
Appendix C.

Statistical Methodology

THE SCREENING PHASE AND THE MAIL LIST MODEL

The 1997 Census of Agriculture featured a pre-census screening phase that surveyed selected records, by mail or telephone, for presence or absence of agricultural activity. Records selected for screening had a low probability of qualifying as farms. All records responding to the screener and reporting no agricultural activity were removed from the census mail list. Eliminating nonfarm records from the mail list reduced respondent burden and data collection costs.

The screening phase included nearly 500,000 records. Records were selected for screening using one of the following criteria:

- 1) Records on selected agriculture specialty lists that had no other list source,
- 2) Records identified by a mail list model as having a low probability of being a farm.

A mail list model predicted the probability that an addressee on the 1997 preliminary census mail list operated a farm. The model defined groups based on combinations of characteristics such as source(s) of the mail list record, expected value of agricultural production, and geographic location. Farm proportions were estimated for these groups by calculating the proportion of 1992 census respondent records that were farms which exhibited the characteristics defined by the group. This proportion, also called the in-scope rate, provided an estimate of the probability that an addressee in the group operated a farm.

Each address record on the 1997 preliminary census 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. Records with a farm probability of approximately 30 percent or less were selected for screening, along with records included on selected agriculture specialty lists as noted above.

Before screening, the preliminary census mail list consisted of 3,314,790 records. There were 478,298 records selected for screening. Of these, 125,570 records were determined to be nonfarms as a result of the screening phase and were removed. These records were removed from the final census mail list. The remaining 3,189,220 records received census report forms.

1997 CENSUS OF AGRICULTURE

CENSUS SAMPLE DESIGN

All name and address records on the final census mail list were designated to receive a 1997 Census of Agriculture report form. Two different types of census report forms, sample and nonsample, were used to collect data. Sections 1 through 20 and 28 through 32 of the sample form were identical to sections on the nonsample census form. Sample form sections 21 through 27 contained additional questions on usage of fertilizers and chemicals, farm production expenditures, value of machinery and equipment, value of land and buildings, farm-related income, and hired workers. There were 11 regional versions of the nonsample form and 13 regional versions of the sample form with listings of crops varying by region. These 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. Mail list records were selected into the sample with certainty if they (1) were expected to have large total value of agricultural products sold or large acreage, (2) were multi-unit operations (i.e., separate farms producing under one company organization), (3) were in a county with less than 100 farms in 1992, or (4) had other special characteristics. Farms with special characteristics were abnormal farms, such as institutional farms, experimental and research farms, and Indian reservations. Mail list records in counties containing 100 to 199 farms in 1992 were systematically sampled at a rate of 1 in 2; records in counties containing 200 to 299 farms in 1992 were systematically sampled at a rate of 1 in 4; and records in counties containing 300 or more farms in 1992 were systematically sampled at a rate of 1 in 6. The remaining mail list records not chosen to receive the sample form received the nonsample census form. This differential sampling scheme was used to provide reliable data for the sample sections of the report form for all counties.

EDITING DATA AND IMPUTATION FOR ITEM NONRESPONSE

The census of agriculture complex edit and imputation system is an automated computerized system that performed the following functions:

- Ensured reasonable relationships between/among data items, values for various sizes of farms, combinations of commodities, and economic interactions.
- Ensured necessary consistencies were present (there were more than 70 distinct consistency requirements).
- Ensured climatic, geographic, legal, and physical constraints were met.

The system performed these and similar functions for more than 900 data key codes for sample records and approximately 850 data key codes for nonsample records.

For the 1997 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 for that record 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 fixed 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 was 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 Classifications 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 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 the same 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. An edit run usually consisted of 10,000 or more records.

After the initial computer edit, all keyed reports not meeting the census farm definition were reviewed to ensure that the data had been keyed correctly. Edit referrals were generated for 17 percent of the reports included as farms; they were reviewed for keying accuracy and 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 re-edited.

CENSUS ESTIMATION

The 1997 Census of Agriculture used two types of statistical estimation procedures to account for whole farm nonresponse and sample data collection. The procedures were necessary because some farm operators did not respond to the census despite numerous attempts to contact them, and estimates for certain data items were based on a sample of farm operators rather than a full enumeration.

Whole Farm Nonresponse Estimation

Whole farm nonresponse to the census occurred when a response was never received for a record. If the record was a large farm, as defined by value of production or acreage, or a unique farm operation, intensive telephone or personal followup was conducted during census processing to obtain a response. If these attempts failed, either the NASS survey database, the census historic database, or other more current sources were used to impute data for the record.

During mail list development, the State Statistical Offices (SSOs), in an effort to reduce respondent burden, identified records that participated in multiple NASS surveys and/or situations where there were special reporting relationships between an enumerator and a respondent. These records were referred to as tagged records. The SSOs had full responsibility for the data collection for these records, including imputation of data for the record if a response was not obtainable.

Whole farm nonresponse that occurred within the remaining universe of records was accounted for by a statistical weighting procedure. The weights of the responding farms were adjusted to account for farms that did not respond. The information needed for this process was obtained from the 1997 Nonresponse Survey. The SSOs conducted the nonresponse survey using computer-assisted telephone interviewing (Blaise-CATI) or personal enumeration when telephone contact was not possible. Alaska and Rhode

Island were not eligible for the survey because all nonrespondents were subject to extensive followup. In these cases, data were collected by telephone or other methods. The nonresponse survey collected information from a sample of census nonrespondents to determine farm status and estimate the proportion of farms in the nonresponse universe. The information was then used to estimate the number of nonresponding farm operations by State and county.

The 1997 Nonresponse Survey consisted of a stratified systematic sample of the nonresponse records within each State. The sample was selected near the end of the census follow-up operations. Five strata were defined to be homogeneous on probability of farm status and were based on screener status, total value produced, and list source(s) of the mail list record.

Based on survey results, estimates of the proportion of census nonrespondents operating farms were made for each stratum in the State. The estimates were applied to the total number of census nonrespondents in that stratum, providing a State estimate of the number of census nonrespondents that operated farms. The number of census nonrespondents that operated farms was then derived for each county by stratum. This estimation procedure assumed that the distribution of farms in a stratum by county was the same for census nonrespondents as for census respondents.

Within each stratum in a county, a noninteger nonresponse weight was calculated and assigned to each eligible respondent farm record. Census respondent farms that were designated as large farms or tagged records or as farms that exhibited "rare" commodities were ineligible to represent nonrespondent farms and were excluded from the nonresponse weighting procedure. These records were assigned nonresponse weights of 1.0.

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, divided by the number of eligible census respondent farms. Stratum controls were established to ensure that this weight never exceeded 2.0. For the published tabulations of the complete count items, the noninteger nonresponse weight was randomly rounded to an integer weight of either 1 or 2 for each record. For the sample count items, the noninteger nonresponse weight was used in the calculation of the final sample weight.

Table A quantifies the effect of the nonresponse estimation procedure on selected census data items. The percentages in this table are 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 this table do not reflect the effect of item nonresponse to individual census data items. The effect of this item nonresponse is discussed in the "Census Nonsampling Error" section.

Sample Estimation

Sample data estimation determined the population totals that would have resulted from a complete census for the items in sections 21 through 27 of the sample form. The estimates were obtained from a weighting procedure that assigned 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.

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 were multiplied by 6.

The noninteger sample weight is calculated for each respondent sample farm by multiplying the noninteger nonrespondent weight by the sampling factor. For published tabulations of the sample count items, the noninteger sample weight was randomly rounded to an integer weight for each record. For certainty farms, the sampling factor equals 1 so the sample weight is just equal to the nonresponse weight. Sampling factor calculation for non-certainty farms is described below.

Within a county, the weighting procedure for non-certainty farms was performed in three steps using three variables. The first variable contained eight 1997 total value of agricultural production (TVP) groups. The second and third variables, Standard Industrial Classification (SIC) code and farm acreage, contained two groups. The three sets of groups were:

TVP	SIC	Acres
\$1 to \$999	01, 08 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 classified the sample records into 32 mutually exclusive initial strata formed by the three variable groups. The total and sample farm counts were expanded to account for nonresponse. Each cell containing sample farm records was assigned an initial sample factor equal to the ratio of the total farm count to the sample farm count. This factor was approximately equal to the inverse of the probability of selecting a farm for the census sample.

The second step in the estimation procedure combined, when necessary, the 32 initial strata to increase the reliability of the weighting procedure. Any stratum that contained less than 10 sample farms or had a factor greater than twice the mail sample rate was collapsed with another stratum. The mail sample rate was either 2, 4, or 6,

depending on whether the county had a 1 in 2, 1 in 4, or 1 in 6 sample selection rate. The collapsing occurred within the 32 initial 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 final strata and used to calculate final sample factors.

The final step calculated the noninteger sample weight as the product of the final sampling factor and the noninteger nonresponse weight. As described previously, the noninteger sample weight for each record is randomly rounded to an integer weight which is used in published tabulations. For example, if the final weight for a farm was 7.2, then the record would be rounded to either 7 or 8.

CENSUS SAMPLING ERROR

The sample for the 1997 Census of Agriculture was only one of a large number of possible samples of the same size that could have been selected using the same sample design. In this context, "sample" refers to the sample for both the nonresponse survey and the selection of farms to receive sample forms.

The standard error, or sampling error, of a survey estimate is a measure of the variation among the estimates from all possible samples. It is a measure of precision - that is, how well an estimate from a particular sample approximates the true population parameter. The percent relative standard error of an estimate is defined as the standard error of the estimate divided by the value of the estimate, then multiplied by 100. The true population parameter can be defined or conceptualized several different ways. One way is to think of the true population parameter as the average result of all possible samples (selected using a given sample design). A second way is to think of the true population parameter as the figure obtained from carrying out a complete enumeration of the population.

If all possible samples were selected, each of the samples surveyed under essentially the same conditions, and an estimate and its standard error 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 true population parameter.
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 true population parameter.

The following example illustrates the computations necessary to produce a confidence statement 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 0.1 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 true population parameter. 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. All farm operators were asked the complete count items. 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.

Only a sample of farm operators were asked the sample count items. These items appeared only in sections 21 through 27 of the sample 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, farm-related income, and hired workers.

Variability in the estimates of complete count items was due only to the nonresponse survey estimation procedure. With regard to the estimates of sample count items, variability was due to both the nonresponse survey estimation procedure and the census sample selection and estimation procedure. Therefore, variability in the sample count item estimates tends to be larger than the variability in the complete count item estimates. Percent relative standard error is a common measure of variability.

Table B provides the generalized reliability estimates of the estimated number of farms in a county that reported complete count and sample count items. The top half of the table shows the percent relative standard errors for estimated number of farms in a county that reported a complete count item, and the bottom half relates to sample count items. These reliability estimates are derived from regression equations. Separate regression equations were used to produce each section of table B. 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 the appropriate counties in the State. 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 1992 Census of Agriculture, variability in sample count

item estimates came only from nonresponse survey estimation procedures. The estimated relative standard error for a sample count item in these counties may be obtained using the first part of table B.

Use caution when referring to the "Sample Count Item" section of table B to make inferences on counties. Some counties may have been sampled at the rate of 1 in 2 or 1 in 4, but the reliability estimates shown were computed using only data from counties sampled at the rate of 1 in 6. Therefore, the reliability estimates shown would likely be overstated (or conservative) if the county was actually sampled at a higher rate.

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 standard error for percent change in State totals from 1992 to 1997. 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 1997 and the 1992 estimate for that characteristic to the 1992 estimate. This ratio is multiplied by 100 to obtain the percent change. The standard error of a percent change estimate 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 the (1) total number of farms, (2) number of large farms included with certainty, (3) size classifications of the farms sampled, (4) amount of nonresponse, (5) general agricultural characteristics, and (6) specific characteristic being measured.

The farm counts and related estimates displayed in tables A through F relate to unadjusted census totals. These totals are the same as the "Census total" displayed in the first column of table G (which will be discussed later in this appendix).

For most of the tables in this appendix, and also many of the tables throughout the publication, there is a footnote that reads "Data are based on a sample of farms." The table entries that this footnote relate to are estimates of totals. To illustrate, suppose that the entry "other farm-related income" is shown with this footnote and has some number of farms given. This number given would represent an estimated total number of farms with "other farm-related income," based on the farms that were in the sample. This number should not be interpreted as the number of farms in the sample that have "other farm-related income."

CENSUS NONSAMPLING ERROR

The accuracy of the census counts is 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. Nonsampling errors arise from many sources, including respondent or enumerator error or incorrect data keying, editing, or imputing for missing data. These nonsampling errors are further discussed in this section. Nonsampling error due to mail list incompleteness and duplication as well as misclassification of records on the mail list is called coverage error. The section titled "Coverage Evaluation" discusses the evaluation studies conducted to measure the extent of this error in the census.

Respondent and Enumerator Error

Incorrect or incomplete responses to the census report form or to the questions posed by an enumerator can introduce error into the census data. To reduce reporting error, detailed instructions for completing the report form were provided to each respondent. Questions were phrased as clearly as possible based on previous tests of the report form. In addition, each respondent's answers were checked for completeness and consistency by the complex edit and imputation system.

