the first that is devoted almost entirely to providing data at the State and county level, in addition to that obtained on the general census of agriculture report form. It is, however, the natural outgrowth of prior agriculture census-taking activities in the sense that it reflects the Bureau's continuing effort to make available information fully descriptive of current developments in our Nation's agriculture. In association with the 1950 and more recent censuses of agriculture, special supplemental surveys have been utilized to provide, on a sample basis, selected items of information not included in the general reports. In general, these were items for which United States and regional totals were needed, but for which State and county totals could not be justified.

Following World War II, industrial and technological advances in animal breeding and nutrition, in machinery, and in the use of chemicals for fertilization and for weed and insect control together with a number of other factors, accelerated the movement of agricultural management toward specialization. Special tabulations and analyses of data for several major types of farm for the United States and the geographic regions in which each had substantial significance were presented in volume III, part 9, chapters 1 to 9 of the published reports for the 1954 Census of Agriculture.

During the planning of the 1969 census program, it was recognized that specialization had attained a position that could not be adequately described by statistics limited to the national and regional levels. Accordingly, within the limits of the appropriated funds, adjustments were made to provide for specialized type-of-farm enterprise surveys that would provide supplemental data for States and for counties with significant amounts of the specified activities.

Background and Purpose

During the planning stage of each agriculture census, opportunity is provided to the various Federal and other government agencies, universities, news media, manufacturers, processors, marketers, farm organizations, and members of the general public to make known the items related to agricultural organization and production for which data are needed. The data demands made in preparation for the five most recent censuses of agriculture have included an increasing number of economic oriented items. More and more of these items are specialized in nature, and not appropriate for inclusion in a general report form directed to all farm operators.

The trend of these data demands has paralleled the movement of agriculture from generalized to specialized operations. The desire to lower the cost per unit of production has led to the development of tractors with more and more power and with an increasing variety of attachments; of specialized, often self-propelled tilling and harvesting machines; of chemicals for weed and insect control; of improved breeds of livestock and higher-yielding varieties of seeds. These developments have made it feasible for farm operators to handle more and more land. Indeed, the purchase cost of these larger, more specialized machines, and of the improved livestock and seeds, have made it economically mandatory for farm operators to handle more land, and to become more specialized in their agricultural operations. Because it has become increasingly advantageous, many farm operators have specialized in only one product, while others have reduced the number of products but have specialized in several products in order to make fuller use of labor and equipment throughout the year. Thus, the general farms that produce a variety of crops, poultry, livestock and their products have decreased in number and in variety of products, while specialization has increasingly become more representative of North American agriculture.

The purpose of the 1971 Survey of Specialized Agriculture was to collect relevant data specifically related to each of nine specialized types of agricultural production. A separate data collection form was used for each specialization so that the information collected could be restricted to items directly involved in the type of agricultural operation being conducted. Farms that in 1969 reported sales of at least $10,000 for each of two or more specialized operations were asked to complete the two or more related data collection forms. The results of the

survey are presented in nine separately published reports, as follows:

Volume V,
Part 1. Grains, Soybeans, Dry Beans and Dry Peas
2. Tobacco
3. Cotton
4. Sugar Crops, Potatoes, Other Specified Crops
5. Vegetables, Including Tomatoes and Melons
6. Fruits, Nuts, and Berries
7. Poultry
8. Dairy
9. Cattle, Hogs, Sheep, Goats

The agricultural products assigned to each of these fields of specialization are generally the same as for the corresponding type-of-farm classifications for which agricultural census data have been presented since 1959. A more detailed listing of the products comprising each type of specialization is given in the discussion of **sample selection.**

Scope of the Survey

The farm operators included in the 1971 Survey of Specialized Agriculture were a stratified sample selected from those who operated farms in 1969 with sales of at least $2,500. The sample rate varied by economic class and type of farm to provide estimates for quantitative items with an acceptable level of accuracy for publication at the county level for those counties with significant activity and at the same time to minimize the respondent burden.

These surveys were neither intended nor designed to provide universe totals for the items included in the survey at the county, State, or national level. In general, no attempt was made to contact successors to those operators in the sample who had ceased agricultural operations in 1969 or later. Neither was any attempt made to contact newly established operators. Further, for those sample farms still operating in 1971, no attempt was made to obtain data for any additional specialized operations that had not been conducted in 1969, or if conducted, that were not large enough to be included in the survey. Partially offsetting the effects of these omissions, however, those who had enlarged their specialized operations since 1969 were asked to include the entire 1971 specialized operation in their reports.

These surveys were designed to provide information about the extent to which various production and other practices and facilities, including specialized equipment, are reported on farms having the specialized enterprises, and to provide data for those counties where the enterprise has some significance. This information is intended to serve as the basis for further analysis and estimates with regard to related data from other sources.

Development of Data Collection Forms, Content, and Format

Development of the specialized report forms began in the latter part of 1968. The principal items included in the report forms were suggested in the meetings of the Census Advisory Committee on Agriculture Statistics in April and October 1968 and in written suggestions received from various governmental agencies and private organizations during 1968 and 1969. These suggestions were augmented and refined by staff research and consultation with the suggesting agencies and organizations. Particularly noteworthy was the assistance provided by the Economic Research Service, U.S. Department of Agriculture.

In May 1969, draft versions of three of the specialized report forms (Grains, Soybeans, Dry Beans, Dry Peas; Cotton; and Cattle, Hogs, Sheep, Goats) were field tested in a limited number of interviews conducted by professional staff members who also obtained the respondent's reactions to the purpose and content of the survey.

