

Appendix C.

Statistical Methodology

MAIL LIST MODEL

Classification analysis was performed to predict the probability that an addressee on the 1992 mail list operated a farm, and thereby separated the preliminary mail list into probable farm and probable nonfarm classes. The analysis was used to reduce the preliminary census mail list of 3.78 million records to a final mail list size of 3.55 million records. All 3.55 million addresses on the final mail list received a census of agriculture report form.

Records from the 1987 final census mail list were used to build a 1992 prediction model for the 1992 analysis. Classification and Regression Trees (CART) software analyzed characteristics of known 1987 farm and nonfarm operations to determine which were most useful in predicting farm and nonfarm classes. Record characteristics such as the source of the mail list record, number of source lists on which the record appeared, expected value of agricultural sales, and geographic location were used to separate mail list records into model groups. (Sources included the previous agriculture census mail list, the Internal Revenue Service administrative records, U.S. Department of Agriculture, and special commodity lists.) The proportion of 1987 census farm records in each model group was calculated to provide an estimate of the probability that an addressee in the group operated a farm.

After the model groups were defined, each address record on the 1992 preliminary mail list was assigned to a model group by matching record characteristics to model group characteristics. Records belonging to the groups with the highest farm probability were those more likely to be farms according to the classification tree methodology. The model, followed by analyst reviews, was used to remove 229,700 records from the preliminary mail list (those in model groups with the lowest farm probability), and thereby designated the 3.55 million records with the highest farm probability to receive the census report form. This procedure was used to obtain a more complete census enumeration of farm operations without excessive respondent burden and data collection cost.

CENSUS SAMPLE DESIGN

Each of the 3.55 million name and address records on the census mail list was designated to receive one of three different types of census report forms. The three forms were the nonsample form, the screener form, and the

sample form. Sections 1 through 20 and 27 through 32 of the sample form are identical to sections on the nonsample form. The sample form, sections 21 through 26, contains additional questions on usage of fertilizers and chemicals, farm production expenditures, value of machinery and equipment, value of land and buildings, and farm-related income. The screener form is identical to the nonsample form with questions added in section 1 to allow quick identification of nonfarm addresses. These three different forms were used to reduce the response burden of the census, while providing reliable information on a large number of data items.

The sample form was mailed to all mail list records in Alaska, Hawaii, and Rhode Island, and to a sample of records in other States selected from the final mail list. Addresses were selected into the sample with certainty (1) if they were expected to have large total value of agricultural products sold or large acreage, (2) if they were multiunit operations (i.e., separate farms in more than one location), (3) if they had other special characteristics, or (4) if they were in a county with less than 100 farms in 1987. Other addresses in counties containing 100 to 199 farms in 1987 were systematically sampled at a rate of 1 in 2, and other addresses in counties containing 200 farms or more in 1987 were systematically sampled at a rate of 1 in 6. This differential sampling scheme was used to provide reliable data for the sample sections of the report form for all counties. When a nonsample large farm was identified during processing, a supplemental form that contained the additional sample data inquiries was mailed.

To determine which mail list records would receive the screener form, all mail list records not designated for the sample were sorted by model group farm probability as specified by the mail list model. The 412,000 mail list records in the model groups with the lowest probability of being farms and with an expected total value of agricultural product sales less than \$25,000 were designated to receive the screener report form. The remaining mail list records received the nonsample report form.

CENSUS ESTIMATION

The 1992 Census of Agriculture used two types of statistical estimation procedures. These estimation procedures accounted for nonresponse to the data collection and for the sample data collection. These procedures are necessary because some farm operators never respond to

the census despite numerous attempts to contact them, and the estimates for the sample data are based on a sample of farm operators rather than a full enumeration.

Whole Farm Nonresponse Estimation

A statistical estimation procedure was used to account for nonrespondent farm operators to the census. We excluded large and unique farm operations that received intensive telephone followup during census processing, assuming complete response from them. A stratified systematic sample of remaining census nonrespondents were contacted by enumerators using a computer-assisted telephone interview system. Five sample strata were defined based on expected value of sales, previous census status, and whether the record was identified by the mail list model to receive the screener report form. The nonresponse survey telephone interview was designed to provide sufficient information to determine the farm status of each record.

In situations where the nonresponse survey case could not be contacted, the contact person refused to cooperate, or when no phone number could be obtained, a screener report form was sent by certified mail.

Estimates of the proportion of census nonrespondents that operated farms were made for each stratum in the State using survey results and applied to the total number of census nonrespondents in that stratum. The number of census nonrespondents that operated farms for each county by stratum was then derived. This estimation procedure is based on the assumption that the distribution of farms in a stratum by county is the same for census nonrespondents as for census respondents.

Certain census respondent farms which exhibited "rare" commodities were designated as "ineligible" to represent census nonrespondent farms and were excluded from the nonresponse weighting operation. The procedure explained below was performed with only the eligible respondent cases: Within each stratum in a county, a noninteger nonresponse weight was calculated and assigned to each eligible respondent farm record. The noninteger nonresponse weight is the ratio of the sum of the estimated number of nonrespondent farms from the nonresponse survey and the number of eligible census respondent farms to the number of eligible census respondent farms. Stratum controls were established to ensure that this weight was never greater than 2.0. The noninteger nonresponse weight was used in the calculation of the final weight for the sample items. The noninteger nonresponse weight was randomly rounded to an integer weight of either 1 or 2 for each record for tabulating the complete count items for publication.

Table A quantifies the effect of the nonresponse estimation procedure on selected census data items. The percentages in these tables are the percents of the census values contributed by nonresponse estimation. These indicate the potential for bias in published figures resulting from nonresponse to the census. The estimates provided

in these tables do not reflect the effect of item nonresponse to individual census data items. The effect of item nonresponse is discussed in the Census Nonsampling Error section.

Table A. Percent of State Totals Contributed by Whole Farm Nonresponse Estimation: 1992

Item	Percent of total
Farmsnumber. .	15.7
Land in farms.....acres. .	8.4
Estimated market value of land and buildings ¹\$1,000. .	3.3
Market value of agricultural products sold ..\$1,000. .	3.6
Harvested croplandacres. .	6.9
Corn for grain or seedacres. .	2.3
Wheat for grainacres. .	5.6
Livestock and poultry inventory:	
Cattle and calvesnumber. .	7.9
Hogs and pigsnumber. .	5.7
Hens and pullets of laying age.....number. .	1.2

¹Data are based on a sample of farms.

Sample Estimation

Sample data estimates the population totals that would have resulted from a complete census for the items in sections 21 through 26 of the sample report form. The estimates were obtained from a ratio estimation procedure that resulted in the assignment of a weight to each respondent record containing sample items. For any given county, a sample item total was estimated by multiplying the data items for each farm in the county by the corresponding sample weight and summing over all sample records in the county.

Each respondent sample farm was assigned a sample weight for use in producing estimates for all sample items. For example, if the weight given to a sample farm had the value 6, all sample data items reported by that farm would be multiplied by 6. The weight assigned to a sample certainty farm was 1.

Other than certainty farms, within a county, the ratio estimation procedure for farms was performed in three steps using three variables. The first variable contained eight 1992 total value of agricultural production (TVP) groups. Both the second and third variables, Standard Industrial Classification (SIC) code and farm acreage, contained two groups. The three sets of groups were as follows:

TVP	SIC	Acres
\$1 to \$999	01 All crops	1 to 69
\$1,000 to \$2,499	02 All livestock	70 or more
\$2,500 to \$4,999		
\$5,000 to \$9,999		
\$10,000 to \$24,999		
\$25,000 to \$49,999		
\$50,000 to \$99,999		
\$100,000 or more		

The first step in the estimation procedure was to classify the sample records into 32 mutually exclusive initial post strata formed by the three sets of groups. The total and sample farm counts were expanded to account for nonresponse. Each cell containing sample farm records was assigned an initial sample weight equal to the ratio of the total farm count to the sample farm count. This weight was approximately equal to the inverse of the probability of selecting a farm for the census sample.

The second step in the estimation procedure was to combine, if necessary, the 32 initial post strata to increase the reliability of the ratio estimation procedure. Any stratum that contained less than 10 sample farms after nonresponse adjustment or had a weight greater than two times the mail sample rate was collapsed with another stratum. The mail sample rate was either 2 or 6, depending on whether the county had a 1 in 2 or 1 in 6 sample selection rate. The collapsing occurred within the initial 32 post strata according to a specified collapsing pattern. After the collapsing process was completed, new total farm counts and sample farm counts were computed from each of the final post strata and were used to calculate final sample weights.

The final step consisted of assigning the noninteger final post stratum weight to the sample farm records in each post stratum. The weight is the ratio of total farm count to sample farm count in each final post stratum. The noninteger sample weight, the product of the noninteger final post stratum weight and the nonresponse weight, was randomly rounded to an integer weight for tabulation. If, for example, the final weight for the farms in a particular post stratum was 7.2, then 0.2 or one-fifth of the sample farms in this post stratum were randomly assigned a weight of 8 and the remaining four-fifths received a weight of 7.

CENSUS SAMPLING ERROR

The sample for the 1992 Census of Agriculture is only one of a large number of possible samples of the same size that could have been selected using the same sample design. Sample refers to the sample for both the nonresponse survey and the selection of farms to receive the sample report forms. Estimates derived from all the possible samples would differ from each other only by random variation.