Item Nonresponse

As information flowed from data collection to tabulation, various types of item nonresponses were identified on the census report forms. Nonresponse to particular questions on the census report form that logically should have been present created a type of nonsampling error in both complete count and sample count data. In this case, information from a similar farm was used to impute for these missing data items. The resulting data may have been biased if the characteristics of the nonreporting respondents were different from those of reporting respondents for those items.

Processing Error

All phases of processing for each census report form were potential sources for the introduction of nonsampling error. An automated check-in recorded that the report had been returned and excluded from further followup mailings. Approximately one-third of the mail returns were reviewed to resolve questions dealing with multiple reports, respondent remarks, or no reported data. The remaining mail returns (about two-thirds) were batched and sent directly to data keying, along with some of the reviewed cases containing farm data. Keyed records were transmitted, formatted, and run through the complex edit and imputation system. About one-fifth of all forms edited were clerically reviewed for inconsistencies, omissions, or questionable values. While reviewing these forms, the edit review staff determined if the action taken by the computer edit and imputation system was correct. Edited records were tabulated to the county level. Each county was reviewed and, when necessary, individual records were corrected prior to publication.

Developing accurate processing methods is complicated by the complex structure of agriculture. Among the complexities are the many places to be included, the variety of arrangements under which farms are operated, the continuing changes in the relationship of operators to the farm operated, the expiration of leases and the initiation or renewal of leases, the problem of obtaining a complete list of agriculture operations, the difficulty of contacting and identifying some types of contractor/contractee relationships, the operator's absence from the farm during the data collection period, and the operator's opinion that part or all of the operation does not qualify and should not be included in the census. During data collection and processing of the census, all operations underwent a number of quality control checks to ensure as accurate an application as possible.

COVERAGE EVALUATION

Coverage Overview

The primary objectives of the census of agriculture are to accurately count U.S. farms, measure commodity production and sales, and measure demographic characteristics of farm operators. Since 1945, an evaluation of census coverage has been conducted for each census of agriculture to provide estimates of the completeness of census farm counts. These results help to identify problems and focus improvements for future censuses.

According to coverage evaluation results, the past five censuses of agriculture included an average of 92 percent of U.S. farms and 98 percent of agriculture production. Complete enumeration of agricultural operations satisfying the farm definition of \$1,000 or more in agricultural sales is complicated by the variety of arrangements under which farms are operated, the multiplicity of names used for an operation, the number of operations in which an operator participates, and the difficulty in classifying those operations just around the \$1,000 sales range. In 1997, extensive efforts were made to compile as complete and accurate a mail list as possible, while reducing the duplication and number of nonfarm operations on the list.

The 1997 coverage evaluation program was designed to measure four components of error in the census farm counts. These components include:

1. Undercount due to farms Not on the Mail List (NML)
2. Overcount due to farms Duplicated or enumerated more than once (DUP)
3. Undercount due to farms Incorrectly Classified as nonfarms (ICU)
4. Overcount due to nonfarms Incorrectly Classified as farms (ICO).

The first component, mail list undercount, is by far the largest component of coverage error. Duplication, though occurring far less frequently, can involve larger farms and have a larger impact on acreage and sales estimates. The

last two components involve the misclassification of either farms or nonfarms. Misclassification can arise from errors in either reporting or processing the data.

Table G - Coverage Estimates - illustrates the effect of coverage adjustments on census farm counts by demographic characteristics, land in farms, and total value of sales. The coverage total is defined as the net difference between undercounted and overcounted farms. The adjusted census total is the sum of the census total and the net coverage total. The relative standard error is shown for the final census coverage adjusted number. This number will be similar to the relative standard error for the census number, except when the coverage total is negative or close to zero. The coverage adjustment percentage shows the coverage total as a percentage of total census adjusted farms for that characteristic.

The 1997 Census of Agriculture is the first census to include all four components of coverage error in table G. Previous publications only included the coverage error component due to farms not on the mail list (NML). Because of this, caution should be taken when comparing coverage estimates from table G with previous years. In addition, the coverage total is a negative number for some characteristics. This means that the number of farms overcounted for this characteristic was greater than the number of farms undercounted.

Area Frame Surveys to Measure Mail List Undercoverage

Names and addresses collected in the 1997 June Agricultural Survey and 1997 Fall Area Survey were used to estimate the undercount due to farms not on the census mail list (NML). These names were matched to the census mail list, and those that did not match were contacted by telephone or person. The enumerator verified whether the operation had reported in the census, and if not, a census of agriculture report form was completed.

The percentage of farms missed in the census varies considerably by State. In general, farms not on the mail list tended to be small in acreage, production, and sales of agricultural products. Farm operations could be missed for various reasons, including the possibility that the operation started after the mail list was developed, the operation may be so small as not to appear in any agriculture-related source lists, or the operation may have been falsely classified as a nonfarm prior to mailout.

Classification Error Survey to Measure Three Types of Coverage Error

The remaining three types of coverage error were measured by the Classification Error Survey. This survey was used to estimate the number of farms counted more than once (DUP), the number of farms misclassified as nonfarms (ICU), and the number of nonfarms misclassified as farms (ICO). A sample of census of agriculture respondents was selected for reinterview to determine their farm/nonfarm status and collect information to identify

potential duplication. The farm classification from this interview was compared with the classification on the census of agriculture report form. Any differences between these two classifications were reconciled to determine the true farm status. Each operation was reviewed for duplication by matching the additional information received from the reinterview (landlords, tenants, other names, etc.) to the list of census respondents. Potential duplication was reviewed and discrepancies reconciled.

In general, the classification error rate is higher for small farms close to the \$1,000 agricultural sales requirement. This rate is also higher for farms with small acreage (less than 49 acres), higher for tenant farms than for full- or part-owner farms, and higher for farms where farming is not the operator's principal occupation.

Coverage Estimation

The adjusted census total, T, is estimated as the census farm count, C, plus undercount and minus overcount adjustments. Undercount includes 1) farms not on the mail

list (NML) and 2) farms incorrectly classified as nonfarms (ICU). Overcount includes 3) nonfarms incorrectly classified as farms (ICO) and 4) farms duplicated in the census (DUP). Altogether, the adjusted census total is:

$$T = C + (NML + ICU) - (ICO + DUP).$$

In some States, estimates of misclassification of farms owned by operators having rare demographic characteristics were based on particularly small sample sizes. Where such small sample sizes occurred, a form of small area estimation was used in which data from similar States contributed to that State's estimates. In these cases, the coverage totals are weighted totals of the direct State estimate and the direct estimate from the region. Direct estimates were used to the largest extent possible, based on the amount of survey cases available for the particular item being estimated.

Table A. Percent of State Totals Contributed by Whole Farm Nonresponse Estimation: 1997

Item	Percent of total	Item	Percent of total
Farms	11.5	Corn for grain or seed	7.7
Land in farms	8.9	Wheat for grain	8.0
Estimated market value of land and buildings ¹	8.6	Livestock and poultry inventory:	
Market value of agricultural products sold	5.8	Cattle and calves	7.9
Harvested cropland	8.0	Hogs and pigs	3.0
		Layers 20 weeks old and older .....	.4

¹Data are based on a sample of farms.

Table B. Reliability Estimates for Number of Farms in a County Reporting a Complete Count Item or Sample Count Item: 1997

Farms	Relative standard error of estimate (percent)	Farms	Relative standard error of estimate (percent)
COMPLETE COUNT ITEM		SAMPLE COUNT ITEM	
Number of farms reporting:		Number of farms reporting:	
25	5.9	25	43.9
50	4.1	50	30.7
75	3.2	75	24.8
100	2.7	100	21.2
150	2.1	150	16.9
200	1.7	200	14.2
300	1.1	300	10.9
500 .....	.9	500	7.3
750 .....	.7	750	4.6
1,000 .....	.6	1,000	2.1
1,500 .....	.5	1,500	1.8
2,000 .....	.4	2,000	1.5

Table C. Reliability Estimates of State Totals for All Farms: 1997

[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 ..	90 792	.6	Total farm production expenses farms ..	90 786	.6
Land in farms acres ..	31 166 699	.5	..... \$1,000 ..	8 405 838	.4
Average size of farm acres ..	343	.8	Average per farm dollars ..	92 590	.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 ..	90 792	.6	All farms number ..	90 786	.6
..... \$1,000 ..	11 947 894	.3	..... \$1,000 ..	2 969 179	.8
Average per farm dollars ..	131 596	.7	Average per farm dollars ..	32 705	1.0
Farms by value of sales:			Farms with net gains ² number ..	60 033	.8
Less than \$1,000 (see text) farms ..	9 230	.9	..... \$1,000 ..	3 256 653	.7
..... \$1,000 ..	906	1.1	Average net gain dollars ..	54 248	1.0
\$1,000 to \$2,499 farms ..	3 961	.8	Farms with net losses number ..	30 753	1.1
..... \$1,000 ..	6 671	.8	..... \$1,000 ..	287 473	1.7
\$2,500 to \$4,999 farms ..	4 577	.7	Average net loss dollars ..	9 348	2.0
..... \$1,000 ..	16 650	.7	GOVERNMENT PAYMENTS AND OTHER FARM-RELATED INCOME		
\$5,000 to \$9,999 farms ..	5 878	.7	Government payments farms ..	67 795	.6
..... \$1,000 ..	42 406	.7	..... \$1,000 ..	536 924	.6
\$10,000 to \$19,999 farms ..	7 383	.7	Other farm-related income ¹ farms ..	39 905	1.1
..... \$1,000 ..	107 420	.7	..... \$1,000 ..	260 021	2.2
\$20,000 to \$24,999 farms ..	3 124	.9	..... \$1,000 ..	10 656	2.2
..... \$1,000 ..	69 801	.9	..... \$1,000 ..	86 843	3.5
\$25,000 to \$39,999 farms ..	7 366	.8	Gross cash rent or share payments farms ..	11 241	2.2
..... \$1,000 ..	236 214	.8	..... \$1,000 ..	134 239	3.4
\$40,000 to \$49,999 farms ..	4 082	.9	Forest products, excluding Christmas trees and maple products farms ..	774	8.8
..... \$1,000 ..	182 826	.9	..... \$1,000 ..	4 037	13.7
\$50,000 to \$99,999 farms ..	13 735	.8	Other farm-related income sources farms ..	28 494	1.2
..... \$1,000 ..	994 678	.8	..... \$1,000 ..	34 902	1.9
\$100,000 to \$249,999 farms ..	19 119	.7	COMMODITY CREDIT CORPORATION LOANS		
..... \$1,000 ..	3 089 575	.7	Total farms ..	12 999	.6
\$250,000 to \$499,999 farms ..	8 404	.4	..... \$1,000 ..	508 209	.5
..... \$1,000 ..	2 875 675	.3			
\$500,000 or more farms ..	3 933	—			
..... \$1,000 ..	4 325 072	—			
Sales by commodity or commodity group:					
Crops, including nursery and greenhouse crops farms ..	68 415	.6			
..... \$1,000 ..	6 187 269	.5			
Grains farms ..	64 058	.6			
..... \$1,000 ..	6 011 171	.5			
Corn for grain farms ..	56 466	.6			
..... \$1,000 ..	3 225 141	.5			
Wheat farms ..	699	1.2			
..... \$1,000 ..	2 936	2.0			
Soybeans farms ..	56 373	.6			
..... \$1,000 ..	2 765 812	.5			
Sorghum for grain farms ..	32	4.8			
..... \$1,000 ..	121	6.2			
Barley farms ..	76	3.6			
..... \$1,000 ..	178	5.0			
Oats farms ..	5 638	.7			
..... \$1,000 ..	11 024	.8			
Other grains farms ..	287	1.6			
..... \$1,000 ..	5 960	2.2			
Cotton and cottonseed farms ..	—	—			
..... \$1,000 ..	—	—			
Tobacco farms ..	—	—			
..... \$1,000 ..	—	—			
Hay, silage, and field seeds farms ..	14 636	.6			
..... \$1,000 ..	88 970	.7			
Vegetables, sweet corn, and melons farms ..	776	1.2			
..... \$1,000 ..	8 568	1.8			
Fruits, nuts, and berries farms ..	323	1.8			
..... \$1,000 ..	3 627	3.0			
Nursery and greenhouse crops farms ..	819	1.2			
..... \$1,000 ..	73 208	.8			
Other crops farms ..	115	2.8			
..... \$1,000 ..	1 725	2.7			
Livestock, poultry, and their products farms ..	51 843	.6			
..... \$1,000 ..	5 760 625	.2			
Poultry and poultry products farms ..	1 598	.9			
..... \$1,000 ..	414 429	.1			
Dairy products farms ..	3 958	.8			
..... \$1,000 ..	408 694	.6			
Cattle and calves farms ..	38 548	.6			
..... \$1,000 ..	1 850 796	.3			
Hogs and pigs farms ..	18 370	.5			
..... \$1,000 ..	3 029 972	.2			
Sheep, lambs, and wool farms ..	4 598	.7			
..... \$1,000 ..	30 214	.9			
Other livestock and livestock products (see text) farms ..	3 023	.8			
..... \$1,000 ..	26 520	1.4			
Value of agricultural products sold directly to individuals for human consumption (see text) farms ..	2 174	.8			
..... \$1,000 ..	7 475	1.4			

See footnotes at end of table.