Based on an evaluation of these interviews and further research, data collection forms were developed for 11 type-of-farm enterprises for further testing. These forms were mailed on August 28, 1969, to nearly 1,300 addressees who had had agricultural operations in 1964 sufficient to qualify them as operators of specialized agricultural enterprises. One mail followup was sent to nonrespondents in early October. Letters accompanying both mailings stated the purpose of the test and asked for the addressee's assistance on a voluntary basis.

Approximately 400 report forms were returned to the Bureau in various stages of completion. These returns were analyzed for completeness and apparent accuracy of response. Of particular interest were items for which response was not complete or was apparently inconsistent with other data. Also considered was the format of the various sections of the report form. Did the respondent follow the flow of the items to be answered? Did he understand what information was wanted? Was he able to supply the information requested?

On the basis of the analysis, the final versions of the data collection forms were prepared. Two of the 11 types of enterprises (those for "General" and "Miscellaneous" farms) were dropped from the survey as not being identifiable as "specializations" for which the data about management and operation practices, inventory, and equipment would yield sufficient characterization. Other changes included revisions in format, the deletion of some items for which there was evidence of poor response capability, and the standardization of some sections common to two or more enterprises.

Method of Data Collection

The survey was conducted primarily on a mailout/mailback basis. A farm included in the sample received a separate report form for each of the specialized enterprises for which it qualified. The forms were mailed early in January 1972. A "Thank you" reminder card (see appendix) was sent to each addressee on January 12th, and up to six followup letters were mailed to nonrespondents at intervals between February 1 and June 30. As of April 9, all nonrespondent operators who had reported sales of $100,000 or more in 1969 were assigned for direct interview by personal visit or telephone. For economic efficiency of field operations, personal visits were restricted to those counties with eight nonrespondents or more. The nonrespondents in all other counties were interviewed by telephone.

Those nonrespondents with sales of less than $100,000 were handled in a second effort, during July and August 1972. Interviews by personal visit were restricted to counties with 12 nonrespondents or more. In the remaining counties, nonrespondents received additional request letters, supplemented to some extent by telephone interviewing. The general effort to obtain reports from nonrespondents was stopped at the end of August. Of the 412,000 forms mailed out in the surveys, returns were received for 390,000, of which 340,000 were considered in scope and appropriate for inclusion in the survey tabulations. During the processing operations, telephone calls were used to resolve the internal consistency or incompleteness of the reports for large operations.

Processing Procedures for Individual Report Forms

As the forms were received from the respondents they were checked in. Periodically the address register was updated and a reminder letter was sent to nonrespondents. If more than one specialized form had been required for the same farm, they were held together until completion of the pre-key clerical edit process.

The basic edit policy for the survey was to accumulate and present the publishable data the forms contained without attempting the followup required to obtain data for every section of every form, or, except in a few instances, to impute for missing data.

Implementation of this policy called for a pre-key clerical edit sufficient only to make the data keyable, and to assure consistency between two or more specialized forms for the same farm. The computer edit programs identified and resolved or displayed incomplete items, inconsistencies and data outside limit parameters. In general, no attempt was made to impute for completely missing items of data. However, if one part of a question was answered but some other part was not, the missing item was imputed.

For example, if the number of animals sold was reported but the value was missing, then the value was imputed; if acres were reported without yield, or yield without acres, then the missing component was imputed. Insertion of missing data based on information for an adjacent farm or for other items reported for the same farm was held to a minimum. Nationwide parameters were used for testing the ratios of production to acres, production to sales, etc. Thus, the major review and correction of the individual reports followed computer rejection of questionable data. Corrections were keyed to tape, merged into the record tape and re-edited to assure that the records were acceptable for tabulation.

The edit process included three computer passes. The first of these presented the problems, the second and third, following merging of keyed corrections, monitored the acceptability of the corrected records, as compared with the edit rules.

Tabulation Policy and Limitations

The type-of-farm enterprise survey was designed as a follow-on survey to the 1969 agriculture census. It was financed out of the savings resulting from the use of mail procedures for data collection, modification of the evaluation program, and improvements in the programing and processing of the regular census. Limited financial and staff resources dictated a modest tabulation and publication program. The tabulations presented in this report consist, for the most part, of basic summations of individual data items. Selected data are presented separately for farms that reported some specified condition, such as milk cows on hand, or turkeys sold.

The percentages and ratios presented or that may be derived from the data are believed to be representative of the farms conducting that type of enterprise within the geographic area.

The base data are those that were reported by the farms that responded to the survey, multiplied by their assigned sample weights. Thus, published totals are not estimates for all such enterprises in the given county or State but only for those that were represented in the sample drawn and that responded to the item tabulated. No attempt was made to identify and include in the survey enterprises organized since 1969 or grown large enough since 1969 to qualify. In general, no attempt was made to impute for completely missing items of data on partially completed report forms.

Presentation of Data

The standard pattern of the tabulations provides three lines of data for each area (State or county) for which data are shown, as follows:

Principal enterprise—That enterprise (product or groups of products for which sales in 1969 amounted to $10,000 or more) which in 1969 represented 50 percent or more of the total value of sales for the farm. This enterprise is the same as the type of farm code for the place for 1969. EXCEPTION: For 14,538 farms in the $10,000 to $19,999 TVP group the principal specialized operation had less than $10,000 of sales. The in-scope report forms for these operations that were returned by the respondents have been included in the tabulations on the PRINCIPAL line, since the report forms were sorted by total value of products sold by the farm, rather than by the value of sales of the product or group of products comprising the specialized operation.

Secondary enterprise—An enterprise (product or group of products for which sales in 1969 amounted to $10,000 or more) on a place with a principal enterprise. If three or more enterprises were conducted on the same place, all except the enterprise that agreed with the type-of-farm code were secondary.

Under $10,000—For places with less than $10,000 total value of products, the specialized operation that agreed with the 1969 type of farm.