The standard error or sampling error of a survey estimate is a measure of the variation among the estimates from all possible samples and thus is a measure of the precision with which an estimate from a particular sample approximates the average result of all possible samples. The percent relative standard error of an estimate is defined as 100 times the standard error of the estimate divided by the value of the estimate.

If all possible samples were selected, each of the samples were surveyed under essentially the same conditions, and an estimate and its standard error were calculated from each sample, then:

1. Approximately 90 percent of the intervals from 1.65 standard errors below the estimate to 1.65 standard errors above the estimate would include the average value of all possible samples.
2. Approximately 95 percent of the intervals from 1.96 standard errors below the estimate to 1.96 standard errors above the estimate would include the average value of all possible samples.

The following example illustrates the computations necessary for producing a confidence interval for an estimate. Assume that the estimate of number of farms for a State is 94,382 and the relative standard error of the estimate is .1 percent (0.001). Multiplying 94,382 by 0.001 yields 94, the standard error; therefore, a 90-percent confidence interval is 94,227 to 94,537 (i.e., 94,382 plus or minus 1.65 x 94). If corresponding confidence intervals were constructed for all possible samples of the same size and design, approximately 90 percent of these intervals would contain the figure obtained from a complete enumeration. Similarly, a 95-percent confidence interval is 94,198 to 94,566 (i.e., 94,382 plus or minus 1.96 x 94).

Census items were classified as either complete count or sample count items. Complete count items were asked of all farm operators. Examples of complete count items were land in farms, harvested cropland, livestock inventory and sales, crop acreage, quantities harvested and crop sales, land use, irrigation, government loans and payments, conservation acreage, type of organization, and operator characteristics.

Sample count items were asked only of a sample of farm operators. These items appeared only in sections 21 through 26 of the sample report form. Sample count items were included under the following section headings: commercial fertilizers, chemicals, production expenses, farm machinery and equipment, value of land and buildings, and farm-related income.

Variability, measured as percent relative standard error, in the estimates of complete count items is due only to the nonresponse survey estimation procedure. Variability in the estimates of sample count items is due to both the nonresponse survey estimation procedure and the census sample selection and estimation procedure. Thus, variability in the sample count item estimates tends to be larger than the variability in the complete count item estimates.

Table B provides the generalized reliability estimates of the estimated number of farms in a county reporting complete count and sample count items. The top half of the table shows the percent relative standard error for estimated number of farms in a county reporting a complete count item and the bottom half a sample count item. These are derived from regression equations. Separate regression equations were used for complete count items and sample count items. Each regression equation was fit with the estimated number of farms in a county reporting an item as the independent variable and the relative variance of that estimate as the dependent variable for all counties in the State. For sample count items, only data

from counties sampled at a rate of 1 in 6 are used in the estimation of the regression equation.

Table B. Reliability Estimates for Number of Farms in a County Reporting a Complete Count Item or Sample Count Item: 1992

Farms	Relative standard error of estimate (percent)
COMPLETE COUNT ITEM	
Number of farms reporting:	
25	6.3
50	4.4
75	3.5
100	3.0
150	2.4
200	2.0
300	1.5
500	1.0
7505
1,0005
1,5004
2,0003
SAMPLE COUNT ITEM	
Number of farms reporting:	
25	36.0
50	26.0
75	21.7
100	19.2
150	16.2
200	14.6
300	12.7
500	10.9
750	9.9
1,000	9.4
1,500	8.8
2,000	8.5

To illustrate the use of this table, assume that the estimate of the number of farms reporting hogs and pigs for a particular county, as given in county table 15, is 89. Since hogs and pigs is a complete count data item, refer to the first part of table B and use the estimated percent relative standard error of the estimate from the row with farm count equal to or just less than the estimated number of farms, 89. For this example, the percent relative standard error of the estimate comes from the row for 75 farms reporting. For sample count items, follow the same procedure using the second part of table B. For counties with fewer than 100 farms in the 1987 Census of Agriculture, variability in sample count item estimates comes only from nonresponse survey estimation procedures; thus, the estimated relative standard error for a sample count item in these counties may be obtained using the first part of table B.

Table C presents the percent relative standard error of selected State data items for all farms, and table D presents the percent relative standard error of selected State data items for all farms with sales of \$10,000 or more.

Table E presents the percent standard error for percent change in State totals from 1987 to 1992. The general

purpose of the percent change estimate is to provide a relative measure of the difference in a characteristic between censuses. The relative change for a given characteristic is defined as the ratio of the difference of the 1992 and the 1987 estimate for that characteristic to the 1987 estimate. This ratio is multiplied by 100 to obtain the percent change. The percent standard error of a percent change estimate, then, is the standard error of the ratio multiplied by 100.

Table F presents the percent relative standard error for State and county totals for selected data items. The percent relative standard error of the estimate for the same item differs among counties in the State. Reasons for this are differences among counties in (1) the total number of farms, (2) the number of large farms included with certainty, (3) the size classifications of the farms sampled, (4) the amount of nonresponse, (5) the general agricultural characteristics, and (6) the specific characteristic being measured.

CENSUS NONSAMPLING ERROR

The accuracy of the census counts are affected jointly by sampling errors, described in the previous section, and nonsampling errors. Extensive efforts were made to compile a complete and accurate mail list for the census, to design an understandable report form with instructions, and to minimize processing errors through the use of quality control measures on specific operations. Nonsampling errors arise from incompleteness of the census mail list, duplication in the mail list, incorrect data reporting, errors in editing of reported data, and errors in imputation for missing data. These specific nonsampling errors are further discussed in this section. Evaluation studies will be conducted to measure the extent of certain nonsampling errors such as coverage error and classification error.

Census Coverage

The main objective of the census of agriculture is to obtain a complete and accurate enumeration of U.S. farms with accurate data on all aspects of the agricultural operation. However, the high cost and availability of resources for enumeration place restrictions on feasible data collection methodologies. The past six agriculture censuses have been conducted by mail enumeration with telephone contact for selected nonrespondents. The completeness of such an enumeration thus depends to a large extent on the coverage of farm operations by the census mail list.

The past five censuses of agriculture have included approximately 91 percent of farms in the United States and approximately 96 percent of agriculture production. Complete enumeration of agricultural operations satisfying the farm definition of \$1,000 or more in agricultural sales is complicated by fluctuations in agricultural operations qualifying for enumeration, the variety of arrangements under which farms are operated, the multiplicity of names used

by an operation, the number of operations in which an operator participates, the accuracy of data reporting, and other factors. A new mail list is compiled for each census because no current single list of agricultural operations is comprehensive.

An evaluation of census coverage has been conducted for each census of agriculture since 1945. The evaluation provides estimates of the completeness of census farm count and major census data items. In addition, the evaluation helps to identify problems in the census enumeration and provide information that can form the basis for improvements. The results of the 1992 Coverage Evaluation program will be published in volume 2, Subject Series (Part 2): Coverage Evaluation.

The evaluation of coverage for the 1992 census was designed to measure four components of error in the census mail list and in farm classification. Mail list error includes two components of error, a measurement of farms not on the census mail list (undercount) and a measurement of farms enumerated more than once in the census (overcount). Classification error includes two components of error, a measurement of farms classified as nonfarms in the census (undercount) and of nonfarms classified as farms in the census (overcount). Classification error arises from reporting and processing errors. Mail list undercount dominates all coverage errors. Net coverage error is defined as the difference between undercounted and overcounted farms. Measurements of these errors, as well as a description of the complete coverage program, will be available in the Coverage Evaluation report.

Mail List Coverage

A major problem with mail enumeration for the census of agriculture is the difficulty encountered in compiling a complete mail list. The percentage of farms included on the census mail list varies considerably by State. Several reasons have contributed to farm operator names not being included on the census mail list—the operation may have been started after the mail list was developed, the operation may be so small as not to appear in any of the agriculture-related source lists used in compiling the census list, or the operation may have been falsely classified as a nonfarm prior to mailout. A large proportion of the farms not included on the mail list are small in both acres and sales of agricultural products.

The 1992 Census of Agriculture Coverage Evaluation used the area segment sample of the 1992 June Agricultural Survey (JAS) of the National Agricultural Statistical Service (NASS) to estimate farms not on the census mail list. The Census Bureau contracted with NASS to augment the JAS data collection. The survey data collected by NASS will be protected under the confidentiality of title 13, U.S. Code. These JAS survey records were matched to the census mail list. Records that did not match were mailed a census of agriculture report form to estimate mail list

coverage. Estimates of farms not on the census mail list are computed using a capture-recapture dual frame estimator which will be described in the Coverage Evaluation report mentioned earlier.

Table G provides coverage evaluation estimates for one component of coverage error associated with the census of agriculture; that is, the error due to farms not on the census mail list. Also provided are estimates of selected characteristics of farms not on the mail list, estimates of characteristics of farms not on the mail list as a percentage of total farms in the State, and the percent relative standard error associated with each estimate. The estimate of total farms in the State is based on census farm count plus the estimated number of farms not on the census mail list. This estimate of total farms in the State was not adjusted for the components of error associated with classification and list duplication error. Estimates of these errors will be made at the regional, rather than the State level, and will be provided in the Coverage Evaluation report mentioned earlier.

Respondent and Enumerator Error

Incorrect or incomplete responses to the mailed census report form or to the questions posed by a telephone enumerator introduce error into the census data. Such incorrect information can lead, in some cases, to incorrect classification of farms. This type of reporting error is measured by the Classification Error Survey discussed later in this section. To reduce all types of reporting error, detailed instructions for completing the report form were provided to each addressee. Questions were phrased as clearly as possible based on tests of the census report form and each respondent's answers were checked for completeness and consistency.