Table C. Reliability Estimates of State Totals for All Farms: 1997—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..	83 375	.6	All operators farms..	90 792	.6
Harvested cropland farms..	26 821 844	.5	Full owners farms..	31 166 699	.5
Farms by acres harvested:	74 951	.6	Part owners farms..	7 149 906	.7
1 to 9 acres farms..	23 323 249	.5	Tenants farms..	19 074 894	.5
10 to 19 acres farms..	4 587	.7	Land owned farms..	16 795 890	.6
20 to 29 acres farms..	22 534	.8	Owned land in farms farms..	75 898	.6
30 to 49 acres farms..	3 768	.7	Land rented or leased from others farms..	14 354 684	.6
50 to 99 acres farms..	50 236	.8	Rented or leased land in farms farms..	48 208	.6
100 to 199 acres farms..	2 604	.8	Landlords acres..	16 988 397	.5
200 to 499 acres farms..	60 762	.8	Other acres..	120 737	.5
500 to 999 acres farms..	4 263	.8	Land rented or leased to others farms..	47 890	.6
1,000 acres or more farms..	161 011	.8	Landlords acres..	16 812 015	.5
Other cropland farms..	8 807	.8			
Pasture or grazing only farms..	638 400	.8			
Other cropland farms..	14 539	.8			
Total woodland farms..	2 100 089	.8			
Pastureland and rangeland other than cropland and woodland pastured farms..	21 216	.7			
Land in house lots, ponds, roads, wasteland, etc. farms..	6 864 110	.7			
Irrigated land farms..	11 290	.6			
Acres irrigated:	7 721 915	.6			
1 to 9 acres farms..	3 877	—			
10 to 49 acres farms..	5 704 192	—			
50 to 99 acres farms..	28 797	.6			
100 to 199 acres farms..	2 001 198	.7			
200 to 499 acres farms..	24 270	.7			
500 to 999 acres farms..	1 497 397	.8			
1,000 acres or more farms..	1 497 397	.8			
Harvested cropland irrigated farms..	930	1.1			
Pasture and other land irrigated farms..	123 084	1.1			
Land under Conservation Reserve or Wetlands Reserve Programs farms..	35	5.0			
	1 899	9.7			
	24 137	.7			
	1 707 901	.9			
VALUE OF LAND AND BUILDINGS¹			OPERATOR CHARACTERISTICS		
Estimated market value of land and buildings farms..	90 786	.6	Operators by place of residence:		
Average per farm \$1,000..	51 438 152	.7	On farm operated	66 661	.6
Average per acre dollars..	566 587	.9	Not on farm operated	19 439	.8
	1 697	.9	Not reported	4 692	.7
VALUE OF MACHINERY AND EQUIPMENT¹			Operators by principal occupation:		
Estimated market value of all machinery and equipment farms..	90 747	.6	Farming	56 256	.6
Average per farm \$1,000..	7 318 851	.8	Other	34 536	.6
Average per acre dollars..	80 651	1.0	Operators by days worked off farm:		
AGRICULTURAL CHEMICALS¹			Any	45 408	.6
Commercial fertilizer farms..	65 495	.7	200 days or more	28 673	.6
Acres on which used..	14 473 220	.7	Operators by sex:		
			Male farms..	86 174	.6
			Female farms..	30 335 233	.5
			Other farms..	4 618	.9
			Average age of operator years..	831 466	1.1
				52.4	.8
			FARMS BY TYPE OF ORGANIZATION		
			Individual or family (sole proprietorship) farms..	75 880	.6
			Partnership farms..	23 526 085	.5
			Corporation:	8 231	.9
			Family held farms..	3 373 783	.7
			More than 10 stockholders farms..	5 733	.9
			10 or less stockholders farms..	3 992 642	.7
			Other than family held farms..	104	3.0
			More than 10 stockholders farms..	5 629	.9
			10 or less stockholders farms..	395	1.5
			Other—cooperative, estate or trust, institutional, etc. farms..	126 835	1.4
				64	3.0
				331	1.7
				553	1.6
				147 354	1.7
			HIRED FARM LABOR¹		
			Hired workers by days worked:		
			150 days or more farms..	10 990	1.9
			Less than 150 days farms..	20 517	1.5
				29 661	1.2
				73 630	1.5
			INJURIES AND DEATHS		
			Farm-related injuries:		
			Operator and family members farms..	1 131	1.0
			Hired workers number..	1 314	1.0
				346	1.0
				604	.8
			Farm-related deaths:		
			Operator and family members farms..	30	—
			Hired workers number..	30	—
				6	—
				6	—

See footnotes at end of table.

Table C. Reliability Estimates of State Totals for All Farms: 1997—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		
1 to 9 acres farms..	5 049	.7	Cattle and calves inventory farms..	38 435	.6
10 to 49 acres farms..	20 555	.7	number..	3 647 129	.5
50 to 69 acres farms..	11 580	.6	Beef cows farms..	27 452	.6
70 to 99 acres farms..	305 198	.6	number..	1 029 172	.6
100 to 139 acres farms..	3 183	.8	Milk cows farms..	4 208	.8
140 to 179 acres farms..	186 237	.8	number..	222 142	.6
180 to 219 acres farms..	6 718	.7	Cattle and calves sold farms..	38 548	.6
220 to 259 acres farms..	547 358	.7	number..	2 881 122	.3
260 to 499 acres farms..	6 517	.8	\$1,000..	1 850 796	.3
500 to 999 acres farms..	762 391	.8	Hogs and pigs inventory farms..	17 243	.5
1,000 to 1,999 acres farms..	8 107	.8	number..	14 651 919	.2
2,000 acres or more farms..	1 278 230	.8	Hogs and pigs sold farms..	18 370	.5
	5 265	.8	number..	27 495 818	.2
	1 040 454	.8	\$1,000..	3 029 972	.2
	5 093	.8	Sheep and lambs of all ages inventory farms..	4 431	.7
	1 210 670	.8	number..	265 305	.8
	18 560	.7	Sheep and lambs sold farms..	4 536	.7
	6 767 595	.7	number..	319 349	.9
	14 833	.7	Horses and ponies inventory farms..	9 636	.6
	10 213 853	.7	number..	60 421	.7
			Horses and ponies sold farms..	2 199	.8
			number..	9 605	1.4
			POULTRY		
			Layers and pullets 13 weeks old and older inventory (see text) farms..	1 892	.9
			number..	24 876 834	.1
			Layers 20 weeks old and older farms..	1 831	.9
			number..	21 509 521	.1
			Broilers and other meat-type chickens sold farms..	519	1.4
			number..	6 852 810	1.1
FARMS BY NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM			SELECTED CROPS HARVESTED		
Oilseed and grain farming (1111) farms..	53 656	.7	Corn for grain or seed farms..	61 860	.6
Vegetable and melon farming (1112) farms..	22 329 587	.5	acres..	11 595 308	.5
Fruit and tree nut farming (1113) farms..	16 367	2.0	bushels..	1 537 482 128	.5
Greenhouse, nursery, and floriculture production (1114) farms..	3 203	3.0	acres..	8 405	.7
Other crop farming (1119) farms..	9 812	2.3	tons, green..	241 549	.5
Beef cattle ranching and farming (112111) farms..	641	1.4	Wheat for grain farms..	3 993 158	.6
Cattle feedlots (112112) farms..	29 876	2.3	acres..	22 123	1.8
Dairy cattle and milk production (11212) farms..	3 871	.7	bushels..	905 333	2.0
Hog and pig farming (1122) farms..	850 574	.8	Oats for grain farms..	10 823	.7
Poultry and egg production (1123) farms..	11 392	.6	acres..	211 985	.7
Sheep and goat farming (1124) farms..	2 182 642	.7	Soybeans for beans farms..	14 293 977	.6
Animal aquaculture and other animal production (1125, 1129) farms..	3 914	.7	acres..	56 436	.6
	1 488 310	.5	bushels..	9 944 865	.5
	2 675	.8	Potatoes, excluding sweetpotatoes farms..	445 574 589	.5
	745 821	.8	acres..	109	2.9
	9 388	.5	cwt..	1 468	2.4
	2 828 344	.4	Hay—alfalfa, other tame, small grain, wild, grass silage, green chop, etc. (see text) farms..	296 675	2.2
	448	1.2	acres..	37 711	.6
	66 692	1.1	acres..	1 575 777	.6
	1 251	1.0	tons, dry..	4 365 999	.6
	60 638	1.8	Alfalfa hay farms..	31 165	.6
			acres..	1 082 904	.6
			tons, dry..	3 406 219	.6
			Vegetables harvested for sale (see text) farms..	786	1.2
			acres..	12 533	2.3
			Land in orchards farms..	448	1.5
			acres..	2 616	2.8

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.

Table D. Reliability Estimates of State Totals for Farms With Sales of \$10,000 or More: 1997

[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	67 146	.6	Total farm production expenses farms	67 253	.6
Land in farms acres	29 199 099	.5	Average per farm dollars	8 268 599	.4
Average size of farm acres	435	.8	Livestock and poultry purchased farms	26 425	1.2
			Average per farm dollars	1 251 288	.6
			Feed for livestock and poultry farms	38 325	.5
			Commercially mixed formula feeds farms	1 574 248	1.3
			Average per farm dollars	23 094	.7
			Seeds, bulbs, plants, and trees farms	61 508	.7
			Average per farm dollars	485 782	.7
			Commercial fertilizer farms	58 908	.8
			Agricultural chemicals farms	631 760	.8
			Average per farm dollars	56 056	.8
			Petroleum products farms	517 109	.8
			Average per farm dollars	66 224	.7
			Electricity farms	341 493	.7
			Average per farm dollars	60 006	.7
			Hired farm labor farms	122 461	.8
			Contract labor farms	29 501	1.1
			Average per farm dollars	315 099	3.0
			Repair and maintenance farms	5 192	.9
			Average per farm dollars	24 207	2.7
			Customwork, machine hire, and rental of machinery and equipment farms	62 496	.7
			Average per farm dollars	484 715	.8
			Interest farms	37 494	1.0
			Average per farm dollars	164 332	1.6
			Secured by real estate farms	47 288	.9
			Average per farm dollars	581 677	.9
			Not secured by real estate farms	30 891	1.1
			Average per farm dollars	331 332	1.2
			Cash rent farms	32 925	1.1
			Average per farm dollars	250 345	1.0
			Property taxes farms	34 801	1.0
			Average per farm dollars	864 539	1.0
			All other farm production expenses farms	57 349	.7
			Average per farm dollars	214 050	1.0
			NET CASH RETURN FROM AGRICULTURAL SALES FOR THE FARM UNIT (SEE TEXT) ¹	67 252	.6
			Average per farm dollars	695 840	.7
			All farms number	67 253	.6
			Average per farm dollars	3 040 631	.8
			Farms with net gains ² number	45 212	1.0
			Average per farm dollars	54 873	.8
			Farms with net losses number	3 246 731	.7
			Average net gain dollars	59 168	1.0
			Average net loss dollars	12 380	2.0
			Average net loss dollars	206 099	2.2
			Average net loss dollars	16 648	3.0
			GOVERNMENT PAYMENTS AND OTHER FARM-RELATED INCOME		
			Government payments farms	54 471	.6
			Average per farm dollars	471 002	.5
			Other farm-related income ¹ farms	33 271	1.1
			Average per farm dollars	214 817	2.3
			Customwork and other agricultural services farms	10 015	2.2
			Average per farm dollars	85 214	3.6
			Gross cash rent or share payments farms	6 980	2.8
			Average per farm dollars	92 803	4.1
			Forest products, excluding Christmas trees and maple products farms	473	11.4
			Average per farm dollars	2 774	16.2
			Other farm-related income sources farms	25 827	1.3
			Average per farm dollars	34 026	1.9
			COMMODITY CREDIT CORPORATION LOANS		
			Total farms	12 819	.6
			Average per farm dollars	507 923	.5
			Value of agricultural products sold directly to individuals for human consumption (see text) farms	1 450	1.0
			Average per farm dollars	6 480	1.5

See footnotes at end of table.