The data are weighted estimates, based on the information furnished by the respondents to the survey. Sampling rates are shown in exhibit 1. Data are presented for all States and for all counties in which more than a limited number of farms were engaged in the enterprise. No data are shown separately by county if less than 10 reports for the enterprise were tabulated. For some enterprises the minimum number of tabulated reports for publication at the county level was set at some higher

Exhibit 1. Sampling Rate by Total Value of Products Sold by Type of Farm

	Type of farm and expansion factor									
	Cash-grain	Tobacco	Cotton	Field crop	Vege-table	Fruit and nut	Poultry	Dairy	Other live-stock[1]	General and misc.[2]
$100,000 and over	1	1	1	1	1	1	1	1	1	1
$40,000 to $99,999	2	1	1	1	1	1	1	2	2	1
$20,000 to $39,999	4	2	2	1	1	1	2	4	8	2
$10,000 to $19,999	8	4	4	2	2	2	4	8	16	([3])
$5,000 to $9,999	16	8	8	4	4	4	8	16	32	([3])
$2,500 to $4,999	32	16	16	8	8	8	16	32	64	([3])

NOTE: These rates are based on 1969 Census of Agriculture distribution.
[1] Includes livestock ranches for 17 Western States, Louisiana, Florida, and Hawaii.
[2] Expansion factors assigned to secondary enterprises on these types of farm.
[3] Not in survey.

number. The minimum number of tabulated reports for which separate county data are shown for the type-of-farm enterprise presented in this report is given in the part of this text that deals specifically with the enterprise.

Data for all counties with less than the minimum number of reports have been combined and are presented for "All other counties." Those who desire to examine ratios, comparisons between items, etc., for *enterprises* of a given type may do so by first combining the data presented for "principal" and "secondary" enterprises.

Similarly, those who wish to compare 1971 data with data by type of farm previously published from the 1969 Census of Agriculture should combine the data presented for "principal enterprises" and for places whose major agricultural operation had sales of "Under $10,000."

Relationship of Data to Other Agriculture Census Data

The 1971 data presented for the various specialized agricultural enterprises are, for the most part, an extension of the 1969 data previously published by type of farm in volume I and in chapter 8, volume II of the published reports of the 1969 Census of Agriculture.

Acres of land in the farm by ownership, acres of cropland harvested, farm labor information, and total sales and expenses were the only items common to every specialized enterprise report form. In addition, the report form for each specialized enterprise contained inventory, production, and sales items appropriate to the type of agricultural products comprising the enterprise. These basic items provide a rough measure of the coverage of the 1971 specialized enterprise, as compared with 1969 census data for the corresponding type of farm. They also provide some basis for evaluation, analysis, and interpretation of the specialized information obtained and presented.

Census Confidentiality

The data in this report have been reviewed to prevent the disclosure of individual operations, while presenting as many items of data as feasible. The probability of recognizing data about an individual operation is a function of the size of the operation and the number of farms reporting the item. For State totals, only an extremely large quantity reported would be recognized as possibly pertaining to the operations of an individual farm. For a county also, the number would need to be so large as to be grossly atypical of such operations within the county. Further, it is highly unlikely that anyone would know whether another's enterprise was "principal" or "secondary" in a county with 10 occurrences or more of the enterprise. Thus, the general policy was developed that a report for a secondary enterprise that exceeded 10 percent of the amount reported for the principal enterprises would be suppressed since it might be possible for others to associate the number with the specific farm that reported it. At least two numbers were deleted in the same line of any table that consisted of a total and detail to avoid the possibility of the user obtaining the missing number by subtraction.

This policy was adopted, in lieu of deleting all numbers for which less than three farms were tabulated because it permitted a very large reduction in the number of cells of data to be suppressed (and therefore a large reduction in the time and cost of the operation) with little likelihood of revealing the individual operations of any farm.

Abbreviations and Symbols

The following abbreviations and symbols are used throughout the published tables:

Z—Less than half of one unit reported
D—Data withheld to avoid disclosure of information for individual enterprises.

Definitions and Explanations

Except for the introduction of the term "Enterprise" (defined in the paragraph on **presentation of data)** the definitions and explanations are the same as for the other parts of the 1969 census, and are as fully comparable as possible with reports of earlier censuses. The more important definitions and explanations, including any variations from earlier censuses, are provided on pages 6 through 12 of chapter 1, volume II of the

published reports of the 1969 Census of Agriculture. The reproduction of the specialized enterprise data collection form in the appendix provides the content of the survey and the frame of reference for each data item.

Unpublished Data

The individual enterprise records from which these published tabulations were prepared are being retained for a period of about 5 years in computer processable form. Thus, it will be possible for the Census Bureau to prepare special tabulations for which a demand arises. Such tabulations could be tailored to the specific needs of the requester and would be done at the requester's expense. The cost would include programing, tabulation, review for consistency with published data, and suppression of data that would disclose individual operations. Inquiries should be directed to the Chief, Agriculture Division, Bureau of the Census, Social and Economic Statistics Administration, Washington, D.C. 20233.

Sample Selection

For the purpose of the farm enterprise surveys an enterprise occurs within a farm if the value of products sold for the product or product group included in the enterprise description is $10,000 or greater.

The universe for the 1971 Farm Enterprise Surveys was the 1969 Census of Agriculture data file excluding farms with total value of products less than $2,500, abnormal (primarily institutional) farms, and all farms located in Alaska.

For selection of the samples, the universe was stratified by value-of-sales class within type of farm, within State. The basic samples were selected by type of farm with all enterprises included in the sample farm (except "General" and "Miscellaneous") also included in enterprise sample. Farms classified as general or miscellaneous types were sent the applicable report forms only for their secondary enterprises, if any. The products or groups of products assigned to each enterprise (or enterprise-like) classification are the same as those for corresponding type-of-farm classifications, except that sales of dairy cattle and calves were included in the livestock-farm type classification in 1969 and in the dairy-farm enterprise classification for 1971.