Item Nonresponse

As information flows from data collection to tabulation, various types of item nonresponses are identified on the report forms. Nonresponse to particular questions on the report form that logically should be present may create a type of nonsampling error in both complete count and sample count data. When information from reporting farms is used to edit or impute for item nonresponse, the data may be biased due to characteristics of the nonreporting respondents differing from those reporting the item. Any attempt to correct the data items may not completely reflect this difference either at the element level (individual farm operation) or on the average.

Processing Error

All phases of processing for each report form are sources for the introduction of nonsampling error. The processing of the report forms includes clerical screening for farm activity, computerized check-in of report forms and follow-up of nonrespondents, keying and transmittal of

completed report forms, computerized editing of inconsistent and missing data, review and correction of individual records referred from the computer edit, review and correction of tabulated data, and electronic data processing. These operations undergo a number of quality control checks to ensure as accurate an application as possible, yet some errors are not detected and corrected.

Classification Error

An evaluation study of classification errors was conducted in the 1992 Census of Agriculture as part of the census coverage evaluation program. A sample of census mail list respondents was selected, and these addresses were reenumerated to determine whether they were a farm or nonfarm. A farm status determination was made based on the evaluation report form and compared with the census farm status which was based on the data reported on the report form. Differences in status were reconciled.

In past censuses, the proportion of farms undercounted due to classification errors was higher for farms with small values of sales. For the 1987 census, the classification error rate was higher for (1) farms with small values of sales, (2) farms with a small number of acres, (3) full-owner farms than part-owner or tenant farms, (4) operators with principal occupation other than farming, and (5) males than females. Results from the 1992 Classification Error Survey will be published in the Coverage Evaluation report.

EDITING DATA AND IMPUTATION FOR ITEM NONRESPONSE

The Census of Agriculture Complex Edit and Imputation System performs the following functions:

- Ensuring reasonable relationships between/among data items, values for various sizes of farms, and combinations of commodities.
- Ensuring necessary consistencies are present. There are more than 70 distinct consistency requirements.
- Ensuring geographic, legal, and physical constraints are met.

The system must perform these and similar functions for 900 data keycodes for sample records and 850 data keycodes for nonsample records.

For the 1992 Census of Agriculture, as in previous censuses, all reported data were keyed and then edited by computer. The edits were used to determine whether the reports met the minimum criteria to be counted as farms in the census. The complex edit and imputation system provided the basis for deciding to accept, impute (supply), delete, or alter the reported value for each data record item.

Whenever possible, edit imputations, deletions, and changes were based on component or related data on the respondent's report form. For some items, such as operator characteristics, data from the previous census were used when available. Values for other missing or unacceptable reported data items were calculated based on reported quantities and known price parameters.

When these and similar methods were not available and values had to be supplied, the imputation process used information reported for another farm operation in a geographically adjacent area with characteristics similar to those of the farm operation with incomplete data. For example, a farm operation that reported acres of corn harvested, but did not report quantity of corn harvested, was assigned the same bushels of corn per acre harvested as that of the last nearby farm with similar characteristics that reported acceptable yields during that particular execution of the computer edit. The imputation for missing items in each section of the report form was conducted separately; thus, assigned values for one operation could come from more than one respondent.

Prior to the imputation operation, a set of default values and relationships were assigned to the possible imputation variables. The relationships and values varied depending on the item being imputed. For example, different default values were assigned for several standard industrial classification and total value of sales categories when imputing hired farm labor expenses. These values and item relationships for the possible imputation variables were stored in the computer in a series of matrices.

Each execution of the computer edit consisted of records from only one State. The computer records were sorted by reported State and county. For a given execution of the edit, the stored entries in the various matrices were retained in memory only until a succeeding record having acceptable characteristics for some sections of the report form was processed by the computer. Then the acceptable responses of the succeeding operation replaced those previously stored. When a record processed through the edit had unreported or unacceptable data, the record was assigned the last acceptable ratio or response from an operation with a similar set of characteristics. Once each execution of the computer edit for a State was completed, the possible imputation variables were reset to the default values and relationships for subsequent executions.

After the initial computer edit, keyed reports not meeting the census farm definition were reviewed to ensure that the data were keyed correctly. Edit referrals were generated for about 25 percent of the reports included as farms; they were reviewed for keying accuracy to ensure that the computer edit actions were correct. If the results of the computer edit were not acceptable, corrections were made and the record was reedited.

Table C. Reliability Estimates of State Totals for All Farms: 1992

[For meaning of abbreviations and symbols, see introductory text]

Item	Total	Relative standard error of estimate (percent)	Item	Total	Relative standard error of estimate (percent)
FARMS AND LAND IN FARMS			FARM PRODUCTION EXPENSES¹		
Farms -----number--	66 937	1.5	Total farm production expenses -----farms--	66 936	1.5
Land in farms -----acres--	32 143 030	1.0	Average per farm -----dollars--	3 117 869	.5
Average size of farm -----acres--	480	1.8	Livestock and poultry purchased -----farms--	25 260	1.8
			-----\$1,000--	1 103 395	.3
			Feed for livestock and poultry -----farms--	49 595	1.6
			-----\$1,000--	628 412	.4
			Commercially mixed formula feeds -----farms--	16 787	2.0
			-----\$1,000--	268 026	.5
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD			Seeds, bulbs, plants, and trees -----farms--	20 447	1.9
Total sales (see text) -----farms--	66 937	1.5	-----\$1,000--	41 030	1.2
-----\$1,000--	3 562 646	.4	Commercial fertilizer -----farms--	34 703	1.8
Average per farm -----dollars--	53 224	1.6	-----\$1,000--	140 995	1.1
Farms by value of sales:			Agricultural chemicals -----farms--	22 332	1.8
Less than \$1,000 (see text) -----farms--	7 721	1.6	-----\$1,000--	57 080	1.3
\$1,000 to \$2,499 -----farms--	2 152	1.7	Petroleum products -----farms--	62 807	1.6
\$2,500 to \$4,999 -----farms--	8 181	1.7	-----\$1,000--	146 709	1.0
\$5,000 to \$9,999 -----farms--	13 967	1.7	Electricity -----farms--	37 258	1.7
\$10,000 to \$19,999 -----farms--	10 189	1.8	-----\$1,000--	28 232	1.1
\$20,000 to \$24,999 -----farms--	36 936	1.8	Hired farm labor -----farms--	20 070	1.9
\$25,000 to \$39,999 -----farms--	11 208	1.9	Contract labor -----farms--	144 750	.6
\$40,000 to \$49,999 -----farms--	79 893	1.9	-----\$1,000--	9 892	2.5
\$50,000 to \$99,999 -----farms--	9 907	2.2	Repair and maintenance -----farms--	23 629	2.3
\$100,000 to \$249,999 -----farms--	139 244	2.2	-----\$1,000--	53 464	1.6
\$250,000 to \$499,999 -----farms--	2 636	2.4	Customwork, machine hire, and rental of machinery and equipment -----farms--	158 445	1.2
\$500,000 or more -----farms--	58 604	2.4	-----\$1,000--	18 775	2.0
			Interest expense -----farms--	62 841	1.5
			-----\$1,000--	28 942	1.7
			Secured by real estate -----farms--	195 857	1.0
			-----\$1,000--	19 405	1.9
			Not secured by real estate -----farms--	114 700	1.4
			-----\$1,000--	17 144	1.9
			Cash rent -----farms--	81 157	.9
			-----\$1,000--	21 397	1.9
			Property taxes -----farms--	102 994	1.1
			-----\$1,000--	63 379	1.6
			All other farm production expenses -----farms--	56 103	1.3
			-----\$1,000--	58 968	1.6
				227 398	.7
Sales by commodity or commodity group:			NET CASH RETURN FROM AGRICULTURAL SALES FOR THE FARM UNIT (SEE TEXT)¹		
Crops, including nursery and greenhouse crops -----farms--	25 306	1.4	All farms -----number--	66 936	1.5
-----\$1,000--	778 813	.5	Average per farm -----dollars--	395 182	1.3
Grains -----farms--	17 554	1.5	Farms with net gains ² -----number--	32 310	1.8
-----\$1,000--	483 573	.6	Average net gain -----dollars--	608 861	.8
Corn for grain -----farms--	645	.9	Farms with net losses -----number--	34 626	1.7
-----\$1,000--	31 428	.3	Average net loss -----dollars--	213 679	1.7
Wheat -----farms--	16 626	1.5		6 171	2.5
-----\$1,000--	401 512	.7			
Soybeans -----farms--	1 191	1.2	GOVERNMENT PAYMENTS AND OTHER FARM-RELATED INCOME		
-----\$1,000--	23 547	.5	Government payments -----farms--	18 228	1.5
Sorghum for grain -----farms--	1 678	1.1	-----\$1,000--	144 599	.9
-----\$1,000--	23 376	.5	Other farm-related income ¹ -----farms--	11 605	2.5
Barley -----farms--	76	2.9	-----\$1,000--	57 595	3.2
-----\$1,000--	283	2.7	Customwork and other agricultural services -----farms--	4 655	3.5
Oats -----farms--	425	1.8	-----\$1,000--	31 533	3.8
-----\$1,000--	1 123	2.2	Gross cash rent or share payments -----farms--	4 846	3.6
Other grains -----farms--	350	1.6	-----\$1,000--	20 761	5.6
-----\$1,000--	2 305	1.1	Forest products and Christmas trees -----farms--	535	10.7
			-----\$1,000--	1 789	13.8
Cotton and cottonseed -----farms--	1 726	1.3	Other farm-related income sources -----farms--	3 216	3.7
-----\$1,000--	52 034	.5	-----\$1,000--	3 512	10.3
Tobacco -----farms--	-	-	COMMODITY CREDIT CORPORATION LOANS		
-----\$1,000--	-	-	Total -----farms--	2 264	1.5
Hay, silage, and field seeds -----farms--	9 767	1.4	-----\$1,000--	26 544	.6
-----\$1,000--	64 320	.9			
Vegetables, sweet corn, and melons -----farms--	607	1.8			
-----\$1,000--	13 085	1.1			
Fruits, nuts, and berries -----farms--	694	1.9			
-----\$1,000--	6 341	1.8			
Nursery and greenhouse crops -----farms--	436	1.3			
-----\$1,000--	96 063	.1			
Other crops -----farms--	1 102	1.7			
-----\$1,000--	63 399	.7			
Livestock, poultry, and their products -----farms--	54 892	1.5			
-----\$1,000--	2 783 832	.4			
Poultry and poultry products -----farms--	1 523	1.1			
-----\$1,000--	270 375	.1			
Dairy products -----farms--	1 365	1.1			
-----\$1,000--	142 826	.3			
Cattle and calves -----farms--	51 240	1.6			
-----\$1,000--	2 290 955	.4			
Hogs and pigs -----farms--	2 776	1.4			
-----\$1,000--	46 243	.5			
Sheep, lambs, and wool -----farms--	1 425	1.6			
-----\$1,000--	5 340	1.3			
Other livestock and livestock products (see text) -----farms--	4 328	1.4			
-----\$1,000--	28 094	1.0			
Value of agricultural products sold directly to individuals for human consumption (see text) -----farms--	1 504	1.6			
-----\$1,000--	3 643	2.0			