Table D. Reliability Estimates of State Totals for Farms With Sales of \$10,000 or More: 1997—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	64 374	.6	Individual or family (sole proprietorship) farms	54 684	.6
Harvested cropland acres	25 709 148	.5	Partnership farms	21 847 725	.5
Cropland: acres	63 256	.6	Corporation: acres	6 545	.9
Pasture or grazing only farms	23 075 749	.5	Family held farms	3 199 484	.7
. acres	22 196	.7	More than 10 stockholders acres	5 314	.9
Total woodland farms	1 744 036	.7	10 or less stockholders farms	3 925 095	.7
Pastureland and rangeland other than cropland and woodland pastured farms	14 942	.7	Other than family held acres	89	3.1
Land in house lots, ponds, roads, wasteland, etc. farms	961 588	.7	More than 10 stockholders farms	5 225	.9
Irrigated land acres	13 032	.7	10 or less stockholders farms	294	1.6
Harvested cropland irrigated farms	1 221 685	.7	Other—cooperative, estate or trust, institutional, etc. farms	114 473	1.4
Pasture and other land irrigated acres	45 919	.6	. . . . . acres	46	2.8
Land under Conservation Reserve or Wetlands Reserve Programs farms	1 306 678	.6	. . . . . farms	248	1.8
. acres	813	1.1	. . . . . acres	309	1.9
. acres	123 536	1.1	. . . . . acres	112 322	1.8
. acres	805	1.1			
. acres	122 116	1.1	HIRED FARM LABOR¹		
. acres	15	7.5	Hired workers by days worked: farms	10 182	1.9
. acres	1 420	11.7	150 days or more workers	19 665	1.5
			Less than 150 days farms	26 163	1.2
			. . . . . workers	67 141	1.6
			INJURIES AND DEATHS		
			Farm-related injuries: farms	992	1.0
			Operator and family members number	1 156	1.1
			Hired workers farms	334	1.0
			. . . . . number	581	.7
			Farm-related deaths: farms	23	—
			Operator and family members number	(D)	(D)
			Hired workers farms	4	—
			. . . . . number	(D)	(D)
			FARMS BY SIZE		
			1 to 9 acres	2 002	.9
			10 to 49 acres	2 638	.8
			50 to 69 acres	1 250	1.1
			70 to 99 acres	3 714	.8
			100 to 139 acres	4 318	.8
			140 to 179 acres	6 373	.8
			180 to 219 acres	4 334	.8
			220 to 259 acres	4 520	.8
			260 to 499 acres	17 494	.7
			500 to 999 acres	14 637	.7
			1,000 to 1,999 acres	5 096	.3
			2,000 acres or more	770	—
			FARMS BY NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM		
			Oilseed and grain farming (1111)	43 338	.7
			Vegetable and melon farming (112)	81	3.2
			Fruit and tree nut farming (113)	46	4.4
			Greenhouse, nursery, and floriculture production (114)	365	1.7
			Other crop farming (119)	1 671	1.0
			Beef cattle ranching and farming (12111)	5 431	.7
			Cattle feedlots (12112)	3 128	.8
			Dairy cattle and milk production (1212)	2 654	.8
			Hog and pig farming (122)	8 827	1.2
			Poultry and egg production (123)	265	5.5
			Sheep and goat farming (124)	185	2.4
			Animal aquaculture and other animal production (125, 1129)	1 155	1.0
			LIVESTOCK		
			Cattle and calves inventory farms	30 503	.6
			. . . . . number	3 483 198	.5
			Beef cows farms	21 355	.7
			. . . . . number	948 135	.7
			Milk cows farms	4 016	.8
			. . . . . number	221 584	.6
			Cattle and calves sold farms	31 130	.6
			. . . . . number	2 808 143	.3
			. . . . . \$1,000	1 822 299	.3
			Hogs and pigs inventory farms	16 440	.5
			. . . . . number	14 619 553	.2
			Hogs and pigs sold farms	17 516	.5
			. . . . . number	27 468 666	.2
			. . . . . \$1,000	3 027 440	.2
			Sheep and lambs of all ages inventory farms	2 838	.8
			. . . . . number	220 520	.9
			Sheep and lambs sold farms	2 937	.8
			. . . . . number	280 163	1.0
			Horses and ponies inventory farms	5 404	.7
			. . . . . number	32 703	.9
			Horses and ponies sold farms	1 076	1.1
			. . . . . number	6 409	1.9

See footnotes at end of table.

Table E. Reliability Estimates of Percent Change in State Totals: 1992 to 1997

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

Item	All farms		Farms with sales of \$10,000 or more	
	Percent change from 1992 to 1997	Standard error of estimate	Percent change from 1992 to 1997	Standard error of estimate
Farms	-6.0	1.1	-12.9	1.1
Land in farms	-6	1.0	-2.4	1.0
Average size of farm	5.5	1.7	12.1	1.8
Estimated market value of land and buildings ¹ :				
Average per farm	43.7	2.4	52.3	2.6
Average per acre	40.0	2.3	40.6	2.3
Estimated market value of all machinery and equipment ¹ :				
Average per farm	16.9	2.1	25.1	2.3
Farms by size:				
1 to 9 acres	-29.2	1.0	-43.8	.9
10 to 49 acres	11.9	1.5	-8.0	1.4
50 to 179 acres	-	1.0	-13.7	.9
180 to 499 acres	-14.9	1.0	-18.1	1.0
500 to 999 acres	-6.3	1.1	-6.6	1.1
1,000 to 1,999 acres	20.6	.4	20.7	.4
2,000 acres or more	57.1	-	56.8	-
Total cropland	-5.5	1.2	-11.6	1.1
Harvested cropland	-1.4	1.0	-2.4	1.0
Irrigated land	-10.0	1.4	-5.4	1.5
Irrigated land	8.0	1.5	7.7	1.5
Market value of agricultural products sold	18.3	.9	18.5	.9
Average per farm	25.8	1.8	36.2	2.0
Crops, including nursery and greenhouse crops	33.3	1.2	33.6	1.2
Livestock, poultry, and their products	5.5	.6	5.7	.6
Farms by value of sales:				
Less than \$2,500	72.7	2.2	(X)	(X)
\$2,500 to \$4,999	-3.7	1.5	(X)	(X)
\$5,000 to \$9,999	-16.4	1.2	(X)	(X)
\$10,000 to \$24,999	-24.0	1.0	-24.0	1.0
\$25,000 to \$49,999	-22.9	1.0	-22.9	1.0
\$50,000 to \$99,999	-21.8	1.3	-21.8	1.2
\$100,000 to \$249,999	-12.7	1.2	-12.7	1.2
\$250,000 to \$499,999	25.6	.5	25.6	.5
\$500,000 or more	72.0	-	72.0	-
Total farm production expenses ¹	8.5	1.0	8.5	1.0
Average per farm	15.4	1.7	24.4	1.9
Net cash return from agricultural sales for the farm unit (see text) ¹	-6.0	1.2	-12.8	1.1
Average per farm	35.4	1.7	35.9	1.7
Average per farm	44.0	2.6	55.8	2.8
Operators by principal occupation:				
Farming	-15.9	1.0	-17.7	1.0
Other	16.4	1.6	4.7	1.6
Operators by days worked off farm:				
Any	6.4	1.4	-1.0	1.4
200 days or more	12.1	1.5	3.7	1.6
Livestock and poultry:				
Cattle and calves inventory	-11.9	1.1	-15.6	1.1
Beef cows	-8.0	.8	-8.8	.8
Milk cows	-8.5	1.2	-11.7	1.2
Milk cows	-3.4	1.2	-4.5	1.2
Milk cows	-28.4	1.1	-28.7	1.1
Milk cows	-14.2	1.0	-14.2	1.0
Cattle and calves sold	-12.0	1.1	-15.5	1.1
Hogs and pigs inventory	-10.6	.6	-11.2	.6
Hogs and pigs sold	-45.8	.6	-44.5	.6
Hogs and pigs sold	3.5	.7	4.1	.7
Hogs and pigs sold	-46.1	.6	-44.6	.6
Sheep and lambs inventory	2.5	.7	3.0	.7
Sheep and lambs inventory	-34.5	.9	-37.9	.9
Sheep and lambs inventory	-34.5	.8	-33.6	.9
Layers and pullets 13 weeks old and older inventory (see text)	-28.1	1.1	-34.2	1.2
Layers and pullets 13 weeks old and older inventory (see text)	98.1	.5	98.5	.5
Broilers and other meat-type chickens sold	-20.4	1.7	-26.1	1.8
Broilers and other meat-type chickens sold	-25.5	.8	-25.6	.8
Selected crops harvested:				
Corn for grain or seed	-15.0	1.1	-13.4	1.1
Corn for grain or seed	-7.3	.9	-7.0	.9
Corn for grain or seed	-12.4	.8	-12.1	.8
Corn for silage or green chop	-12.2	1.1	-12.2	1.1
Wheat for grain	-7.4	.9	-7.3	.9
Wheat for grain	-2.5	.9	-2.5	.9
Wheat for grain	-25.9	1.4	-26.5	1.4
Wheat for grain	-26.4	1.7	-27.4	1.7
Wheat for grain	-23.5	1.8	-23.9	1.8
Oats for grain	-39.4	.8	-39.8	.8
Oats for grain	-42.4	.7	-42.6	.7
Oats for grain	-38.5	.7	-38.6	.7
Soybeans for beans	-5.9	1.2	-5.6	1.2
Soybeans for beans	20.6	1.1	20.9	1.1
Soybeans for beans	26.4	1.2	26.6	1.2
Hay—alfalfa, other tame, small grain, wild, grass silage, green chop, etc. (see text)	-15.8	1.1	-18.9	1.1
Hay—alfalfa, other tame, small grain, wild, grass silage, green chop, etc. (see text)	-10.6	1.1	-11.7	1.1
Hay—alfalfa, other tame, small grain, wild, grass silage, green chop, etc. (see text)	-14.5	1.0	-15.3	1.0

¹Data are based on a sample of farms.

Table F. Reliability Estimates for the State and County Totals: 1997—Con.