The procedure used in selecting the sample for the type of farm enterprise survey was—

1. For each type of farm, select an indicated number of farms within each total value of products sold (TVP) stratum. Sampling rates by type of farm and TVP stratum are given in exhibit 1. The resulting numbers of enterprises in the samples are given in exhibit 2.

2. Once a farm is selected for the sample, determine the enterprises (product or group of products with sales of $10,000 or more) and provide a report form for each. By definition, only those farms with total value of products of $10,000 or greater could include an enterprise; however, it was possible for some farms with total value of products between $10,000 and $20,000 to have no enterprise. (Note: These farms, however, were tabulated in the line for PRINCIPAL enterprises since the sorting was based on the total value of products sold by the farm.)

3. If a sample farm has no enterprise, provide a report form matching its type of farm. However, exclude general and miscellaneous farms, regardless of size, when they do not include at least one in-scope enterprise.

The effect of this procedure is—

1. Estimates are provided for all nine of the enterprises in scope for the surveys.

2. Estimates for enterprise-like statistics are provided for farms with 1969 total value of products of $2,500 or greater but which include no enterprises. These estimates are by type of farm and are not combined with the estimates for enterprises.

3. Except for the qualifying farms containing no enterprise, there are no estimates for farm characteristics which are not included in an enterprise. For example, if a sample farm with $39,000 total value of products sold has a $20,000 grains enterprise and an $11,000 tobacco enterprise and cotton sales of $8,000, cotton operations characteristics from that farm are not included in the estimates.

4. No estimates are provided from farms having TVP less than $2,500.

Simple unbiased estimates are provided for totals. They are based on reports received, with no adjustment for nonresponse, or for enterprises established since 1969. Sampling errors have not been presented. The purpose of the reports is to present characteristics for only those enterprises and farms reporting and not to provide estimates for the universe. Time and other resources were not available to follow up nonrespondents as intensively as was desired and for given enterprises it was believed unsafe to assume a distribution for characteristics. Greatest effort was made in following up nonrespondent farms with expansion factors of 1 and 2. Thus, the sampling error for enterprises such as sugar, potatoes, and other field crops; vegetables, including tomatoes and melons; and fruits and nuts should be close to negligible for characteristics reported by all farms containing the enterprise.

Estimates are provided for specialized enterprises corresponding to nine type-of-farm classifications, as follows:

Grains, Soybeans, Dry Beans, Dry Peas (vol. V, part 1)

Barley for grain	Mustard seed
Buckwheat for grain	Oats for grain
Corn for grain	Proso millet
Cow peas for dry peas	Rice
Dry field and seed beans	Rye for grain
Dry field and seed peas	Safflower
Emmer and spelt	Sorghum for grain (includes milo)
Flaxseed	Soybeans for beans
Mixed grains for grain	Wheat for grain

Tobacco (vol. V, part 2)
Tobacco

Cotton (vol. V, part 3)
- Cotton

Sugar Crops, Potatoes, and Other Specified Crops (vol. V, part 4)
- Broomcorn
- Castor beans
- Dill for oil
- Flax for fiber
- Guar
- Hops
- Irish potatoes
- Lentils
- Mint for oil
- Mung beans
- Peanuts for nuts
- Popcorn
- Sesame seed
- Sugar beets for seed
- Sugar beets for sugar
- Sugarcane for seed
- Sugarcane for sirup
- Sugarcane for sugar
- Sunflower seed
- Sweet corn for seed
- Sweetpotatoes

Vegetables, Including Tomatoes and Melons (vol. V, part 5)
- Asparagus
- Beets
- Cabbage
- Cantaloups, persians, and muskmelons
- Carrots
- Cucumbers and pickles
- Dry onions
- Green lima beans
- Green peas
- Lettuce and romaine
- Radishes
- Snapbeans, bush and pole
- Squash and pumpkins
- Sweet corn
- Sweet peppers
- Tomatoes
- Watermelons
- Other vegetables

Fruits, Nuts, and Berries (vol. V, part 6)
- Citrus fruits:
  - Grapefruit
  - Oranges
  - Lemons
  - All other citrus
- Noncitrus tree fruits:
  - Apples
  - Cherries
  - Peaches
  - Pears
  - Plums and prunes
  - All other noncitrus fruits
- Grapes, American type
- Grapes, European type:
  - Raisin varieties
  - Table varieties
  - Wine varieties
- Berries:
  - Blackberries and dewberries
  - Blueberries
  - Cranberries
  - Raspberries
  - Strawberries
  - All other berries
- Tree nuts:
  - Walnuts, English or Persian
  - Almonds
  - Pecans, improved
  - Pecans, wild and seedling
  - Other fruit and nut trees

Poultry, (vol. V., part 7)
- Poultry and eggs

Dairy (vol. V., part 8)
- Milk
- Dairy cows and heifers
- Dairy bulls

Cattle, Hogs, Sheep, and Goats (vol. V, part 9)
- Beef cattle and calves
- Hogs and pigs
- Sheep and lambs
- Goats, kids, mohair

Type-of-farm operations not represented by corresponding specialized enterprise survey report forms are—

General:
Field seed crops, hay, grass, and silage. A farm was also classified as general if it had cash income from three or more sources and did not meet the criteria for any other type.

Miscellaneous:[1]
Greenhouse and nursery products, mushrooms, sod, forest products, mules, horses, colts, ponies, fur-bearing animals, bees, honey, goat milk, and farms with no value of farm products sold. Also all institutional farms and Indian reservations.