See footnotes at end of table.

Table C. Reliability Estimates of State Totals for All Farms: 1992 – Con.

[For meaning of abbreviations and symbols, see introductory text]

Item	Total	Relative standard error of estimate (percent)	Item	Total	Relative standard error of estimate (percent)
LAND IN FARMS ACCORDING TO USE			TENURE OF OPERATOR		
Total cropland ----- farms ..	53 197	1.5	All operators ----- farms ..	66 937	1.5
Harvested cropland ----- farms ..	14 520 063	1.1	Full owners ----- farms ..	32 143 030	1.0
1 to 9 acres ----- farms ..	42 015	1.5	Part owners ----- farms ..	8 693 265	1.6
10 to 19 acres ----- farms ..	8 272 889	.8	Tenants ----- farms ..	24 039	1.4
20 to 29 acres ----- farms ..	2 480	1.6	Land owned ----- farms ..	19 978 683	.8
30 to 49 acres ----- farms ..	11 678	1.8	Owned land in farms ----- farms ..	7 096	1.5
50 to 99 acres ----- farms ..	4 382	1.7	Land rented or leased from others ----- farms ..	3 471 082	1.0
100 to 199 acres ----- farms ..	58 123	1.7	Land rented or leased to others ----- farms ..	6 944	1.7
200 to 499 acres ----- farms ..	4 246	1.8			
500 to 999 acres ----- farms ..	94 240	1.8			
1,000 acres or more ----- farms ..	6 383	1.9			
	233 479	1.9			
	7 510	2.0			
	516 373	2.0			
	6 179	2.1			
	835 189	2.1			
	6 003	1.5			
	1 881 614	1.4			
	3 188	.4			
	2 192 188	.4			
	1 644	—			
	2 450 005	—			
Cropland:					
Pasture or grazing only ----- farms ..	30 691	1.6			
Other cropland ----- farms ..	4 462 007	1.6			
	12 522	1.4			
	1 785 167	1.0			
Total woodland ----- farms ..	17 940	1.6			
Pastureland and rangeland other than cropland and woodland pastured ----- farms ..	1 936 306	1.5			
Land in house lots, ponds, roads, wasteland, etc. ----- farms ..	33 391	1.5			
Irrigated land ----- farms ..	15 063 508	.8			
	29 949	1.5			
	623 153	1.4			
	2 581	1.1			
	512 487	.4			
Acres irrigated:					
1 to 9 acres ----- farms ..	573	1.7			
10 to 49 acres ----- farms ..	1 492	2.1			
50 to 99 acres ----- farms ..	448	2.5			
100 to 199 acres ----- farms ..	11 909	2.7			
200 to 499 acres ----- farms ..	389	1.9			
500 to 999 acres ----- farms ..	27 574	1.9			
1,000 acres or more ----- farms ..	464	1.4			
	62 335	1.3			
	447	.7			
	138 911	.7			
	112 671	.5			
	89	.4			
	157 595	—			
Harvested cropland irrigated ----- farms ..	2 379	1.1			
Pasture and other land irrigated ----- farms ..	478 068	.4			
	391	1.8			
	34 419	1.5			
Land under federal acreage reduction programs:					
Diverted under annual commodity programs ----- farms ..	8 913	1.3			
Conservation Reserve or Wetlands Reserve Programs ----- farms ..	234 208	.6			
	4 678	1.7			
	827 597	1.3			
VALUE OF LAND AND BUILDINGS ¹			FARMS BY TYPE OF ORGANIZATION		
Estimated market value of land and buildings ----- farms ..	66 936	1.5	Individual or family (sole proprietorship) ----- farms ..	60 304	1.5
Average per farm ----- \$1,000 ..	15 753 961	1.2	Partnership ----- farms ..	25 792 124	1.1
Average per acre ----- dollars ..	235 359	2.0	Corporation ----- farms ..	4 985	1.5
	496	1.6	Family held ----- farms ..	3 903 771	.7
			More than 10 stockholders ----- farms ..	1 085	1.1
			10 or less stockholders ----- farms ..	1 841 612	.3
			Other than family held ----- farms ..	18	5.1
			More than 10 stockholders ----- farms ..	1 067	1.1
			10 or less stockholders ----- farms ..	111	2.6
			Other—cooperative, estate or trust, institutional, etc. ----- farms ..	167 253	.6
				9	7.9
				102	2.7
				452	1.9
				438 270	.8
VALUE OF MACHINERY AND EQUIPMENT ¹			HIRED FARM LABOR		
Estimated market value of all machinery and equipment ----- farms ..	66 817	1.5	Hired workers by days worked:		
Average per farm ----- \$1,000 ..	2 134 331	1.2	150 days or more ----- farms ..	6 640	2.3
Average per acre ----- dollars ..	31 943	2.0	Less than 150 days ----- farms ..	12 613	1.3
				18 423	2.0
				40 582	2.0
AGRICULTURAL CHEMICALS ¹			INJURIES AND DEATHS		
Commercial fertilizer ----- farms ..	34 628	1.8	Farm-related injuries:		
acres on which used -----	7 725 743	1.1	Operator and family members ----- farms ..	484	1.7
			Hired workers ----- number ..	540	1.7
			Hired workers ----- farms ..	255	1.1
			Operator and family members ----- number ..	582	.6
			Farm-related deaths:		
			Operator and family members ----- farms ..	19	6.2
			Hired workers ----- number ..	22	5.4
			Hired workers ----- farms ..	1	—
				(D)	(D)

See footnotes at end of table.

Table C. Reliability Estimates of State Totals for All Farms: 1992 — Con.

[For meaning of abbreviations and symbols, see introductory text]