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

Geographic area	Farms		Land in farms		Average size of farm		Average market value of land and buildings per farm ¹		Estimated market value of all machinery and equipment ¹	
	Total (number)	Relative standard error of estimate (percent)	Total (acres)	Relative standard error of estimate (percent)	Total (acres)	Relative standard error of estimate (percent)	Value (dollars)	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)
Story	946	.5	340 885	.8	360	1.0	801 353	5.2	92 918	5.5
Tama	1 152	.6	396 220	.8	344	1.0	608 765	3.5	88 223	5.8
Taylor	746	.9	291 497	1.1	391	1.4	354 123	5.5	29 838	10.8
Union	671	.8	225 134	1.4	336	1.6	311 057	8.7	31 682	16.6
Van Buren	807	.8	257 227	1.3	319	1.5	240 446	6.2	39 861	9.4
Wapello	781	.7	208 213	1.1	267	1.3	354 530	8.3	49 304	9.6
Warren	1 214	.6	299 835	1.1	247	1.2	352 257	5.9	59 963	8.6
Washington	1 061	.6	317 699	.9	299	1.1	545 505	5.3	87 757	6.1
Wayne	729	.5	286 412	.9	393	1.0	252 553	5.0	34 944	10.6
Webster	937	.5	412 641	.6	440	.8	1 069 561	3.1	105 212	4.5
Winnebago	607	.4	241 600	.7	398	.9	717 501	4.2	66 257	6.2
Winneshiek	1 450	.7	360 778	.9	249	1.1	321 413	3.6	88 833	4.3
Woodbury	1 306	.8	497 241	.9	381	1.2	506 937	3.4	102 151	5.4
Worth	608	.5	227 898	.9	375	1.0	639 598	4.5	60 470	5.9
Wright	717	.4	349 675	.6	488	.7	1 055 635	3.5	97 737	5.9
	Average market value of all machinery and equipment per farm ¹		Market value of agricultural products sold		Average market value of agricultural products sold per farm		Farm production expenses ¹			
							Total farm production expenses			
							Farms		Value	
							Number	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)
Iowa	80 651	1.0	11 947 894	.3	131 596	.7	90 786	.6	8 405 838	.4
Adair	67 728	3.9	82 545	.8	104 223	1.0	791	.7	59 677	2.9
Adams	67 912	11.1	49 642	1.0	86 635	1.2	573	1.0	35 262	5.0
Allamakee	68 782	5.1	80 826	.9	84 370	1.1	959	.7	55 806	4.2
Appanoose	44 744	16.0	28 757	1.5	36 082	1.7	797	.9	21 014	7.1
Audubon	87 530	8.3	114 110	.6	175 824	.8	649	.8	86 803	2.0
Benton	90 602	5.9	157 977	.6	130 559	.8	1 209	.6	113 156	1.9
Black Hawk	82 466	6.0	127 892	.6	127 636	.8	1 001	.7	89 869	1.9
Boone	96 969	7.1	119 995	.6	139 045	.7	863	.6	78 305	2.3
Bremer	72 871	5.9	101 575	.7	103 437	.9	981	.7	68 032	2.9
Buchanan	76 717	5.1	137 169	.6	120 747	.8	1 135	.6	99 416	2.1
Buena Vista	99 272	5.1	210 089	.3	242 317	.6	866	.7	139 583	1.3
Butler	68 158	5.4	131 473	.5	121 174	.7	1 085	.6	92 343	2.3
Calhoun	116 477	4.8	140 244	.7	176 853	.9	792	.8	91 209	2.4
Carroll	103 551	5.5	221 458	.4	200 960	.7	1 102	.6	163 900	1.5
Cass	74 063	5.5	94 100	.7	117 040	.9	804	.7	69 525	2.3
Cedar	96 939	5.0	128 566	.7	133 229	.8	964	.7	90 267	2.3
Cerro Gordo	96 361	4.7	120 620	.6	146 739	.9	822	.8	85 779	2.1
Cherokee	90 490	6.0	145 854	.5	163 881	.7	889	.7	102 162	2.3
Chickasaw	82 369	7.6	122 131	.6	131 891	.9	927	.7	88 106	1.9
Clarke	43 340	8.0	38 534	1.1	56 835	1.3	678	.9	34 199	2.8
Clay	110 500	6.2	120 624	.6	180 574	.7	668	.7	78 303	2.8
Clayton	68 600	4.5	171 442	.6	104 665	.8	1 639	.6	123 749	1.8
Clinton	71 626	6.1	148 387	.7	117 025	.9	1 266	.6	112 528	2.1
Crawford	88 611	7.1	143 011	.7	129 188	1.0	1 108	.9	106 846	1.9
Dallas	84 900	5.4	117 622	.5	128 128	.7	917	.6	71 377	2.2
Davis	38 669	6.1	55 850	1.0	63 178	1.2	883	.8	44 889	2.9
Decatur	42 924	8.5	54 349	.7	74 450	.8	732	.6	39 938	3.3
Delaware	91 087	4.4	195 918	.5	153 300	.7	1 279	.7	137 908	1.9
Des Moines	70 353	8.7	69 769	.9	107 337	1.0	652	.7	49 248	5.2
Dickinson	80 621	7.3	72 854	.7	142 294	.9	512	.8	55 804	2.0
Dubuque	69 318	5.5	171 651	.7	108 709	1.0	1 578	.8	127 281	2.1
Emmet	107 602	7.9	91 349	.6	176 009	.8	519	.8	58 017	2.6
Fayette	86 084	5.2	181 137	.5	139 874	.8	1 295	.7	126 410	1.7
Floyd	91 489	5.4	113 534	.6	133 569	.8	852	.6	84 177	2.3
Franklin	105 337	7.7	180 192	.4	210 504	.7	859	.7	139 062	1.6
Fremont	93 152	6.4	88 185	.7	155 256	.9	567	.8	55 616	2.5
Greene	93 552	6.7	122 235	.7	160 203	.9	763	.8	75 837	2.4
Grundy	123 332	5.6	149 118	.4	197 769	.6	753	.7	103 246	1.6
Guthrie	66 553	6.8	95 779	.7	113 080	1.0	846	.8	71 093	2.4
Hamilton	121 174	5.2	227 219	.2	287 619	.4	789	.6	158 228	.9
Hancock	106 826	5.4	140 661	.5	165 679	.7	849	.6	98 495	1.8
Hardin	95 260	5.2	201 877	.4	235 563	.7	856	.7	150 236	1.2
Harrison	101 590	7.0	112 981	.8	128 974	1.1	876	.9	73 412	2.5
Henry	75 892	9.2	77 086	.8	92 319	1.0	836	.7	55 921	4.0
Howard	73 737	6.8	95 130	.7	110 359	.9	863	.7	67 827	3.1
Humboldt	137 366	6.6	100 520	.7	167 533	.9	600	.8	63 217	3.0
Ida	88 517	6.8	95 685	.9	150 212	1.3	636	1.1	64 029	3.0
Iowa	72 816	6.1	104 865	.7	107 443	.9	976	.7	71 864	2.2
Jackson	56 579	6.0	96 659	.8	75 515	1.0	1 280	.7	75 113	2.6
Jasper	72 740	4.4	153 843	.7	127 776	.9	1 204	.8	97 478	2.3
Jefferson	50 541	7.3	57 520	1.2	75 190	1.3	764	.8	36 332	4.5
Johnson	55 575	4.6	100 391	.9	79 613	1.0	1 261	.7	72 898	2.3
Jones	76 208	7.3	136 937	.6	133 077	.7	1 028	.6	100 511	2.2
Keokuk	74 786	5.7	96 734	.9	99 932	1.1	969	.9	71 065	3.2

See footnotes at end of table.

Table F. Reliability Estimates for the State and County Totals: 1997—Con.

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

Geographic area	Average market value of all machinery and equipment per farm ¹		Market value of agricultural products sold		Average market value of agricultural products sold per farm		Farm production expenses ¹			
	Value (dollars)	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)	Value (dollars)	Relative standard error of estimate (percent)	Total farm production expenses			
							Farms		Value	
							Number	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)
Kossuth	109 491	5.1	242 775	.5	172 917	.7	1 405	.7	162 320	1.6
Lee	71 284	8.1	77 358	1.0	89 847	1.2	863	.7	56 337	3.4
Linn	60 099	5.7	113 460	.7	76 662	.9	1 480	.7	78 785	2.4
Louisa	86 449	6.6	81 296	.7	137 093	.9	592	.8	53 833	3.3
Lucas	43 351	9.1	29 371	1.6	41 602	1.7	706	.9	22 214	4.7
Lyon	78 493	4.9	198 795	.6	173 016	1.1	1 149	.8	145 807	1.7
Madison	54 615	6.8	73 550	.8	74 594	1.1	987	.8	58 862	2.6
Mahaska	73 575	5.0	156 722	.5	153 348	.8	1 022	.7	106 900	2.0
Marion	55 288	5.6	73 114	.9	75 298	1.1	971	.8	49 036	2.7
Marshall	81 835	5.5	117 640	.7	128 992	.9	914	.7	80 870	2.1
Mills	83 621	7.9	59 190	1.1	119 334	1.3	495	.8	34 423	4.0
Mitchell	84 112	8.4	160 571	.5	194 868	.8	827	.7	122 220	2.1
Monona	88 968	6.0	100 554	.7	144 267	1.0	698	.8	69 682	2.6
Monroe	43 397	8.5	39 323	1.4	56 907	1.7	691	1.0	29 882	3.4
Montgomery	93 498	7.8	82 602	.6	143 157	.8	576	.8	53 462	2.9
Muscatine	86 125	11.6	73 835	.9	94 298	1.1	782	.9	55 741	2.5
O'Brien	109 176	6.3	180 036	.5	184 274	.8	977	.7	123 842	1.8
Osceola	101 614	6.4	139 942	.5	215 627	.9	649	.8	95 705	1.5
Page	68 675	6.6	79 419	.8	93 986	1.0	844	.7	50 123	3.4
Palo Alto	91 209	6.5	155 767	.5	197 925	.7	787	.7	100 333	1.7
Plymouth	78 988	4.6	238 391	.5	159 994	.8	1 489	.7	173 372	1.5
Pocahontas	127 583	4.9	138 598	.7	178 147	.9	777	.8	79 515	2.2
Polk	74 442	7.8	71 221	.9	89 026	1.1	802	.8	42 541	3.5
Pottawattamie	89 350	5.5	190 001	.6	143 397	.9	1 326	.7	130 063	1.9
Poweshiek	73 440	5.6	107 375	.7	114 963	1.0	933	.8	72 216	2.7
Ringgold	55 249	6.4	48 665	.8	72 526	1.1	671	1.0	40 433	1.9
Sac	101 894	6.9	190 949	.4	234 870	.7	812	.8	133 924	1.5
Scott	102 191	5.8	95 104	.8	119 029	1.0	798	.9	72 368	2.6
Shelby	79 719	6.3	132 843	.7	144 237	1.0	920	.8	91 309	2.8
Sioux	93 390	4.3	507 960	.3	289 932	.6	1 751	.6	378 426	.7
Story	98 118	5.6	130 832	.7	138 300	.9	947	.7	84 555	2.4
Tama	76 516	5.9	127 816	.8	110 952	1.0	1 153	.7	91 847	2.4
Taylor	40 051	10.8	62 200	.8	83 378	1.2	745	1.1	43 481	3.8
Union	47 146	16.7	39 032	1.5	58 169	1.7	672	.9	28 838	3.9
Van Buren	49 516	9.4	43 027	1.5	53 318	1.7	805	1.0	31 529	3.5
Wapello	63 291	9.7	44 604	1.2	57 112	1.3	779	.8	31 882	6.0
Warren	49 352	8.6	59 615	1.1	49 106	1.2	1 215	.7	40 526	2.7
Washington	82 634	6.2	174 186	.5	164 171	.8	1 062	.9	120 050	2.1
Wayne	47 934	10.7	36 564	1.1	50 157	1.2	729	.7	26 130	4.3
Webster	112 406	4.6	166 258	.5	177 436	.7	936	.7	105 595	1.6
Winneshiege	109 336	6.2	78 356	.7	129 088	.8	606	.7	53 161	3.3
Winneshiek	61 264	4.4	131 310	.8	90 559	1.0	1 450	.8	94 934	2.0
Woodbury	78 638	5.5	151 324	.7	115 869	1.1	1 308	.8	115 872	1.9
Worth	99 621	6.0	76 626	.8	126 030	.9	607	.7	53 185	2.9
Wright	136 504	6.0	175 045	.3	244 136	.5	716	.6	137 341	1.4

Farm production expenses¹—Con.

Geographic area	Livestock and poultry purchased				Feed for livestock and poultry				Seeds, bulbs, plants, and trees			
	Farms		Value		Farms		Value		Farms		Value	
	Number	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)
Iowa	30 572	1.2	1 260 448	.6	46 733	.9	1 585 107	.5	68 732	.7	488 961	.7
Adair	323	10.4	8 225	10.1	485	6.6	11 584	7.4	617	3.6	3 354	5.5
Adams	179	15.4	5 115	11.6	334	7.4	5 101	8.8	378	5.8	2 401	8.5
Allamakee	408	8.9	4 165	14.5	636	4.1	12 962	8.0	670	4.4	2 474	6.3
Appanoose	203	13.5	2 164	18.1	453	7.2	2 619	36.1	412	7.2	1 256	10.1
Audubon	242	10.8	17 248	4.4	399	7.0	16 411	2.6	536	3.0	5 081	5.3
Benton	379	10.6	14 331	4.3	592	7.2	13 392	5.1	918	2.2	7 491	4.8
Black Hawk	308	9.2	9 397	8.5	441	7.3	15 915	3.7	793	2.8	5 567	4.2
Boone	236	12.7	8 866	5.1	399	7.9	9 959	3.9	650	3.1	6 370	7.7
Bremer	378	9.2	7 207	11.0	540	6.6	8 964	7.5	738	3.5	4 433	5.8
Buchanan	495	6.8	11 338	6.1	575	6.0	16 382	4.4	908	3.2	6 234	4.7
Buena Vista	323	9.7	30 501	2.3	445	7.9	39 360	2.3	711	2.9	6 219	4.4
Butler	437	7.8	13 930	8.1	583	5.6	13 830	4.2	835	2.5	6 156	3.9
Calhoun	207	14.0	15 761	2.9	259	11.2	13 310	3.3	724	2.6	6 065	5.3
Carroll	472	7.6	47 511	2.0	626	5.6	36 116	2.0	924	2.1	6 823	4.9
Cass	259	11.3	13 794	4.4	451	7.1	8 163	3.2	661	3.7	4 293	5.3
Cedar	370	9.4	11 172	7.7	466	7.4	11 507	4.6	731	2.5	6 331	4.3
Cerro Gordo	198	12.8	6 982	6.3	292	9.8	11 438	5.9	648	2.0	6 580	3.6
Cherokee	366	8.8	19 399	5.4	541	5.7	18 179	3.6	765	2.1	5 348	3.8
Chickasaw	320	8.5	14 696	5.6	481	5.6	14 892	4.7	707	3.2	5 159	5.0

See footnotes at end of table.

Table F. Reliability Estimates for the State and County Totals: 1997—Con.