Farm Enterprises by Type of Farm

Table 1 shows the enterprises for each census type of farm in the sample. For example, the horizonal line for cash-grain farms shows the various specialized enterprise report forms that cash-grain farms received. The first number (12,028) represents cash-grain farms with less than $10,000 sales of cash grains. Such farms received the enterprise form that corresponded with their type-of-farm classification. The second number (44,551) represents cash-grain farms with $10,000 or more sales of cash grains. The third number shows that 66 of the 44,551 farms whose principal enterprise was cash grain also had a secondary tobacco enterprise ($10,000 or more of tobacco sales). Additional secondary enterprises on the selected sample farms whose principal enterprise was cash grain were cotton, 2,060; other field crops, 741; vegetables, 315; fruit and nut, 88; poultry, 45; dairy, 517; and other livestock, 8,184. The total number of report forms (all nine specializations) sent to farms whose principal type of operation was cash grain was 68,595.

The vertical columns of table 1 show the number of farms by type that received a specific specialized report form. For example, the tobacco column shows 18,852 total tobacco enterprise forms mailed, of which 66 went to cash-grain-type farms, 8,496 to tobacco-type farms, 12 to cotton type of farm, etc. The last entry in this column (7,636) is tobacco-type farms with less than $10,000 sales of tobacco; therefore they received a tobacco enterprise report form.

To determine the number of farms classified as a specific type of farm, it is necessary to add the "farms under $10,000" group to the group classified for that type. For example, to determine the number of farms classified as tobacco type, add the "farms under $10,000" group (7,636) to the tobacco type of farm group (8,496) which equals 16,132. These 16,132 tobacco-type farms received 16,132 tobacco enterprise report forms and 1,495 report forms for other enterprises.

Table 2 shows the universe from which mailing cases were selected. Farm counts derived from table 2 for type-of-farm classifications can be related directly to counts available from the 1969 Census of Agriculture.

Table 3 provides data indicating the extent of coverage shown in the tabulations of the farm enterprise surveys. The unweighted

[1] A census of greenhouse products, nursery products, mushrooms and sod was taken for the year 1970. (Volume V, part 10).

Exhibit 2. Enterprises in the Sample by Value of All Farm Products Sold

	Type of farm enterprise								
	Cash-grain	Tobacco	Cotton	Other field crops	Vegetables	Fruit and nut	Poultry	Dairy	Other livestock
Total	95,700	18,852	18,389	27,141	15,020	29,234	38,920	61,202	107,887
Principal enterprise	48,495	10,172	9,198	17,168	9,311	22,296	36,472	49,985	73,154
Secondary enterprise	39,121	2,720	7,225	7,897	4,103	2,082	1,696	7,701	27,265
Other	8,084	5,960	1,966	2,076	1,606	4,856	752	3,516	7,468
$10,000 or more	83,672	11,216	15,384	23,693	12,879	23,903	37,917	55,421	97,438
Principal enterprise	44,551	8,496	8,159	15,796	8,776	21,821	36,221	47,720	70,173
Secondary enterprise	39,121	2,720	7,225	7,897	4,103	2,082	1,696	7,701	27,265
Under $10,000	12,028	7,636	3,005	3,448	2,141	5,331	1,003	5,781	10,449
Principal enterprise	3,944	1,676	1,039	1,372	535	475	251	2,265	2,981
Other	8,084	5,960	1,966	2,076	1,606	4,856	752	3,516	7,468
$100,000 or more									
Principal	4,120	245	1,128	2,201	2,138	2,788	8,525	4,974	20,939
Secondary	12,344	585	2,929	3,005	1,885	1,093	571	1,286	5,472
$40,000 to 99,999									
Principal	14,529	1,856	3,315	4,955	2,564	5,638	18,388	14,809	30,880
Secondary	20,357	1,548	3,275	3,787	1,770	771	887	4,101	14,423
$20,000 to 39,999									
Principal	17,877	3,746	2,846	6,753	2,903	8,528	7,707	20,345	13,088
Secondary	6,420	587	1,021	1,105	448	218	238	2,314	7,370
$10,000 to 19,999									
Principal (>$10,000)	8,025	2,649	870	1,887	1,171	4,867	1,601	7,592	5,266
Principal (<$10,000)	3,944	1,676	1,039	1,372	535	475	251	2,265	2,981
$5,000 to 9,999									
Under $10,000	5,616	3,797	1,076	1,455	1,055	3,194	535	2,893	4,764
$2,500 to 4,999									
Under $10,000	2,468	2,163	890	621	551	1,662	217	623	2,704

Note: These counts are based on 1969 Census of Agriculture distributions.

number of forms tabulated are shown with the unweighted number of forms mailed for each type. Data were not imputed for nonresponse nor for forms received which were incomplete or no longer in scope.

Expanded figures are shown for principal and secondary enterprises and for the reports for farms with less than $10,000 value of products sold (1969) by type of enterprise and farm.

The expanded figures for specialized reports by type of farm are shown with the number of farms by type from the 1969 Census of Agriculture.