Item	Total	Relative standard error of estimate (percent)	Item	Total	Relative standard error of estimate (percent)
FARMS BY SIZE			LIVESTOCK—Con.		
1 to 9 acres ----- farms ..	2 832	1.6	Cattle and calves sold ----- farms ..	51 240	1.6
----- acres ..	9 382	1.7	----- number..	3 953 960	.6
10 to 49 acres ----- farms ..	9 614	1.6	----- \$1,000..	2 290 955	.4
----- acres ..	269 984	1.7	Hogs and pigs inventory ----- farms ..	3 415	1.4
50 to 69 acres ----- farms ..	3 150	1.8	----- number..	260 682	.7
----- acres ..	181 672	1.8	Hogs and pigs sold ----- farms ..	2 776	1.4
70 to 99 acres ----- farms ..	6 100	1.8	----- number..	500 299	.8
----- acres ..	494 605	1.8	----- \$1,000..	46 243	.5
100 to 139 acres ----- farms ..	5 099	1.8	Sheep and lambs of all ages inventory ----- farms ..	1 577	1.5
----- acres ..	591 391	1.8	----- number..	103 732	1.4
140 to 179 acres ----- farms ..	6 750	1.9	Sheep and lambs sold ----- farms ..	1 367	1.6
----- acres ..	1 066 051	1.9	----- number..	82 502	1.5
180 to 219 acres ----- farms ..	3 157	1.9	Horses and ponies inventory ----- farms ..	14 868	1.4
----- acres ..	622 854	1.9	----- number..	70 006	1.3
220 to 259 acres ----- farms ..	3 176	2.0	Horses and ponies sold ----- farms ..	3 204	1.4
----- acres ..	755 043	2.0	----- number..	13 289	1.4
260 to 499 acres ----- farms ..	10 901	2.1	POULTRY		
----- acres ..	3 943 403	2.1	Chickens 3 months old or older inventory ----- farms ..	3 224	1.6
500 to 999 acres ----- farms ..	8 202	1.9	----- number..	5 051 662	.4
----- acres ..	5 769 794	1.8	Hens and pullets of laying age ----- farms ..	3 159	1.6
1,000 to 1,999 acres ----- farms ..	5 133	1.0	----- number..	4 407 866	.4
----- acres ..	7 061 060	1.0	Broilers and other meat-type chickens sold ----- farms ..	529	.6
2,000 acres or more ----- farms ..	2 823	—	----- number..	138 607 293	.1
----- acres ..	11 377 791	—	CROPS HARVESTED		
FARMS BY STANDARD INDUSTRIAL CLASSIFICATION			Corn for grain or seed ----- farms ..	791	.9
Cash grains (011) ----- farms ..	8 078	1.5	----- acres..	123 567	.3
----- acres ..	6 174 290	.8	Sorghum for grain or seed ----- farms ..	16 188 972	.3
Field crops, except cash grains (013) ----- farms ..	4 377	1.5	----- acres..	2 076	1.1
----- acres ..	1 593 683	1.1	Wheat for grain ----- farms ..	281 244	.5
Vegetables and melons (016) ----- farms ..	284	2.4	----- bushels..	13 933 273	.5
----- acres ..	59 306	1.8	----- farms ..	16 716	1.5
Fruits and tree nuts (017) ----- farms ..	616	1.9	----- acres..	5 197 545	.7
----- acres ..	76 649	2.3	Barley for grain ----- farms ..	138 121 986	.7
Horticultural specialties (018) ----- farms ..	358	1.2	----- acres..	122	2.3
----- acres ..	31 319	1.1	Oats for grain ----- farms ..	5 133	2.1
General farms, primarily crop (019) ----- farms ..	1 585	1.5	----- bushels..	211 357	1.9
----- acres ..	978 544	.9	----- farms ..	1 006	1.6
Livestock, except dairy, poultry, and animal specialties (021) ----- farms ..	45 970	1.6	----- acres..	37 838	1.7
----- acres ..	21 810 185	1.0	Cotton ----- farms ..	1 278 578	1.6
Dairy farms (024) ----- farms ..	1 113	1.1	----- acres..	1 726	1.3
----- acres ..	525 482	.6	Soybeans for beans ----- farms ..	296 484	.6
Poultry and eggs (025) ----- farms ..	839	.8	----- bales..	212 041	.5
----- acres ..	158 302	.4	----- farms ..	1 196	1.2
Animal specialties (027) ----- farms ..	2 649	1.6	----- acres..	193 302	.6
----- acres ..	272 251	1.7	----- bushels..	4 975 025	.6
General farms, primarily livestock and animal specialties (029) ----- farms ..	1 068	2.0	Irish potatoes ----- farms ..	68	3.7
----- acres ..	463 019	1.7	----- acres..	1 318	.3
LIVESTOCK			----- cwt..	284 282	.1
Cattle and calves inventory ----- farms ..	52 241	1.5	Peanuts for nuts ----- farms ..	908	1.8
----- number..	4 736 594	.9	----- acres..	88 449	1.0
Beef cows ----- farms ..	44 115	1.6	----- pounds..	203 107 412	.8
----- number..	1 728 273	1.3	Hay—alfalfa, other tame, small grain, wild, grass silage, green chop, etc. (see text) ----- farms ..	32 299	1.6
Milk cows ----- farms ..	2 297	1.2	----- acres..	2 112 710	1.3
----- number..	90 312	.4	----- tons, dry..	3 992 843	1.2
			Alfalfa hay ----- farms ..	5 862	1.4
			----- acres..	323 603	.9
			----- tons, dry..	1 048 225	.8
			Vegetables harvested for sale (see text) ----- farms ..	607	1.8
			----- acres..	21 868	1.0
			Land in orchards ----- farms ..	2 112	1.6
			----- acres..	50 339	1.7

¹Data are based on a sample of farms.

²Farms with total production expenses equal to market value of agricultural products sold are included as farms with gains of less than \$1,000.

Table D. Reliability Estimates of State Totals for Farms With Sales of \$10,000 or More: 1992

[For meaning of abbreviations and symbols, see introductory text]

Item	Total	Relative standard error of estimate (percent)	Item	Total	Relative standard error of estimate (percent)
FARMS AND LAND IN FARMS			FARM PRODUCTION EXPENSES¹		
Farms ----- number ..	29 638	1.6	Total farm production expenses ----- farms ..	29 617	1.6
Land in farms ----- acres ..	26 343 427	.9	----- \$1,000 ..	2 914 286	.4
Average size of farm ----- acres ..	889	1.8	Average per farm ----- dollars ..	98 399	1.7
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD			NET CASH RETURN FROM AGRICULTURAL SALES FOR THE FARM UNIT (SEE TEXT)¹		
Total sales (see text) ----- farms ..	29 638	1.6	All farms ----- number ..	29 617	1.6
----- \$1,000 ..	3 429 697	.4	----- \$1,000 ..	466 077	1.1
Average per farm ----- dollars ..	115 720	1.6	Average per farm ----- dollars ..	15 737	1.9
Farms by value of sales:			Farms with net gains ² ----- number ..	19 973	1.8
\$10,000 to \$19,999 ----- farms ..	9 907	2.2	----- \$1,000 ..	583 954	.8
----- \$1,000 ..	139 244	2.2	Average net gain ----- dollars ..	29 237	2.0
\$20,000 to \$24,999 ----- farms ..	2 636	2.4	Farms with net losses ----- number ..	9 644	2.5
----- \$1,000 ..	58 604	2.4	----- \$1,000 ..	117 876	1.9
\$25,000 to \$39,999 ----- farms ..	4 629	2.2	Average net loss ----- dollars ..	12 223	3.1
----- \$1,000 ..	146 093	2.2	GOVERNMENT PAYMENTS AND OTHER FARM-RELATED INCOME		
\$40,000 to \$49,999 ----- farms ..	1 864	1.9	Government payments ----- farms ..	13 681	1.4
----- \$1,000 ..	83 045	1.9	----- \$1,000 ..	129 463	.7
\$50,000 to \$99,999 ----- farms ..	4 609	1.3	Other farm-related income ¹ ----- farms ..	7 201	3.5
----- \$1,000 ..	325 603	1.2	----- \$1,000 ..	46 101	3.5
\$100,000 to \$249,999 ----- farms ..	3 799	—	Customwork and other agricultural services ----- farms ..	3 222	3.7
----- \$1,000 ..	598 822	—	----- \$1,000 ..	27 879	4.1
\$250,000 to \$499,999 ----- farms ..	1 461	—	Gross cash rent or share payments ----- farms ..	2 557	4.5
----- \$1,000 ..	504 104	—	----- \$1,000 ..	14 032	7.3
\$500,000 or more ----- farms ..	733	—	Forest products and Christmas trees ----- farms ..	192	17.0
----- \$1,000 ..	1 574 183	—	----- \$1,000 ..	997	15.4
Sales by commodity or commodity group:			Other farm-related income sources ----- farms ..	2 581	3.7
Crops, including nursery and greenhouse crops ----- farms ..	17 154	1.4	----- \$1,000 ..	3 193	11.0
----- \$1,000 ..	755 659	.5	COMMODITY CREDIT CORPORATION LOANS		
Grains ----- farms ..	14 166	1.4	Total ----- farms ..	1 996	1.4
----- \$1,000 ..	471 826	.6	----- \$1,000 ..	26 163	.6
Corn for grain ----- farms ..	609	.9			
----- \$1,000 ..	31 351	.3			
Wheat ----- farms ..	13 540	1.4			
----- \$1,000 ..	390 987	.6			
Soybeans ----- farms ..	999	1.1			
----- \$1,000 ..	22 981	.5			
Sorghum for grain ----- farms ..	1 514	1.1			
----- \$1,000 ..	23 027	.5			
Barley ----- farms ..	67	2.7			
----- \$1,000 ..	273	2.7			
Oats ----- farms ..	338	1.8			
----- \$1,000 ..	988	2.3			
Other grains ----- farms ..	315	1.5			
----- \$1,000 ..	2 219	1.1			
Cotton and cottonseed ----- farms ..	1 611	1.3			
----- \$1,000 ..	51 684	.5			
Tobacco ----- farms ..	—	—			
----- \$1,000 ..	—	—			
Hay, silage, and field seeds ----- farms ..	5 240	1.5			
----- \$1,000 ..	55 104	.8			
Vegetables, sweet corn, and melons ----- farms ..	353	2.0			
----- \$1,000 ..	12 488	1.1			
Fruits, nuts, and berries ----- farms ..	348	2.3			
----- \$1,000 ..	5 848	1.9			
Nursery and greenhouse crops ----- farms ..	279	1.3			
----- \$1,000 ..	95 559	.1			
Other crops ----- farms ..	1 012	1.7			
----- \$1,000 ..	63 150	.7			
Livestock, poultry, and their products ----- farms ..	26 189	1.6			
----- \$1,000 ..	2 674 039	.3			
Poultry and poultry products ----- farms ..	870	.8			
----- \$1,000 ..	270 062	.1			
Dairy products ----- farms ..	1 253	1.1			
----- \$1,000 ..	142 508	.3			
Cattle and calves ----- farms ..	25 380	1.6			
----- \$1,000 ..	2 190 285	.4			
Hogs and pigs ----- farms ..	1 196	1.6			
----- \$1,000 ..	43 627	.5			
Sheep, lambs, and wool ----- farms ..	587	1.8			
----- \$1,000 ..	4 318	1.3			
Other livestock and livestock products (see text) ----- farms ..	1 572	1.6			
----- \$1,000 ..	23 240	1.1			
Value of agricultural products sold directly to individuals for human consumption (see text) ----- farms ..	531	2.0			
----- \$1,000 ..	2 635	2.3			

See footnotes at end of table.