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

Geographic area	Farm production expenses ¹ —Con.											
	Commercial fertilizer				Agricultural chemicals				Petroleum products			
	Farms		Value		Farms		Value		Farms		Value	
	Number	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)
Ringgold	367	7.1	2 299	9.5	364	8.0	1 766	12.5	572	3.1	2 081	5.1
Sac	672	3.8	8 201	5.1	654	4.6	6 606	5.0	771	2.4	3 991	4.2
Scott	681	2.8	6 666	5.8	669	3.4	5 446	4.3	733	2.7	3 596	4.5
Shelby	805	2.2	8 480	4.7	812	2.6	7 214	5.4	868	2.1	3 877	7.9
Sioux	1 299	3.2	11 251	3.4	1 351	3.0	9 602	3.8	1 715	1.0	8 269	2.5
Story	762	3.2	9 253	5.8	709	4.4	6 485	7.5	904	1.7	3 661	5.8
Tama	782	3.8	9 476	5.7	801	4.2	7 348	6.7	1 043	2.5	4 263	5.8
Taylor	413	5.2	2 622	8.2	444	6.5	2 468	10.5	659	3.0	2 030	5.8
Union	399	6.2	2 227	10.1	458	7.0	2 280	10.3	560	4.6	1 341	7.0
Van Buren	466	6.3	2 501	13.1	451	6.1	2 275	8.9	714	3.1	1 457	6.1
Wapello	445	6.1	3 185	12.6	414	6.4	2 493	20.8	724	2.8	1 828	9.9
Warren	694	4.7	2 702	8.4	687	4.7	3 498	8.0	1 094	2.0	2 580	5.7
Washington	710	4.5	6 864	8.1	729	4.1	6 162	8.9	976	2.6	4 688	5.8
Wayne	499	6.3	2 653	7.2	392	7.9	1 790	10.9	705	1.6	1 576	5.7
Webster	789	2.6	10 375	3.6	730	3.6	8 279	5.2	858	2.1	4 321	4.1
Winnebago	460	3.8	6 727	5.5	406	5.2	4 788	8.4	561	2.4	3 127	3.9
Winneshiek	982	3.3	7 399	6.3	937	3.9	4 594	5.4	1 371	1.7	5 328	3.4
Woodbury	890	3.5	11 072	4.9	900	4.4	8 069	4.4	1 164	2.6	4 667	4.2
Worth	440	4.8	5 632	6.4	435	4.7	4 377	6.1	556	2.8	3 033	5.0
Wright	569	3.8	8 607	6.7	575	3.4	6 813	5.8	666	2.3	4 105	3.9
Geographic area	Farm production expenses ¹ —Con.											
	Electricity				Hired farm labor				Contract labor			
	Farms		Value		Farms		Value		Farms		Value	
	Number	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)
Iowa	73 232	.7	127 679	.8	33 016	1.1	316 779	.9	6 152	2.8	24 905	2.7
Adair	702	2.9	1 067	6.3	266	12.4	2 375	2.3	34	44.6	74	39.6
Adams	417	6.4	670	8.3	198	14.6	1 540	5.9	28	37.6	82	13.0
Allamakee	775	3.4	1 544	6.4	323	11.5	2 470	21.1	53	35.1	85	41.8
Appanoose	575	5.4	421	11.9	212	15.3	488	7.5	60	29.2	132	28.0
Audubon	582	2.2	1 398	6.4	289	10.0	2 496	3.4	51	32.0	134	26.4
Benton	983	2.9	1 761	9.6	476	8.4	4 100	12.1	51	32.7	183	12.3
Black Hawk	827	2.9	1 087	5.0	340	9.3	4 672	6.3	71	23.5	274	28.8
Boone	720	3.7	1 109	6.3	356	9.2	4 595	9.6	71	23.8	377	25.6
Bremer	862	2.5	1 242	5.3	413	9.1	2 397	10.9	36	33.8	117	17.5
Buchanan	899	3.5	1 519	4.8	549	6.2	4 442	6.1	39	27.7	81	16.9
Buena Vista	736	3.6	1 526	3.3	418	7.6	4 647	3.3	97	22.0	455	17.2
Butler	822	3.1	1 402	5.4	405	8.0	2 694	6.4	78	25.3	242	25.6
Calhoun	666	4.1	1 179	5.4	375	9.1	2 414	5.3	31	34.8	52	21.5
Carroll	982	2.4	1 978	4.0	520	6.6	3 810	7.4	128	19.6	324	18.0
Cass	670	3.8	936	6.2	243	12.0	2 029	10.1	47	31.2	131	24.0
Cedar	809	3.0	1 494	4.5	360	8.8	3 714	10.9	71	23.6	579	21.4
Cerro Gordo	680	3.5	1 296	6.2	326	9.1	3 980	11.2	45	26.1	310	2.9
Cherokee	786	2.8	1 384	5.4	419	6.9	3 379	7.7	48	28.8	210	7.3
Chickasaw	786	3.7	1 496	3.9	384	8.8	2 915	8.6	62	26.3	382	7.0
Clarke	517	5.0	574	6.3	257	11.2	1 552	5.7	63	29.3	159	16.4
Clay	609	2.7	1 238	6.7	306	10.6	3 252	5.9	38	41.1	360	24.6
Clayton	1 385	2.2	3 101	3.8	624	6.7	5 379	10.1	112	22.7	310	25.9
Clinton	957	3.7	1 434	5.4	521	7.9	2 853	14.4	68	28.9	242	21.8
Crawford	904	3.6	1 615	6.1	383	9.2	3 333	7.5	55	26.7	148	36.9
Dallas	611	4.8	880	5.7	319	9.9	6 423	2.6	59	29.8	1 841	11.6
Davis	630	4.4	776	3.4	276	11.1	1 933	6.3	73	25.0	148	27.0
Decatur	483	5.7	524	7.5	166	15.2	1 237	8.2	78	24.0	131	23.2
Delaware	1 131	2.2	3 336	10.3	545	7.4	3 265	8.0	79	22.8	260	19.6
Des Moines	486	5.5	730	10.3	194	13.5	1 106	13.3	37	41.5	101	32.1
Dickinson	412	3.9	726	7.9	182	12.5	895	5.7	22	39.9	52	9.3
Dubuque	1 367	2.3	2 854	3.7	558	7.9	3 961	7.0	73	27.8	123	33.7
Emmet	450	3.7	822	4.4	189	10.8	1 809	3.0	41	33.1	79	41.3
Fayette	1 087	2.4	2 524	3.6	597	6.7	5 608	6.7	126	19.9	310	23.6
Floyd	712	3.7	1 380	4.6	404	8.5	5 438	5.3	63	22.5	332	13.7
Franklin	754	3.4	1 573	5.5	393	10.0	3 601	12.4	67	28.7	177	20.2
Fremont	448	4.6	704	7.3	268	10.6	3 601	6.0	55	27.3	140	30.6
Greene	598	4.4	940	6.1	314	10.4	2 666	7.4	59	28.8	219	22.4
Grundy	638	3.4	1 154	3.5	307	8.0	4 105	5.5	70	21.7	447	11.0
Guthrie	642	4.6	1 293	5.7	264	10.8	3 649	3.1	56	27.4	101	15.0
Hamilton	616	3.6	1 943	3.7	356	7.8	9 304	2.2	49	23.1	252	5.7
Hancock	758	2.8	1 539	3.9	409	7.9	3 523	5.8	60	28.4	140	25.1
Hardin	684	4.0	1 708	3.4	371	8.7	6 084	2.2	59	26.0	718	4.0
Harrison	760	3.4	1 219	5.2	254	12.0	3 254	7.2	23	26.7	118	2.6
Henry	611	4.7	687	6.8	215	14.8	1 591	4.5	90	28.3	303	10.3
Howard	735	3.4	1 132	4.1	346	10.0	2 649	7.9	35	37.0	105	10.9
Humboldt	555	2.6	734	7.0	288	10.1	2 423	16.5	55	26.8	148	26.7
Ida	503	4.8	1 092	6.1	244	11.3	2 021	17.1	32	40.7	252	3.5
Iowa	784	3.1	1 223	3.9	339	9.3	1 949	12.8	125	19.6	269	27.3
Jackson	953	3.5	1 479	4.6	353	10.1	1 507	10.9	89	25.4	82	24.3

See footnotes at end of table.

Table F. Reliability Estimates for the State and County Totals: 1997—Con.

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

Geographic area	Farm production expenses ¹ —Con.											
	Electricity				Hired farm labor				Contract labor			
	Farms		Value		Farms		Value		Farms		Value	
	Number	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)
Jasper	940	3.5	1 351	4.2	314	10.4	4 050	8.2	33	32.8	153	47.3
Jefferson	600	3.7	626	9.2	210	14.2	908	10.6	60	31.1	235	25.4
Johnson	957	3.4	1 245	5.8	434	8.6	2 073	9.4	101	21.6	339	20.9
Jones	875	2.3	1 604	3.8	309	8.6	3 428	7.0	73	23.6	368	30.6
Keokuk	777	3.4	1 317	5.4	225	14.0	2 354	5.6	45	39.4	97	29.0
Kossuth	1 238	2.1	2 479	5.5	677	6.0	4 413	6.5	110	20.7	692	15.0
Lee	676	3.5	1 034	6.7	280	10.6	2 677	9.1	53	37.6	217	36.5
Linn	1 079	3.8	1 380	7.2	385	9.7	3 000	8.3	115	20.9	172	19.3
Louisa	411	5.3	835	10.7	181	13.9	2 504	7.2	38	40.9	35	47.2
Lucas	483	5.5	392	5.1	146	16.8	420	12.5	49	31.9	122	23.2
Lyon	1 002	2.7	2 066	8.0	476	7.6	3 755	5.2	27	43.0	157	5.9
Madison	769	4.2	1 151	5.3	292	12.8	2 893	2.0	58	29.8	140	16.1
Mahaska	826	3.1	2 143	3.7	336	10.6	4 059	6.0	38	39.0	212	7.2
Marion	635	5.4	769	6.7	257	11.7	1 795	11.0	72	27.9	103	29.0
Marshall	754	3.5	1 074	4.8	324	9.7	3 747	4.2	54	29.5	224	9.0
Mills	406	4.2	631	11.5	160	16.7	720	17.9	19	44.2	46	39.2
Mitchell	615	5.0	1 590	3.9	331	10.0	5 783	7.0	74	25.6	619	29.5
Monona	600	3.7	945	7.4	245	12.3	2 243	10.1	73	22.7	236	18.3
Monroe	441	5.8	475	8.0	180	14.1	997	7.2	85	21.4	359	47.7
Montgomery	432	4.7	728	5.6	200	13.7	2 830	6.1	18	55.0	180	70.9
Muscatine	594	4.9	848	7.3	242	12.1	2 395	9.3	34	38.1	78	7.2
O'Brien	888	2.5	1 540	4.8	459	7.4	3 118	8.5	82	25.6	346	14.1
Osceola	573	2.8	1 051	3.2	178	13.1	3 141	7.9	61	26.5	372	5.2
Page	592	3.7	903	10.1	272	10.9	2 642	13.3	40	29.4	174	26.0
Palo Alto	713	2.7	1 453	5.1	358	8.4	4 150	4.6	29	30.8	304	4.7
Plymouth	1 273	2.6	2 315	4.1	546	7.6	4 772	5.4	138	19.1	630	22.1
Pocahontas	704	3.0	1 029	5.1	370	8.7	2 028	4.4	69	24.0	371	9.8
Polk	617	3.9	608	5.9	255	10.1	2 767	4.8	47	28.8	129	19.1
Pottawattamie	1 091	3.5	1 945	9.4	468	9.2	4 257	7.8	59	27.4	87	15.5
Poweshiek	702	4.0	1 194	4.3	290	11.6	3 944	4.6	48	28.0	748	4.4
Ringgold	460	4.9	761	3.8	127	16.2	2 053	1.1	105	21.5	102	32.1
Sac	701	3.8	1 581	5.5	466	7.2	6 157	4.2	22	36.7	195	43.6
Scott	667	3.7	1 066	5.5	203	14.2	2 525	12.6	68	31.9	161	30.9
Shelby	827	2.7	1 682	5.9	357	10.3	2 193	12.5	45	26.6	114	9.6
Sioux	1 553	1.9	4 043	2.4	893	4.6	11 940	4.5	193	15.7	785	20.2
Story	727	3.9	1 231	4.8	339	9.5	4 249	5.9	57	23.3	168	20.3
Tama	950	3.2	1 344	4.7	297	10.3	3 548	15.9	71	29.2	189	39.5
Taylor	562	4.7	624	5.5	199	13.8	1 685	18.6	56	30.9	237	6.4
Union	417	6.7	417	8.0	155	17.9	762	8.2	46	35.2	83	28.3
Van Buren	592	4.7	529	6.0	231	13.7	1 884	45.5	32	41.2	39	49.5
Wapello	559	5.4	493	13.3	171	15.0	1 235	20.3	52	28.7	78	14.6
Warren	865	4.6	932	4.8	348	10.8	1 555	2.9	110	20.4	190	36.8
Washington	912	2.8	1 608	4.3	371	9.8	4 919	6.8	43	33.1	618	29.1
Wayne	509	5.6	453	7.7	195	15.8	679	21.1	51	30.6	124	33.2
Webster	779	3.3	1 193	5.8	312	9.8	4 673	7.0	46	29.0	477	33.1
Winnebago	515	3.5	1 099	16.5	249	9.8	1 345	9.5	37	28.8	193	9.4
Winneshiek	1 145	3.1	2 417	5.0	570	7.0	3 477	7.2	105	21.7	309	31.8
Woodbury	1 092	3.2	1 697	5.6	517	7.4	4 092	7.8	104	19.1	325	18.8
Worth	492	4.2	803	6.7	208	11.5	1 335	12.9	54	34.3	127	42.1
Wright	586	3.8	1 547	4.1	294	10.1	9 483	3.2	41	36.7	154	5.7