Comparisons with data shown in table 1 and exhibit 2 provide some interesting relationships of the expanded reports tabulated with the unweighted number of forms mailed. For example, the weighted number of principal tobacco enterprises tabulated,

Table 1. Number of Enterprises in the Sample, by Type of Farm

	Farms under $10,000[1]	Enterprises									
		Cash-grain	Tobacco	Cotton	Other field crops	Vegetables	Fruit and nut	Poultry	Dairy	Other livestock	Total
Total	(X)	95,700	18,852	18,389	27,141	15,020	29,234	38,920	61,202	107,887	412,345
Type of farm:											
Cash-grain	12,028	44,551	66	2,060	741	315	88	45	517	8,184	68,595
Tobacco	7,636	659	8,496	56	159	29	3	13	49	527	17,627
Cotton	3,005	3,599	12	8,159	157	135	59	4	9	586	15,725
Other field crops	3,448	2,992	93	280	15,796	668	88	18	146	1,489	25,018
Vegetables	2,141	1,087	23	246	704	8,776	532	14	70	249	13,842
Fruit and nut	5,331	254	9	158	105	476	21,821	33	74	381	28,642
Poultry	1,003	876	329	95	99	142	184	36,221	851	2,375	42,175
Dairy	5,781	2,079	205	211	207	153	116	231	47,720	3,739	60,442
Other livestock	10,449	17,350	386	604	1,402	255	194	472	2,663	70,173	103,948
General and miscellaneous	0	10,225	1,597	3,515	4,323	1,930	818	866	3,322	9,735	36,331
Farms under $10,000[1]	(X)	12,028	7,636	3,005	3,448	2,141	5,331	1,003	5,781	10,449	(X)

[1]Not considered an enterprise because sales for the principal product group were under $10,000. (See exhibit 2.) These places received only the specialized report form corresponding to their type of farm.

Table 2. Number of Enterprises, by Type of Farm: 1969

(Universe from which farms in the sample were selected)

		Enterprises									
	Farms under $10,000	Cash-grain	Tobacco	Cotton	Other field crops	Vege-tables	Fruit and nut	Poultry	Dairy	Other live-stock	Total
Total	(X)	433,948	95,998	50,865	41,680	24,525	56,101	59,990	276,723	691,087	[1]1,869,280
Type of farm:											
Cash-grain	200,485	168,840	146	4,088	1,577	555	120	100	1,319	19,086	396,316
Tobacco	71,651	758	20,277	56	176	31	3	15	74	684	93,725
Cotton	27,007	4,243	13	13,585	162	142	65	5	9	659	45,890
Other field crops	13,488	2,992	93	280	17,720	668	88	18	146	1,489	36,982
Vegetables	9,755	1,087	23	246	704	9,926	532	14	70	249	22,606
Fruit and nut	27,001	254	9	158	105	476	26,718	33	74	381	55,209
Poultry	8,765	914	336	98	101	145	190	48,739	894	2,478	62,660
Dairy	84,118	4,434	434	256	340	243	155	480	176,280	9,055	275,795
Other livestock	372,238	36,573	916	920	2,152	381	309	812	9,072	271,705	695,078
General and miscellaneous	138,363	13,368	2,100	4,171	5,155	2,203	920	1,009	4,667	13,063	185,019
Farms under $10,000	(X)	200,485	71,651	27,007	13,488	9,755	27,001	8,765	84,118	372,238	(X)

[1]Total includes general and miscellaneous.

Table 3. Relationship of Forms Tabulated to Forms in the Sample and to Farms by Type: 1969

	Cash-grain	Tobacco	Cotton	Field crop	Vegetable	Fruit and nut	Poultry	Dairy	Other livestock	Total
Specialized reports mailed	95,700	18,852	18,389	27,141	15,020	29,234	38,920	61,202	107,887	412,345
Specialized reports tabulated	81,491	14,256	14,816	20,145	10,874	23,352	30,776	50,291	90,546	336,547
Specialized reports tabulated, expanded	351,906	69,347	37,188	29,921	17,379	45,710	45,345	222,293	561,397	1,380,486
Principal enterprises	172,643	21,124	14,663	16,084	8,441	23,425	39,045	164,218	271,216	730,859
Secondary enterprises	55,618	2,959	8,253	7,799	3,330	2,014	1,779	10,170	39,584	131,506
Under $10,000	123,645	45,264	14,272	6,038	5,608	20,271	4,521	47,905	250,597	518,121
Farms by type, 1969	369,312	89,903	40,534	31,190	19,660	53,754	57,545	260,956	647,884	1,570,738
Specialized reports by type of farm (principal plus under $10,000)	295,172	66,424	28,935	22,118	11,245	43,548	43,566	212,123	521,813	1,244,944
Percent of 1969 farms by type	79.9	73.9	71.4	70.9	57.2	81.0	75.7	81.3	80.5	79.3

21,136, represents the useable returns received from the 10,172 forms mailed (8,496 principal enterprise, $10,000 or more, table 1; and 1,676, less than $10,000, exhibit 2). The 45,288 tabulated tobacco reports for farms with less than $10,000 in sales of all farm products represent the useable returns received from the 5,960 forms mailed (exhibit 2). The figure of 3,007 for secondary tobacco enterprises tabulated represent the useable returns received from the 2,720 secondary tobacco enterprises on farms of all other types that were drawn in the sample and to which tobacco forms were mailed (table 1).

Agricultural Labor Related to Specialized Operations

The items pertaining to labor were identical for all nine of the specialized surveys. These inquiries were divided into three separate parts. These three parts are as follows: (1) Operator and unpaid workers, (2) paid workers, and (3) man-days worked by paid workers. (See the reproduced data-collection form in the appendix.)

Data on the number of days the operator worked and the portion of expenditures for hired labor related to the given enterprise are shown only for the reports that provided both the number of days worked and the portion of labor expenditures related to the given enterprise. Incomplete responses were not imputed or otherwise corrected and were not included in the tabulations. Separate data by days worked are shown for those operators who reported that one-half of their work or more was related to the given enterprise.

The same limitation on presentation of the data was used for the number of unpaid workers and the number of days they worked. The reporting of these other unpaid workers was more incomplete than for the operator due to the necessity of listing each unpaid worker. Many operators apparently did not consider their wives or children as farm workers if they did only infrequent work on the farm. There was no attempt made to impute or otherwise correct the reports for unpaid labor.

In presenting data for hired workers the following definitions were used:

Regular workers represent those workers who performed agricultural work on a farm 150 days or more during the year.