Table D. Reliability Estimates of State Totals for Farms With Sales of \$10,000 or More: 1992—Con.

[For meaning of abbreviations and symbols, see introductory text]

Item	Total	Relative standard error of estimate (percent)	Item	Total	Relative standard error of estimate (percent)
LAND IN FARMS ACCORDING TO USE			FARMS BY TYPE OF ORGANIZATION		
Total cropland ----- farms ..	26 321	1.6	Individual or family (sole proprietorship) ----- farms ..	25 525	1.6
Harvested cropland ----- acres..	11 928 740	.9	Partnership ----- farms ..	20 576 970	1.0
Cropland: ----- farms ..	23 935	1.6	Corporation: ----- farms ..	2 931	1.5
Pasture or grazing only ----- acres..	7 531 406	.7	Family held ----- farms ..	3 490 725	.6
Total woodland ----- farms ..	14 215	1.7	More than 10 stockholders ----- farms ..	887	.9
Pastureland and rangeland other than cropland and woodland pastured ----- acres..	2 976 816	1.5	10 or less stockholders ----- farms ..	1 764 654	.3
Land in house lots, ponds, roads, wasteland, etc. ----- farms ..	6 921	1.8	Other than family held ----- farms ..	14	3.2
Irrigated land ----- acres..	1 139 237	1.4	More than 10 stockholders ----- farms ..	873	.9
Harvested cropland irrigated ----- farms ..	17 393	1.5	10 or less stockholders ----- farms ..	74	2.4
Pasture and other land irrigated ----- acres..	12 863 899	.7	Other—cooperative, estate or trust, institutional, etc. ----- farms ..	160 439	.6
Land under federal acreage reduction programs: ----- farms ..	13 153	1.6	Diverted under annual commodity programs ----- acres..	6	6.6
Conservation Reserve or Wetlands Reserve Programs ----- farms ..	411 551	1.3	Conservation Reserve or Wetlands Reserve Programs ----- acres..	221	2.1
Estimated market value of land and buildings ----- farms ..	2 040	1.1	Operator and family members ----- farms ..	350 639	.8
Average per farm ----- dollars	502 026	.4	Hired workers ----- farms ..		
Average per acre ----- dollars	1 947	1.1	150 days or more ----- farms ..	5 101	2.2
Land in house lots, ponds, roads, wasteland, etc. ----- farms ..	472 190	.4	Less than 150 days ----- farms ..	11 041	1.1
Land under federal acreage reduction programs: ----- farms ..	258	1.7	Workers ----- farms ..	12 103	2.0
Diverted under annual commodity programs ----- acres..	29 836	1.5	Workers ----- farms ..	29 405	2.1
Conservation Reserve or Wetlands Reserve Programs ----- farms ..	7 811	1.3	INJURIES AND DEATHS		
Conservation Reserve or Wetlands Reserve Programs ----- acres..	228 680	.6	Farm-related injuries: ----- farms ..		
Operator and family members ----- farms ..	3 183	1.4	Operator and family members ----- farms ..	307	1.7
Operator and family members ----- acres..	617 733	1.0	Hired workers ----- farms ..	346	1.7
VALUE OF LAND AND BUILDINGS ¹			Hired workers ----- farms ..	228	1.0
Estimated market value of land and buildings ----- farms ..	29 617	1.6	Hired workers ----- farms ..	549	.4
Average per farm ----- \$1,000..	11 850 520	1.1	Farm-related deaths: ----- farms ..		
Average per acre ----- dollars	400 126	1.9	Operator and family members ----- farms ..	13	7.2
Average per acre ----- dollars	454	1.5	Hired workers ----- farms ..	(D)	(D)
VALUE OF MACHINERY AND EQUIPMENT ¹			Hired workers ----- farms ..	1	—
Estimated market value of all machinery and equipment ----- farms ..	29 594	1.6	Hired workers ----- farms ..	(D)	(D)
Average per farm ----- \$1,000..	1 646 775	1.2	FARMS BY SIZE		
Average per acre ----- dollars	55 646	2.0	1 to 9 acres ----- farms ..	635	1.9
AGRICULTURAL CHEMICALS¹			10 to 49 acres ----- farms ..	854	1.6
Commercial fertilizer ----- farms ..	21 182	1.8	50 to 69 acres ----- farms ..	399	2.2
Acres on which used ----- acres..	7 111 284	1.0	70 to 99 acres ----- farms ..	864	1.9
TENURE OF OPERATOR			100 to 139 acres ----- farms ..	1 073	2.0
All operators ----- farms ..	29 638	1.6	140 to 179 acres ----- farms ..	2 025	2.2
Full owners ----- farms ..	26 343 427	.9	180 to 219 acres ----- farms ..	1 166	2.1
Part owners ----- farms ..	10 650	1.8	220 to 259 acres ----- farms ..	1 399	2.4
Tenants ----- farms ..	5 499 849	1.3	260 to 499 acres ----- farms ..	6 750	2.3
OWNED AND RENTED LAND			500 to 999 acres ----- farms ..	6 852	1.8
Land owned ----- farms ..	26 216	1.6	1,000 to 1,999 acres ----- farms ..	4 863	1.0
Owned land in farms ----- farms ..	14 416 847	1.0	2,000 acres or more ----- farms ..	2 758	—
Land rented or leased from others ----- farms ..	26 064	1.6	FARMS BY STANDARD INDUSTRIAL CLASSIFICATION		
Rented or leased land in farms ----- farms ..	13 343 388	1.0	Cash grains (011) ----- farms ..	5 762	1.4
Land rented or leased from others ----- farms ..	19 092	1.5	Field crops, except cash grains (013) ----- farms ..	1 572	1.6
Rented or leased land in farms ----- farms ..	13 139 802	.7	Vegetables and melons (016) ----- farms ..	125	3.1
Land rented or leased to others ----- farms ..	53 858	1.1	Fruits and tree nuts (017) ----- farms ..	87	3.7
Rented or leased land in farms ----- farms ..	18 988	1.5	Horticultural specialties (018) ----- farms ..	236	1.3
Land rented or leased to others ----- farms ..	3 341	1.7	General farms, primarily crop (019) ----- farms ..	780	1.7
Rented or leased land in farms ----- farms ..	1 213 222	1.4	Livestock, except dairy, poultry, and animal specialties (021) ----- farms ..	18 925	1.8
OPERATOR CHARACTERISTICS			Dairy farms (024) ----- farms ..	1 048	1.0
Operators by place of residence: ----- farms ..			Poultry and eggs (025) ----- farms ..	678	.5
On farm operated ----- farms ..	19 670	1.6	Animal specialties (027) ----- farms ..	351	2.2
Not on farm operated ----- farms ..	7 662	1.7	General farms, primarily livestock and animal specialties (029) ----- farms ..	74	3.1
Not reported ----- farms ..	2 306	1.4	LIVESTOCK		
Operators by principal occupation: ----- farms ..			Cattle and calves inventory ----- farms ..	24 749	1.6
Farming ----- farms ..	20 409	1.5	Beef cows ----- farms ..	4 060 050	.8
Other ----- farms ..	9 229	1.8	Milk cows ----- farms ..	20 142	1.8
Operators by days worked off farm: ----- farms ..			Milk cows ----- farms ..	1 356 977	1.3
Any ----- farms ..	13 084	1.7	Milk cows ----- farms ..	1 485	1.1
200 days or more ----- farms ..	7 880	1.8	Milk cows ----- farms ..	88 506	.4
Operators by sex: ----- farms ..			Cattle and calves sold ----- farms ..	25 380	1.6
Male ----- farms ..	27 921	1.6	Hogs and pigs inventory ----- farms ..	3 692 702	.5
Female ----- farms ..	1 717	1.7	Hogs and pigs sold ----- farms ..	2 190 285	.4
Average age of operator ----- years	55.0	2.3	Hogs and pigs sold ----- farms ..	1 295	1.6
			Hogs and pigs sold ----- farms ..	232 009	.6
			Hogs and pigs sold ----- farms ..	1 196	1.6
			Hogs and pigs sold ----- farms ..	459 874	.8
			Hogs and pigs sold ----- farms ..	43 627	.5
			Sheep and lambs of all ages inventory ----- farms ..	595	1.7
			Sheep and lambs sold ----- farms ..	76 457	1.4
			Sheep and lambs sold ----- farms ..	569	1.8
			Horses and ponies inventory ----- farms ..	63 305	1.6
			Horses and ponies sold ----- farms ..	5 804	1.5
			Horses and ponies sold ----- farms ..	30 316	1.4
			Horses and ponies sold ----- farms ..	1 175	1.6
			Horses and ponies sold ----- farms ..	8 636	1.6

See footnotes at end of table.

Table D. Reliability Estimates of State Totals for Farms With Sales of \$10,000 or More: 1992—Con.