Geographic area	Farm production expenses ¹ —Con.											
	Repair and maintenance				Customwork, machine hire, and rental of machinery and equipment				Interest			
	Farms		Value		Farms		Value		Farms		Value	
	Number	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Total (\$1,000)	Relative standard error of estimate (percent)
Iowa	78 128	.7	504 525	.8	43 788	1.0	168 101	1.6	55 257	.8	600 284	.9
Adair	667	3.5	3 831	8.2	388	9.5	1 151	14.8	464	7.2	4 468	8.3
Adams	456	4.1	3 115	11.4	218	13.7	688	16.9	286	11.2	2 500	12.8
Allamakee	870	2.5	5 209	8.3	488	7.6	1 569	10.8	605	5.8	5 063	11.5
Appanoose	632	4.4	2 854	18.0	260	12.3	310	14.9	344	9.9	1 739	14.7
Audubon	570	3.4	4 675	5.1	356	7.8	1 345	17.0	449	6.0	5 924	8.1
Benton	1 014	3.2	7 252	4.6	499	8.0	3 075	18.7	768	4.9	8 910	6.7
Black Hawk	908	2.0	5 474	6.0	508	6.6	1 721	11.2	610	5.3	6 053	7.5
Boone	799	2.3	5 093	6.1	377	9.0	1 716	16.3	480	6.6	4 286	7.5
Bremer	900	1.9	4 795	6.1	561	6.5	1 412	13.0	636	5.1	5 611	6.0
Buchanan	1 021	2.1	6 247	4.2	567	6.6	1 899	11.8	724	5.1	7 381	6.7
Buena Vista	793	2.7	7 149	7.5	488	6.7	1 528	10.7	561	5.9	6 972	5.7
Butler	892	2.7	4 770	5.5	485	7.6	1 482	10.2	671	4.9	6 749	7.3
Calhoun	677	3.9	5 534	8.8	418	8.7	2 523	15.7	580	5.4	6 906	7.6
Carroll	998	2.6	8 050	3.9	579	6.5	1 834	8.3	788	4.3	9 814	7.4
Cass	723	3.0	4 313	6.3	457	7.8	1 796	21.2	527	6.1	5 449	6.7
Cedar	767	3.5	5 603	6.3	466	7.4	2 400	20.4	576	5.5	6 840	7.5
Cerro Gordo	709	2.9	4 932	4.8	312	9.5	1 980	17.2	503	5.8	4 903	7.3
Cherokee	804	2.4	6 003	5.9	400	9.1	1 968	13.0	610	5.3	7 220	6.4
Chickasaw	792	3.0	5 032	6.0	451	7.5	1 762	9.5	576	6.0	5 914	5.4

See footnotes at end of table.

Table F. Reliability Estimates for the State and County Totals: 1997—Con.

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

Geographic area	Net cash return from agricultural sales for the farm unit (see text) ¹				Total cropland				Harvested cropland			
	Farms		Value		Farms		Acres		Farms		Acres	
	Number	Relative standard error of estimate (percent)	Total (\$1,000)	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)	Number	Relative standard error of estimate (percent)
Jasper	1 204	.8	46 348	4.6	1 108	.7	365 523	.8	996	.8	318 965	.9
Jefferson	764	.8	14 273	10.5	706	.8	178 100	1.2	565	1.0	139 078	1.4
Johnson	1 261	.7	23 717	8.5	1 183	.6	249 275	.9	1 009	.7	202 934	1.0
Jones	1 028	.6	27 668	7.2	953	.5	267 164	.8	841	.6	233 100	.8
Keokuk	969	.9	22 957	10.7	883	.8	263 316	1.1	715	.9	193 893	1.1
Kossuth	1 405	.7	68 295	4.0	1 325	.5	547 880	.6	1 278	.6	528 869	.6
Lee	863	.7	19 440	10.6	773	.7	189 658	1.2	672	.8	156 755	1.2
Linn	1 480	.7	29 047	6.7	1 342	.6	291 876	.8	1 167	.6	257 566	.8
Louisa	592	.8	23 103	5.8	544	.7	168 229	1.1	474	.8	146 959	1.1
Lucas	706	.9	5 047	16.6	634	.8	156 678	1.5	513	1.0	76 807	1.7
Lyon	1 149	.8	50 676	4.4	1 014	.9	315 326	1.0	961	1.0	293 762	1.0
Madison	987	.8	18 140	11.6	912	.8	228 786	1.2	793	.9	163 603	1.2
Mahaska	1 022	.7	39 603	4.6	933	.7	273 633	.8	807	.8	230 111	.9
Marion	971	.8	19 143	7.0	887	.7	218 837	1.0	733	.8	171 369	1.1
Marshall	914	.7	28 952	5.6	831	.6	289 823	.8	736	.7	260 604	.9
Mills	495	.8	20 357	11.3	470	.8	204 717	1.1	430	.9	181 401	1.2
Mitchell	827	.7	30 966	9.2	737	.7	242 726	.8	700	.7	230 307	.8
Monona	698	.8	26 195	7.8	659	.7	316 827	.8	589	.8	276 942	.9
Monroe	691	1.0	6 944	21.2	644	1.0	150 876	1.7	578	1.1	83 216	1.8
Montgomery	576	.8	26 951	7.8	535	.6	209 389	.9	471	.8	171 618	.9
Muscatine	782	.9	13 171	13.8	715	.7	189 869	1.1	625	.8	169 909	1.1
O'Brien	977	.7	48 210	6.1	891	.7	330 094	.8	879	.7	314 232	.8
Osceola	649	.8	38 731	5.6	590	.8	222 296	1.0	573	.8	214 077	1.0
Page	844	.7	23 845	6.3	778	.6	259 981	.9	674	.7	204 034	1.0
Palo Alto	787	.7	48 756	4.2	732	.6	305 714	.8	698	.7	289 010	.8
Plymouth	1 489	.7	51 136	4.7	1 348	.7	456 116	.7	1 235	.7	410 249	.7
Pocahontas	777	.8	48 444	4.6	753	.7	338 984	.8	738	.7	330 852	.8
Polk	802	.8	24 745	6.8	725	.7	200 801	1.0	643	.8	184 859	1.0
Pottawattamie	1 326	.7	49 418	5.7	1 222	.7	482 787	.8	1 129	.7	436 604	.8
Poweshiek	933	.8	32 851	6.6	861	.7	292 572	.9	709	.8	230 161	.9
Ringgold	671	1.0	6 155	16.9	628	.8	210 245	1.3	505	1.0	114 558	1.3
Sac	812	.8	46 651	4.8	741	.7	312 041	.7	713	.7	298 271	.7
Scott	798	.9	23 391	9.2	751	.7	205 650	.9	703	.8	194 545	.9
Shelby	920	.8	33 497	6.6	852	.7	314 868	.9	809	.8	287 342	.9
Sioux	1 751	.6	115 294	3.8	1 509	.6	452 956	.7	1 432	.7	432 087	.7
Story	947	.7	46 357	5.7	871	.6	316 839	.8	837	.7	304 609	.8
Tama	1 153	.7	25 410	6.6	1 066	.7	347 809	.8	940	.7	300 427	.9
Taylor	745	1.1	15 411	8.3	696	.9	228 964	1.1	556	1.0	147 591	1.2
Union	672	.9	5 916	22.6	617	.9	168 866	1.6	506	1.1	106 685	1.7
Van Buren	805	1.0	7 163	22.2	740	.9	171 564	1.4	622	1.0	114 335	1.6
Wapello	779	.8	10 823	11.3	727	.7	159 991	1.2	606	.9	118 662	1.3
Warren	1 215	.7	16 990	9.1	1 092	.7	219 996	1.1	953	.8	165 153	1.2
Washington	1 062	.9	44 860	6.3	952	.7	273 784	.9	851	.8	234 397	.9
Wayne	729	.7	6 886	17.5	685	.6	218 755	.9	576	.7	129 229	1.0
Webster	936	.7	53 525	5.0	884	.6	385 884	.6	849	.6	374 565	.6
Winnebago	606	.7	21 567	9.6	562	.6	226 547	.8	510	.7	214 360	.8
Winneshiek	1 450	.8	27 785	8.4	1 320	.7	286 614	.9	1 116	.8	230 401	.9
Woodbury	1 308	.8	33 362	7.4	1 181	.9	427 501	.9	1 015	.9	365 559	.9
Worth	607	.7	17 346	10.6	555	.6	209 352	.9	498	.7	196 909	.9
Wright	716	.6	30 082	7.9	664	.5	329 787	.6	641	.5	318 484	.6
Irrigated land				Livestock and poultry								
Geographic area	Farms		Acres		Cattle and calves inventory				Beef cows inventory			
	Number	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	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)
Iowa	957	1.0	124 983	1.1	38 435	.6	3 647 129	.5	27 452	.6	1 029 172	.6
Adair	3	15.2	(D)	(D)	507	1.0	53 168	1.3	456	1.1	23 167	1.4
Adams	1	32.5	(D)	(D)	359	1.2	39 603	1.3	326	1.3	16 364	1.5
Allamakee	4	13.5	(D)	(D)	642	.9	68 945	1.1	382	1.3	16 971	1.7
Appanoose	2	15.0	(D)	(D)	537	1.0	42 971	1.6	502	1.1	23 488	1.6
Audubon	—	—	—	—	276	1.4	32 920	1.2	206	1.7	8 875	2.0
Benton	11	8.8	399	18.0	514	1.1	40 399	1.0	380	1.3	10 749	1.5
Black Hawk	23	5.2	1 000	10.8	267	1.5	16 541	1.6	149	2.2	3 567	3.1
Boone	10	9.0	257	20.8	235	1.5	17 195	1.3	191	1.8	5 850	1.7
Bremer	7	10.8	342	13.8	405	1.3	24 501	1.8	176	2.1	3 797	2.6
Buchanan	5	12.8	(D)	(D)	497	1.1	28 189	1.3	244	1.7	5 479	2.3
Buena Vista	5	10.0	(D)	(D)	205	1.6	22 926	1.4	155	2.0	4 592	2.9
Butler	4	17.2	91	20.8	370	1.2	21 885	1.4	236	1.6	5 352	2.2
Calhoun	2	17.5	(D)	(D)	182	2.1	21 054	1.7	124	2.6	(D)	(D)
Carroll	7	8.4	575	11.2	389	1.2	73 296	.7	253	1.7	9 576	1.9
Cass	3	18.8	(D)	(D)	440	1.1	49 714	1.2	376	1.2	16 670	1.6
Cedar	7	7.8	(D)	(D)	395	1.2	29 787	1.5	294	1.4	9 691	1.8
Cerro Gordo	10	7.6	199	3.0	170	2.1	9 418	2.6	104	2.7	2 630	3.8
Cherokee	—	—	—	—	368	1.2	48 587	1.1	274	1.5	10 680	1.8
Chickasaw	6	12.4	613	10.8	426	1.3	39 107	1.2	216	2.0	6 333	2.8

See footnotes at end of table.

Table F. Reliability Estimates for the State and County Totals: 1997—Con.