Part-time workers (seasonal) represent those workers who performed agricultural work on a farm less than 150 days during the year. Such workers may have worked as little as part of one day or as much as full time for not more than 149 days on a particular farm.

Contract workers represent those workers who performed agricultural work on a farm, but who were paid by a crewleader, contractor, buyer, processor, cooperative, custom-work operator, or other such person having an oral or written agreement with the farm operator.

Man-day is considered to be any day on which a person was employed one hour or more.

The data relating to regular hired workers include the number of farms reporting, number of workers, and cash wages for the farms reporting workers working 250 days or more and farms reporting workers working 150 to 249 days. Additional data are also presented for farms reporting 3/4 or more of the cash wages paid for regular farm workers being used on the given enterprise. Only those reports showing number of workers, cash wages, and the proportion of cash wages paid for work on the given enterprise are included in the data shown.

DAIRY

General Background

Dairy farming, like most other forms of agricultural production, has become more highly specialized. In the last several years the dairy industry has made significant technological and sociological changes. Changes have occurred particularly with respect to size of operations, increased numbers of large producers in the industry, and the improved methods of producing and handling milk. Automated equipment for milking and feeding have reduced labor requirements. At the same time these innovations were taking place, the cost of labor, feed, and other production expenses incurred by the dairy industry increased substantially. These changes have altered both the size of operation and the combination of equipment and labor needed to operate efficiently.

The Specialized Agriculture Survey of Dairy Operations, 1971, was conducted to obtain more in-depth and intensive information than was feasible to collect on the regular census report form. Because little information was available nationwide at the county level on in-depth characteristics of dairy operations, information was collected pertaining to ownership of dairy cows, milk contracts, cattle and calves sold by purpose, dairy cattle and calves purchased by source, various production expenses, waste disposal methods, feed usage by kind, types of housing, labor, and fertilizer. Items of information not previously available are compared to traditional census items such as inventory or sales for the same farms in many of the publication tables. These relationships should provide some measure of distribution of the characteristics of dairy operations throughout the United States.

Scope of the Dairy Survey

The sample farms were selected at a rate designed to permit publication of survey tables for all States and for those counties having more than a few farms with dairy operations. The minimum number of records for individual county data to be shown separately for this report is 10.

The 61.2 thousand farms to which dairy-survey forms were mailed included 53.5 thousand dairy-type farms and 7.7 thousand dairy operations on other type farms. These 61.2 thousand farms in the sample represent a total of 276.7 thousand dairy operations. The number of sample farms included in the tabulations shown in this publication is 50.3 thousand. When weighted, these reports represent 222.3 thousand dairy operations. The sampling rate by value of sales for dairy-type farms is shown in the table below:

	Number of dairy-type farms in 1969 census	Sampling rate for the 1971 survey
$100,000 and over	4,995	1 out of 1
$40,000 to $99,999	29,663	1 out of 2
$20,000 to $39,999	81,942	1 out of 4
$10,000 to $19,999	78,875	1 out of 8
$5,000 to $9,999	45,436	1 out of 16
$2,500 to $4,999	19,945	1 out of 32

Availability of Data

Data are shown at the State level for 57 tables and at the county level for the 9 tables believed to be of most general interest. Space limitations preclude inclusion of data at the county level for all 57 tables; however, the data are available at the county level in the form of unpublished tabulations. Copies of any or all of the 48 unpublished county tables can be provided upon payment of the cost of review for disclosures and consistency and of making reproductions. A cost estimate will be furnished upon request. Direct your inquiry to Chief, Agriculture Division, Bureau of the Census, Washington, D.C. 20233.

Presentation of Dairy Data

The tabulations for the dairy survey are limited for most items to those farms that indicated the item on their form, provided the item was acceptable in comparison to related items on the form. Many of the tables have one or more columns of data that can be related to the universe reporting. For example, the number of farms having milk cows and the number of milk cows is shown for farms reporting housing and milking facilities.

Counts of farms for the total survey that had acceptable reports for various items are shown in the following table.

Weighted Counts of Number of Farms and of Farms Reporting Selected Items

	Number	Percent
Farms tabulated	222,293	100.0
Cattle and calves of all ages	219,303	98.7
Milk cows	214,073	96.3
Heifers and heifer calves	198,029	89.1
Bulls and bull calves	90,568	40.7
Cattle and calves for beef purposes	102,431	46.0
Milk sales	213,247	95.9
Cattle and calves sold	211,449	95.1
Cattle purchased	92,087	41.4
Feed and feed supplements fed	191,624	86.2
Cost of purchased feed	102,340	46.0
Methods of mixing feed	85,204	38.3
Disposal of dairy animals waste	192,472	86.5
Commercial fertilizer applied to hay crops	77,529	34.8
Commercial fertilizer applied to corn and/or sorghum silage	116,401	52.4
Commercial fertilizer applied to pasture	34,325	15.4
Commercial fertilizer applied to other types of forages	128,270	57.7
Bins and silos	154,689	69.5
Milking and/or housing facilities	200,949	90.3
Selected machinery and equipment	179,426	80.7
Hired labor expenditures	95,305	42.8
Labor on the dairy operations:		
Farm operator labor	122,862	55.2
Other unpaid workers (labor)	94,108	42.3
Regular workers (150 to 249 days)	24,584	11.0
Regular workers (250 days or more)	14,788	6.6
Part-time workers (less than 25 days)	26,034	11.7
Part-time workers (25 to 149 days)	23,694	10.6

Some indications of the degree of completion or response for these items may be obtained from this table. For example, the cattle sales section appears to be reasonably near to complete with 95 percent of the respondents reporting the item. Feed and feed supplements fed were reasonably well reported, with 86 percent reporting. Only 55 percent of the operators reported both their total days of farm work during the year and the portion of that time they spent on the dairy operations; this is a poor response since close to 100 percent would be expected to do some work on the dairy operations. Also, 43 percent reported hired labor for the dairy operations, compared with 65 percent of the dairy-type farms in the 1969 census. Since milk cow inventory was reported by 96 percent of the farms; reports of milking or housing facilities on 90 percent of the farms reflect reasonably good reporting in the facilities section.