[For meaning of abbreviations and symbols, see introductory text]

Item	Total	Relative standard error of estimate (percent)	Item	Total	Relative standard error of estimate (percent)
POULTRY			CROPS HARVESTED—Con.		
Chickens 3 months old or older inventory ----- farms --	850	1.8	Barley for grain ----- farms ..	111	2.1
----- number--	4 996 125	.4	----- acres..	4 960	2.1
Hens and pullets of laying age ----- farms --	827	1.9	----- bushels..	206 061	1.8
----- number--	4 362 126	.4	Oats for grain ----- farms ..	820	1.6
			----- acres..	33 044	1.6
Broilers and other meat-type chickens sold ----- farms --	473	.4	----- bushels..	1 135 749	1.6
----- number--	138 600 563	.1	Cotton ----- farms ..	1 611	1.3
			----- acres..	293 049	.6
			----- bales..	210 414	.5
			Soybeans for beans ----- farms ..	1 003	1.1
			----- acres..	186 289	.6
			----- bushels..	4 846 659	.6
			Irish potatoes ----- farms ..	30	4.3
			----- acres..	1 293	.2
			----- cwt..	280 997	.1
			Peanuts for nuts ----- farms ..	863	1.8
			----- acres..	87 772	1.0
			----- pounds..	202 460 542	.8
			Hay—alfalfa, other tame, small grain, wild, grass		
			silage, green chop, etc. (see text) ----- farms ..	17 684	1.6
			----- acres..	1 604 590	1.2
			----- tons, dry..	3 239 609	1.1
			Alfalfa hay ----- farms ..	4 435	1.4
			----- acres..	290 454	.9
			----- tons, dry..	976 727	.7
			Vegetables harvested for sale (see text) ----- farms ..	353	2.0
			----- acres..	20 943	1.0
			Land in orchards ----- farms ..	722	2.0
			----- acres..	30 756	2.0
CROPS HARVESTED					
Corn for grain or seed ----- farms --	711	.8			
----- acres..	122 631	.3			
----- bushels..	16 134 203	.3			
Sorghum for grain or seed ----- farms --	1 861	1.0			
----- acres..	273 733	.5			
----- bushels..	13 697 560	.5			
Wheat for grain ----- farms --	13 566	1.4			
----- acres..	4 998 378	.7			
----- bushels..	134 095 056	.6			

¹Data are based on a sample of farms.

²Farms with total production expenses equal to market value of agricultural products sold are included as farms with gains of less than \$1,000.

Table E. Reliability Estimates of Percent Change in State Totals: 1987 to 1992

[For meaning of abbreviations and symbols, see introductory text]

Item	All farms		Farms with sales of \$10,000 or more	
	Percent change from 1987 to 1992	Standard error of estimate	Percent change from 1987 to 1992	Standard error of estimate
Farms..... number..	-4.7	1.6	3.4	1.8
Land in farms..... acres ..	1.9	1.1	4.8	1.0
Average size of farm.....acres ..	6.9	2.1	1.3	2.0
Estimated market value of land and buildings ¹ :				
Average per farm.....dollars ..	9.5	2.5	4.1	2.4
Average per acre.....dollars ..	3.3	2.0	3.7	1.9
Estimated market value of all machinery and equipment ¹ :				
Average per farm.....dollars ..	8.4	2.5	3.9	2.5
Farms by size:				
1 to 9 acres.....	-22.7	1.5	-11.6	2.1
10 to 49 acres.....	-5.1	1.8	22.5	2.5
50 to 179 acres.....	-5.5	1.8	11.6	2.4
180 to 499 acres.....	-4.3	2.1	3.2	2.5
500 to 999 acres.....	-2.4	2.1	-2.0	2.1
1,000 to 1,999 acres.....	-	1.3	.8	1.3
2,000 acres or more.....	10.5	(L)	10.5	(L)
Total cropland.....farms ..	-4.6	1.6	2.2	1.8
Harvested cropland.....acres ..	.5	1.2	3.1	1.2
.....farms ..	-3.5	1.6	2.2	1.8
.....acres ..	13.0	1.1	16.4	1.1
Irrigated land.....farms ..	-14.8	1.2	-12.6	1.2
.....acres..	7.1	.7	8.1	.7
Market value of agricultural products sold.....\$1,000 ..	31.2	.7	33.4	.6
Average per farm.....dollars ..	37.7	2.4	29.0	2.4
Crops, including nursery and greenhouse crops.....\$1,000 ..	27.7	.9	29.5	.9
Livestock, poultry, and their products.....\$1,000 ..	32.3	.6	34.5	.6
Farms by value of sales:				
Less than \$2,500.....	-14.0	1.2	(X)	(X)
\$2,500 to \$4,999.....	-8.0	1.9	(X)	(X)
\$5,000 to \$9,999.....	-6.6	2.0	(X)	(X)
\$10,000 to \$24,999.....	-2.0	2.4	-2.0	2.4
\$25,000 to \$49,999.....	3.1	2.5	3.1	2.5
\$50,000 to \$99,999.....	2.9	1.7	2.9	1.3
\$100,000 to \$249,999.....	10.7	(L)	10.7	(L)
\$250,000 to \$499,999.....	24.3	(L)	24.3	(L)
\$500,000 or more.....	57.6	.1	57.6	.1
Total farm production expenses ¹\$1,000..	32.1	2.1	35.9	2.3
Average per farm.....dollars ..	38.7	2.5	31.3	2.5
Net cash return from agricultural sales for the farm unit (see text) ¹farms..	-4.7	1.6	3.5	1.9
.....\$1,000 ..	33.5	3.0	27.4	2.2
Average per farm.....dollars ..	40.1	4.0	23.2	3.1
Operators by principal occupation:				
Farming.....	.7	1.7	2.1	1.7
Other.....	-9.5	1.6	6.5	2.2
Operators by days worked off farm:				
Any.....	-10.1	4.7	.5	5.3
200 days or more.....	-9.4	4.7	5.4	5.6
Livestock and poultry:				
Cattle and calves inventory.....farms ..	-2.4	1.6	4.1	1.9
.....number..	4.4	1.1	6.5	1.0
Beef cows.....farms ..	-	1.8	8.5	2.1
.....number..	6.0	1.6	9.7	1.5
Milk cows.....farms ..	-18.8	1.2	-8.4	1.3
.....number..	-2	.6	1.1	.6
Cattle and calves sold.....farms ..	-4.4	1.6	2.5	1.8
.....number..	8.9	.7	11.9	.7
Hogs and pigs inventory.....farms ..	-8.0	1.5	-10.6	1.7
.....number..	39.1	1.4	45.2	1.5
Hogs and pigs sold.....farms ..	-10.2	1.5	-10.6	1.7
.....number..	44.3	1.4	50.7	1.5
Sheep and lambs inventory.....farms ..	-12.3	1.6	-15.8	1.8
.....number..	-13.9	1.6	-15.3	1.6
Chickens 3 months old or older inventory.....farms ..	-43.5	1.0	-41.4	1.2
.....number..	-13.3	.4	-12.9	.4
Broilers and other meat-type chickens sold.....farms ..	-4.9	.9	-6.2	.6
.....number..	54.5	.2	54.5	.2
Selected crops harvested:				
Sorghum for grain or seed.....farms ..	-29.9	1.0	-25.2	1.0
.....acres..	-17.1	.7	-15.2	.7
.....bushels..	-7.8	.7	-6.2	.7
Wheat for grain.....farms ..	-10.3	1.5	-1.9	1.6
.....acres..	21.5	1.1	26.2	1.1
.....bushels..	21.7	1.1	25.4	1.0
Cotton.....farms ..	-40.7	1.0	-37.8	1.0
.....acres..	-17.7	.8	-17.0	.8
.....bales..	-30.8	.6	-30.4	.6
Soybeans for beans.....farms ..	-23.6	1.1	-18.8	1.3
.....acres..	-15.9	.9	-14.1	.9
.....bushels..	-11.5	.9	-10.5	.9
Peanuts for nuts.....farms ..	-16.5	1.8	-14.8	1.9
.....acres..	2.3	1.4	3.2	1.4
.....pounds..	6.6	1.2	7.0	1.2
Hay—alfalfa, other tame, small grain, wild, grass silage, green chop, etc. (see text).....farms ..	.3	1.7	4.1	1.9
.....acres..	10.0	1.5	11.5	1.5
.....tons, dry..	16.4	1.5	17.0	1.4

¹Data are based on a sample of farms.

Table F. Reliability Estimates for the State and County Totals: 1992 — Con.

[For meaning of abbreviations and symbols, see introductory text]

Geographic area	Livestock and poultry — Con.							
	Hens and pullets of laying age inventory				Broilers and other meat-type chickens sold			
	Farms		Total		Farms		Total	
	Number	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)
Oklahoma ----	3 159	1.6	4 407 866	.4	529	.6	138 607 293	.1
Adair -----	85	3.0	1 347 043	.6	58	1.1	27 739 248	.1
Alfalfa -----	16	8.3	421	11.0	—	—	—	—
Atoka -----	40	6.3	859	8.1	2	20.6	(D)	(D)
Beaver -----	28	5.7	522	8.1	—	—	—	—
Beckham -----	20	8.8	197	11.0	—	—	—	—
Blaine -----	24	7.6	1 951	2.6	—	—	—	—
Bryan -----	73	4.0	8 334	15.4	—	—	—	—
Caddo -----	29	6.5	465	8.6	—	—	—	—
Canadian -----	35	5.7	884	9.1	2	24.8	(D)	(D)
Carter -----	54	5.9	1 072	7.3	2	21.7	(D)	(D)
Cherokee -----	74	4.6	(D)	(D)	21	2.1	3 930 352	(L)
Choctaw -----	28	7.8	454	8.5	6	6.7	1 122 005	(L)
Cimarron -----	13	7.0	339	7.1	—	—	—	—
Cleveland -----	49	4.8	895	6.9	2	23.6	(D)	(D)
Coal -----	31	6.1	929	8.8	—	—	—	—
Comanche -----	29	6.8	459	10.0	1	38.8	(D)	(D)
Cotton -----	18	8.8	171	11.6	—	—	—	—
Craig -----	39	5.3	1 062	16.1	1	—	(D)	(D)
Creek -----	110	3.2	(D)	(D)	8	12.2	342	21.6
Custer -----	15	7.8	314	10.7	—	—	—	—
Delaware -----	79	3.2	666 200	1.1	77	—	26 359 308	—
Dewey -----	39	4.6	864	5.1	—	—	—	—
Ellis -----	26	7.9	362	10.1	—	—	—	—
Garfield -----	51	4.1	1 215	6.0	—	—	—	—
Garvin -----	56	4.6	(D)	(D)	1	39.3	(D)	(D)
Grady -----	59	4.4	1 235	5.4	1	—	(D)	(D)
Grant -----	15	6.5	292	6.8	—	—	—	—
Greer -----	7	13.7	70	13.0	—	—	—	—
Harmon -----	3	20.6	(D)	(D)	—	—	—	—
Harper -----	17	8.0	390	16.0	—	—	—	—
Haskell -----	45	5.2	1 019	7.7	10	—	3 074 810	—
Hughes -----	29	7.1	434	8.2	—	—	—	—
Jackson -----	10	10.2	223	20.2	—	—	—	—
Jefferson -----	17	8.2	521	17.0	—	—	—	—
Johnston -----	35	5.2	724 156	(L)	—	—	—	—
Kay -----	54	4.2	1 472	6.3	—	—	—	—
Kingfisher -----	22	6.8	638	14.3	—	—	—	—
Kiowa -----	11	7.6	251	11.1	—	—	—	—
Latimer -----	33	5.5	694	7.0	2	18.5	(D)	(D)
Le Flore -----	80	4.3	137 362	.2	117	1.0	28 852 735	.3
Lincoln -----	101	3.5	1 640	4.4	1	50.0	(D)	(D)
Logan -----	40	5.1	1 023	11.7	—	—	—	—
Love -----	28	7.5	409	8.5	2	27.9	(D)	(D)
McClain -----	29	6.2	451	7.1	1	37.4	(D)	(D)
McCurtain -----	75	3.5	466 038	1.9	161	.4	41 670 158	.1
McIntosh -----	40	5.4	740	6.6	—	—	—	—
Major -----	37	5.9	950	6.5	—	—	—	—
Marshall -----	18	8.3	273	9.9	—	—	—	—
Mayes -----	84	3.2	(D)	(D)	7	3.4	604 774	(L)
Murray -----	21	7.0	(D)	(D)	—	—	—	—
Muskogee -----	77	4.1	1 228	5.2	2	19.3	(D)	(D)
Noble -----	22	7.7	370	11.6	—	—	—	—
Nowata -----	33	5.0	871	7.4	—	—	—	—
Okfuskee -----	36	5.8	4 710	37.4	1	33.9	(D)	(D)
Oklahoma -----	44	5.1	849	6.1	1	41.5	(D)	(D)
Okmulgee -----	57	4.5	1 307	5.3	1	35.9	(D)	(D)
Osage -----	53	4.4	1 333	5.8	1	39.6	(D)	(D)
Ottawa -----	41	4.8	(D)	(D)	11	3.0	4 334 225	(L)
Pawnee -----	40	5.4	772	8.8	—	—	—	—
Payne -----	43	5.1	1 735	4.5	6	15.6	(D)	(D)
Pittsburg -----	77	4.4	(D)	(D)	3	21.4	(D)	(D)
Pontotoc -----	58	4.5	853	6.4	—	—	—	—
Pottawatomie -----	62	4.3	991	5.9	—	—	—	—
Pushmataha -----	49	5.3	75 441	5.0	1	44.6	(D)	(D)
Roger Mills -----	27	7.5	877	13.0	2	25.0	(D)	(D)
Rogers -----	89	3.7	2 415	6.3	2	25.5	(D)	(D)
Seminole -----	53	5.0	763	6.6	3	18.1	(D)	(D)
Sequoyah -----	62	4.5	48 175	.2	3	16.6	(D)	(D)
Stephens -----	41	5.5	492	6.9	—	—	—	—
Texas -----	21	6.7	838	4.2	—	—	—	—
Tillman -----	17	7.6	353	12.4	3	20.6	215	20.6
Tulsa -----	47	5.3	1 136	8.6	1	35.8	(D)	(D)
Wagoner -----	29	6.4	976	9.3	—	—	—	—
Washington -----	36	5.1	702	5.6	1	34.2	(D)	(D)
Washita -----	15	8.8	190	10.9	1	41.9	(D)	(D)
Woods -----	25	5.7	692	6.0	3	14.3	390	18.2
Woodward -----	34	5.4	826	5.6	—	—	—	—

See footnotes at end of table.

Table G. State Estimates of the Not on the Mail List Component of Farm Coverage Error: 1992

[Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text]

Item	Census published farms		Not on mail list ¹		Percent not on mail list ¹	
	Total (number)	Relative standard error of estimate (percent)	Total (number)	Relative standard error of estimate (percent)	Total (percent)	Standard error of percent
Farms ----- number	66 937	1.5	7 590	21.6	10.2	2.0
Land in farms ----- acres	32 143 030	1.0	713 912	19.6	2.2	.4
Average size of farm ----- acres	480.2	1.8	94.1	17.9	(X)	(X)
Farms by size:						
Less than 10 acres -----	2 832	1.6	778	44.6	21.5	7.7
10 to 49 acres -----	9 614	1.6	3 236	30.3	25.2	5.7
Less than 50 acres -----	12 446	1.6	4 014	26.3	24.4	4.9
50 acres or more -----	54 491	1.6	3 577	24.5	6.2	1.4
50 to 99 acres -----	9 250	1.7	1 964	40.9	17.5	6.0
100 to 179 acres -----	11 849	1.8	819	38.5	6.5	2.3
180 acres or more -----	33 392	1.6	794	35.1	2.3	.8
Harvested cropland ----- farms	42 015	1.5	3 039	23.6	6.7	1.5
----- acres	8 272 889	.8	90 546	23.0	1.1	.2
Farms by value of sales:						
Less than \$1,000 -----	7 721	1.6	3 655	28.7	32.1	6.2
\$1,000 to \$2,499 -----	8 181	1.7	1 843	31.6	18.4	4.7
Less than \$2,500 -----	15 902	1.6	5 497	24.9	25.7	4.7
\$2,500 or more -----	51 035	1.6	2 093	24.2	3.9	.9
\$2,500 to \$9,999 -----	21 397	1.8	1 664	27.6	7.2	1.8
\$10,000 or more -----	29 638	1.6	429	36.6	1.4	.5
Market value of agricultural products sold ----- \$1,000	3 562 646	.4	24 229	22.9	.7	.2
Farms by standard industrial classification:						
Crops (01) -----	15 298	1.4	1 977	31.9	11.4	3.2
Livestock (02) -----	51 639	1.5	5 614	22.1	9.8	2.0
Farms by type of organization:						
Individual or family -----	60 304	1.5	6 970	19.9	10.4	1.9
Partnership or corporation -----	6 181	1.4	604	58.7	8.9	4.7
Other -----	452	1.9	-	(X)	-	(X)
Farms by tenure of operator:						
Full owners -----	35 802	1.6	6 036	22.3	14.4	2.8
Part owners and tenants -----	31 135	1.4	1 347	32.8	4.1	1.3
Part owners -----	24 039	1.4	772	37.9	3.1	1.1
Tenants -----	7 096	1.5	576	52.4	7.5	3.6
Operators by place of residence:						
On farm operated -----	44 951	1.5	4 179	26.1	8.5	2.0
Not on farm operated -----	16 622	1.6	803	40.2	4.6	1.8
Not reported -----	5 364	1.5	2 608	28.3	32.7	6.3
Operators by principal occupation:						
Farming -----	33 279	1.5	1 191	35.9	3.5	1.2
Other -----	33 658	1.6	4 878	21.8	12.7	2.4
Operators by sex:						
Male -----	61 611	1.5	6 754	20.6	9.9	1.9
Female -----	5 326	1.6	837	50.9	13.6	5.8
Operators by race:						
White -----	63 781	1.5	5 469	22.8	7.9	1.7
Black and other races -----	3 156	1.6	601	49.1	16.0	6.7
Operators by years on present farm:						
4 years or less -----	8 672	1.5	2 389	30.4	21.6	5.2
5 years or more -----	46 219	1.5	2 213	32.3	4.6	1.4
Average years on present farm -----	19.5	2.2	8.7	31.0	(X)	(X)
Not reported -----	12 046	1.5	2 988	25.9	19.9	4.2
Average age of operator -----	55.0	2.1	49.8	21.1	(X)	(X)

Note: These estimates do not account for incorrectly classified farms or farms appearing more than once in the census and are subject to change in the 1992 Coverage Evaluation publication. See appendix C text for further explanation.

¹Estimates are based on a sample survey conducted independently of census data collection.