Imputation

Some items were imputed on all farms provided other conditions were met. Milk sales were imputed if none were reported provided there were milk cows on hand. Ownership of cattle inventory was imputed into owned by "you or this firm," if there was no indication as to who owned the cattle reported.

If ownership of some, but not all, of the cattle was indicated the remaining cattle were imputed into the ownership categories indicated.

Selected Reporting Items

Feed—The detail items asked for feed are shown in the facsimile of the form in the appendix. Feed reported was compared as a total to the number of dairy cattle and calves for the place. If the total feed reported was below a specified limit, all of the individually reported feed items were accepted. Occasionally this procedure resulted in the acceptance of questionable entries for individual items of feed. If the total reported fed exceeded the specified limits when compared to the dairy cattle for the place, all of the feed was deleted from the report in the computer edit. An analytical review was made of the computer-deleted items and those which could be corrected were restored. Therefore, the published feed data should be considered in relation to the number of dairy cattle and calves on farms having acceptable feed sections, not to the total number of dairy cattle and calves.

Methods of mixing feeds—Methods of mixing feeds used for the dairy enterprise were requested on the form. The three questions were designed to determine how much of the feed was mixed (1) on the place by equipment kept on the place, (2) on the place by custom mobile feed mills, and (3) off the place.

If the tons reported mixed were reasonable in comparison to the reported amount of feed fed which could have been used in a mixed ration, the reported number of tons of feed mixed was accepted. Entries of feed mixed that were not acceptable were deleted in computer edit, subject to analytical review, and those which could be corrected were restored.

Disposal of animal waste—Methods of disposal of dairy animal waste reported were accepted as reported. Approximately 12 percent of the farms did not mark any of the waste-disposal methods specified on the report form.

Cattle and calves purchased—In the capital outlays and selected production expenses classification, the numbers of dairy cows, dairy heifers and heifer calves, and dairy bulls and bull calves purchased were obtained along with the approximate cost of the animals. Also sources of cattle purchased were obtained, and those reports not indicating a source for the animals purchased were tabulated into a separate "no report" group.

If no entry appeared in the cattle purchases section, then no imputation of cattle purchases was initiated. Also sources of purchases were not imputed. Farms reporting percent of animals purchased from each source (farms or ranches, stockyards, auctions and sales barns, and dealers and others) were edited if the combined percentages did not equal 100 percent or if percentages were reported and no cattle or value was reported. When these inconsistencies occurred, percentages were edited to equal 100 percent, and percentages reported without the number of cattle or value of cattle were deleted. Respondents reporting cattle purchased without specifying a source of purchase, were tallied in a group labeled "source unspecified" (see State tables 13 through 16). Of all farms reporting purchases, over 70 percent indicated the source of the animals purchased.

Farms Reporting Purchases, Source of Purchases, and Percent of Farms Specifying Sources on Dairy Farms

	Number of farms with purchases	Number of farms specifying source of purchases	Percent of farms specifying source of purchases
Total farms purchasing cattle and calves	[1] 92,087	–	–
Farms purchasing–			
Dairy cows	56,952	42,131	74
Dairy heifers and heifer calves	23,876	16,870	71
Dairy bulls and bull calves	33,883	23,754	70
Nondairy cattle and calves	12,997	9,127	70

[1] Detail of farms with purchases of cattle does not add to total farms purchasing cattle and calves because of multiple purchases.

Cattle sales—If entries appeared in the spaces provided for both the number of cattle sales and the value of cattle sales, then these numbers were checked against limits to determine whether they were reasonable entries. If only the number of animals sold appeared on the form and no value of sales was reported, a value was imputed. If no entries appeared in the sales section, then no imputation of sales was initiated.

Reporting Problems

As might be expected in a survey of this type being conducted for the first time on a large scale, there were some problem areas both in the reporting of data by the respondents and in the computer edit. During computer edit and clerical review operations, several tests were made to detect reporting errors, clerical errors, and key-punch errors. Although the majority of

these errors were identified and corrected, some errors were not adjusted. The principal problem areas in this survey are as follows:

1. **Milk sold directly to consumers, stores, or restaurants**—In some areas, based on average price comparisons, milk reported as sold directly to consumers, stores, and restaurants appears to include some entries of quantity and value that should have been reported as sold to plants and dealers.

2. **Cattle and calves sold for dairy purposes (dairy cows, dairy heifers, and dairy bulls and bull calves)**—These items may sometimes be misreported because of misinterpreting what was meant by being sold for "dairy purposes," or misreported because the respondent inaccurately determined for what purpose the animals sold were to be used. Therefore animals reportedly sold for dairy purposes may actually have been slaughtered or used for beef purposes by the new owner.

3. **Feed and feed supplements**—Feed and feed supplements tended to be a problem because of the variety and complexity of various feedstuffs associated with milk production. Problems were compounded because of the characteristics and composition of feeds that determine the quality of rations, which varies from one area to another. Misreporting of some ingredient feeds (animal protein, minerals, other feed ingredients, and milk replacer), occurred because of the reporting of pounds instead of whole tons and 10ths as required in the survey.

4. **Total cost of purchased feed**—Probably due to the general unavailability of records, and the reluctance on the part of respondents to report the total cost of purchased feed fed, only 46 percent of the farms in the survey reported cost of purchased feed. Many respondents reported purchased feeds without reporting the cost. The quantities reported are included in the tabulations.

523-198 O - 73 - 2