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

Geographic area	Irrigated land				Livestock and poultry							
	Farms		Acres		Cattle and calves inventory				Beef cows inventory			
	Number	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	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)
Clarke	5	13.4	383	16.4	449	1.1	40 721	1.8	422	1.2	20 128	1.8
Clay	9	9.6	844	19.4	176	1.9	16 987	1.4	138	2.2	(D)	(D)
Clayton	7	10.7	465	14.5	955	.8	83 360	1.0	489	1.2	15 905	1.7
Clinton	9	9.7	113	28.0	564	1.1	54 104	1.2	354	1.4	12 885	1.7
Crawford	5	13.9	184	16.4	608	1.1	60 675	1.1	490	1.3	19 272	1.6
Dallas	17	6.5	844	.9	274	1.4	16 221	1.8	222	1.6	6 380	2.3
Davis	5	13.0	(D)	(D)	584	1.0	47 461	1.4	491	1.1	21 370	1.6
Decatur	3	21.9	12	33.2	462	.9	61 623	1.0	407	1.0	23 245	1.2
Delaware	5	15.4	10	19.3	690	.9	70 399	.9	241	1.7	7 973	1.8
Des Moines	14	5.8	1 945	4.0	255	1.5	15 343	2.0	209	1.7	5 689	2.7
Dickinson	3	21.6	(D)	(D)	139	2.1	26 846	1.1	94	2.9	3 983	3.5
Dubuque	6	10.6	20	9.7	1 042	.9	112 144	.9	438	1.4	16 398	1.6
Emmet	2	13.4	(D)	(D)	145	1.9	18 909	1.3	97	2.5	(D)	(D)
Fayette	13	9.2	738	14.5	628	1.0	59 268	1.0	276	1.6	9 519	1.9
Floyd	12	7.2	1 924	6.7	250	1.5	15 921	2.3	156	2.0	4 153	2.6
Franklin	2	22.2	(D)	(D)	219	1.8	19 252	1.6	151	2.2	4 130	2.3
Fremont	13	6.0	1 932	4.5	222	1.5	23 564	1.3	195	1.7	(D)	(D)
Greene	7	8.2	1 207	4.9	246	1.6	21 041	1.7	196	1.9	5 741	2.4
Grundy	4	16.4	(D)	(D)	221	1.4	19 843	1.2	141	1.9	4 376	2.6
Guthrie	3	19.4	(D)	(D)	456	1.2	36 996	1.4	407	1.3	16 758	2.0
Hamilton	6	11.1	(D)	(D)	118	2.1	5 150	2.3	82	2.7	1 654	3.4
Hancock	8	10.6	480	10.8	190	1.7	11 616	1.8	112	2.3	2 756	3.0
Hardin	6	9.6	(D)	(D)	250	1.7	19 525	1.8	197	1.9	6 388	2.7
Harrison	59	3.5	20 699	2.5	364	1.5	33 693	1.6	291	1.8	11 727	2.2
Henry	2	20.2	(D)	(D)	316	1.3	18 075	1.9	259	1.5	8 399	2.2
Howard	2	23.5	(D)	(D)	381	1.3	30 651	1.5	174	2.1	5 118	2.8
Humboldt	1	—	(D)	(D)	117	2.5	11 936	2.0	58	3.8	1 463	3.6
Ida	2	16.8	(D)	(D)	292	1.7	33 145	1.4	235	2.0	(D)	(D)
Iowa	4	18.0	22	19.5	446	1.2	44 383	1.3	369	1.3	16 485	1.6
Jackson	9	9.1	248	12.5	873	.8	89 317	1.1	648	1.1	25 448	1.4
Jasper	6	15.0	(D)	(D)	514	1.2	46 016	1.3	426	1.4	16 551	1.7
Jefferson	5	14.0	(D)	(D)	355	1.4	20 280	1.9	307	1.6	8 591	2.1
Johnson	20	6.3	771	2.0	566	1.1	37 990	1.7	405	1.4	12 395	1.9
Jones	3	20.4	(D)	(D)	530	.9	61 039	1.0	357	1.2	15 237	1.6
Keokuk	—	—	—	—	413	1.4	28 601	1.8	359	1.5	13 292	1.9
Kossuth	8	6.5	614	5.8	308	1.4	30 431	1.1	167	2.0	4 905	2.4
Lee	12	7.5	939	7.2	392	1.3	26 884	1.7	310	1.6	10 265	2.1
Linn	23	6.3	189	11.2	616	1.0	36 790	1.1	445	1.3	10 358	1.7
Louisa	34	4.2	5 015	3.7	176	1.9	11 269	2.6	141	2.3	4 548	3.0
Lucas	1	49.9	(D)	(D)	445	1.1	40 506	1.7	417	1.2	21 117	1.8
Lyon	7	11.0	515	14.0	507	1.3	78 467	.9	261	2.0	9 568	2.4
Madison	6	14.5	46	14.0	579	1.1	44 695	1.5	523	1.2	21 791	1.6
Mahaska	5	14.2	(D)	(D)	436	1.2	41 421	1.3	308	1.6	10 454	2.0
Marion	7	11.3	55	16.9	465	1.2	30 772	1.6	387	1.4	12 969	2.1
Marshall	6	9.9	8	9.5	316	1.4	25 413	1.5	252	1.6	7 996	2.2
Mills	3	—	(D)	(D)	180	2.0	14 175	2.4	149	2.3	5 680	2.9
Mitchell	7	8.9	394	20.2	322	1.4	44 635	1.2	105	2.7	2 873	4.2
Monona	102	2.5	40 838	2.1	263	1.6	36 424	1.5	201	2.0	9 491	2.5
Monroe	2	24.1	(D)	(D)	418	1.3	37 088	2.2	372	1.5	17 586	2.2
Montgomery	2	—	(D)	(D)	275	1.3	29 357	1.2	234	1.5	10 160	1.8
Muscatine	41	4.3	5 924	5.7	295	1.5	19 217	1.9	232	1.8	6 417	2.3
O'Brien	4	14.6	(D)	(D)	274	1.6	34 064	1.3	160	2.2	6 394	2.2
Osceola	7	11.0	717	14.1	188	2.0	30 926	1.6	68	3.7	2 581	6.3
Page	8	9.6	187	4.1	447	1.1	39 461	1.3	373	1.2	15 535	1.8
Palo Alto	27	5.5	4 185	6.4	182	1.7	18 843	1.8	111	2.3	2 994	3.2
Plymouth	9	11.5	2 262	7.1	616	1.1	79 131	1.0	427	1.4	17 884	1.9
Pocahontas	7	10.9	107	7.2	131	2.3	11 657	2.4	73	3.2	1 797	4.1
Polk	20	7.1	112	10.5	190	2.0	9 774	2.6	152	2.4	4 135	3.1
Pottawattamie	17	6.3	1 864	4.8	559	1.2	63 804	1.1	451	1.4	15 680	1.8
Poweshiek	3	21.1	3	21.1	462	1.1	40 525	1.6	392	1.3	15 515	1.8
Ringgold	1	35.7	(D)	(D)	407	1.2	41 973	1.6	380	1.2	21 129	1.6
Sac	8	10.4	590	2.3	276	1.5	39 542	1.1	184	2.0	6 398	2.2
Scott	11	8.7	640	2.6	292	1.6	20 483	2.0	208	1.9	5 581	3.2
Shelby	5	13.2	20	26.5	425	1.3	40 343	1.2	341	1.5	10 986	1.8
Sioux	47	3.8	7 899	4.3	677	.9	174 053	.5	187	2.0	10 700	1.7
Story	22	6.9	325	13.8	212	1.7	16 965	1.3	135	2.2	3 568	3.0
Tama	6	14.7	91	35.9	500	1.2	34 081	1.8	382	1.4	13 332	2.2
Taylor	—	—	—	—	425	1.2	36 730	1.5	375	1.3	17 312	1.6
Union	8	12.2	152	25.8	402	1.3	37 889	1.9	359	1.5	(D)	(D)
Van Buren	3	15.1	13	14.7	450	1.3	30 669	1.7	394	1.4	15 319	1.8
Wapello	5	14.6	51	16.5	387	1.3	20 975	1.9	346	1.4	9 976	2.0
Warren	8	12.6	255	20.6	620	1.1	39 482	1.7	556	1.2	18 329	1.8
Washington	2	18.1	(D)	(D)	394	1.4	25 439	1.9	285	1.7	9 423	2.1
Wayne	3	16.8	(D)	(D)	450	.9	42 482	1.3	399	1.0	20 902	1.4
Webster	9	8.4	87	3.7	208	1.8	12 870	1.6	154	2.2	3 805	2.5
Winnebago	3	8.4	3	8.4	120	2.3	5 994	2.7	67	3.2	1 136	4.3
Winneshiek	13	8.4	179	23.7	855	1.0	81 358	1.1	443	1.4	13 915	1.8
Woodbury	44	4.4	7 782	4.5	511	1.3	62 634	1.3	412	1.5	18 491	2.0
Worth	3	—	402	—	180	1.8	9 892	2.3	125	2.3	2 652	3.1
Wright	1	—	(D)	(D)	108	2.3	5 245	1.8	72	2.8	1 539	2.9

See footnotes at end of table.

Table F. Reliability Estimates for the State and County Totals: 1997—Con.

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

Geographic area	Livestock and poultry—Con.											
	Milk cows inventory				Hogs and pigs inventory				Sheep and lambs inventory			
	Farms		Total		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)	Number	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)
Ringgold	13	8.6	242	15.2	55	3.5	181 241	.3	24	6.1	1 449	12.4
Sac	13	7.8	754	2.7	240	1.4	350 473	.4	51	4.1	5 411	3.7
Scott	24	6.4	844	7.2	152	2.1	104 705	1.3	53	4.2	1 679	5.9
Shelby	8	11.8	324	13.5	217	1.8	119 133	1.3	39	4.8	2 109	10.5
Sioux	117	2.3	14 214	1.0	688	.9	762 294	.4	102	2.7	28 917	1.2
Story	8	6.3	1 342	1.0	142	2.1	102 688	1.2	62	3.4	2 906	4.8
Tama	29	5.6	1 460	4.4	165	2.1	103 275	1.1	80	3.4	3 470	5.1
Taylor	7	12.1	220	7.0	83	3.1	41 037	1.6	23	6.7	1 126	13.3
Union	5	14.2	(D)	(D)	63	3.6	56 082	1.5	39	5.4	2 970	9.5
Van Buren	30	6.1	941	7.1	82	3.1	43 971	1.9	62	4.1	3 548	6.9
Wapello	15	8.0	439	8.7	61	3.2	34 941	1.7	23	7.2	631	8.7
Warren	21	6.8	494	6.3	91	3.1	42 339	1.9	61	4.2	1 790	9.2
Washington	50	4.5	1 272	5.9	386	1.2	436 353	.5	70	3.9	3 278	6.3
Wayne	16	7.4	479	8.6	49	3.6	20 808	2.2	28	4.8	1 043	5.8
Webster	6	10.7	292	13.5	130	1.9	149 935	.5	36	4.4	1 274	4.5
Winnebago	21	5.8	533	6.0	122	2.1	44 371	1.9	26	5.3	651	7.4
Winneshiek	332	1.6	19 617	1.4	302	1.6	125 534	1.3	58	4.1	1 991	6.7
Woodbury	5	17.5	109	19.8	190	2.1	103 850	1.4	48	4.7	1 991	7.1
Worth	12	7.3	467	6.1	103	2.3	46 325	1.9	23	5.7	937	7.1
Wright	5	12.4	64	19.5	94	2.1	358 616	.3	39	4.1	1 621	5.6

Geographic area	Livestock and poultry—Con.							
	Layers 20 weeks old and older 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)
Iowa	1 831	.9	21 509 521	.1	519	1.4	6 852 810	1.1
Adair	16	7.2	(D)	(D)	9	8.0	2 085	17.2
Adams	12	8.2	2 057	12.9	3	—	610 000	—
Allamakee	7	12.1	413	22.2	4	18.2	(D)	(D)
Appanoose	25	6.1	410	8.5	2	16.4	(D)	(D)
Audubon	10	8.1	(D)	(D)	6	10.9	1 406	6.1
Benton	25	5.9	(D)	(D)	15	7.0	8 173	11.0
Black Hawk	18	7.2	(D)	(D)	7	10.9	2 151	24.5
Boone	15	6.3	(D)	(D)	7	10.2	1 353	12.3
Bremer	24	5.8	(D)	(D)	9	11.2	1 521	19.0
Buchanan	43	4.1	(D)	(D)	15	7.1	118 225	9.9
Buena Vista	11	7.6	(D)	(D)	7	8.2	665	9.8
Butler	30	4.8	(D)	(D)	9	9.2	10 123	35.5
Calhoun	13	9.6	340	13.1	5	14.0	2 115	16.8
Carroll	13	8.5	600	11.1	7	11.9	2 625	13.6
Cass	11	7.9	(D)	(D)	3	15.7	(D)	(D)
Cedar	15	7.8	405	10.1	6	13.2	891	15.2
Cerro Gordo	12	7.8	35 664	(L)	2	18.6	(D)	(D)
Cherokee	6	11.5	(D)	(D)	4	15.7	1 850	24.1
Chickasaw	18	7.2	782	10.8	7	13.1	(D)	(D)
Clarke	17	7.1	1 146	11.2	1	50.0	(D)	(D)
Clay	7	8.0	(D)	(D)	7	12.8	2 351	17.7
Clayton	39	4.8	449 504	(L)	6	12.3	1 800	16.0
Clinton	23	6.7	991	13.8	5	12.0	297	15.4
Crawford	23	6.9	(D)	(D)	8	11.6	1 177	16.2
Dallas	26	5.0	213 237	2.2	4	14.1	921	17.2
Davis	43	4.6	11 442	30.5	1	34.9	(D)	(D)
Decatur	19	6.5	375	7.5	3	12.4	250	11.8
Delaware	25	5.8	(D)	(D)	4	12.9	265	12.7
Des Moines	10	9.0	309	9.5	3	13.0	200	7.6
Dickinson	4	14.7	84	18.6	1	33.0	(D)	(D)
Dubuque	22	6.3	1 337	10.7	5	15.3	687	24.2
Emmet	6	12.2	(D)	(D)	5	15.7	1 240	21.4
Fayette	20	5.9	(D)	(D)	3	16.9	215	18.6
Floyd	6	10.9	(D)	(D)	8	9.1	(D)	(D)
Franklin	20	6.2	(D)	(D)	5	14.1	937	17.7
Fremont	5	12.4	123	17.5	1	31.4	(D)	(D)
Greene	13	7.6	908	18.6	8	9.8	1 168	21.2
Grundy	14	6.6	163 891	4.2	7	8.7	2 715	10.6
Guthrie	18	6.9	(D)	(D)	2	28.5	(D)	(D)
Hamilton	13	6.7	12 356	18.9	2	21.9	(D)	(D)
Hancock	14	7.1	(D)	(D)	2	13.7	(D)	(D)
Hardin	14	7.4	(D)	(D)	5	12.1	755	24.2
Harrison	12	10.1	596	14.9	5	16.2	(D)	(D)
Henry	11	9.7	312	11.5	2	21.4	(D)	(D)
Howard	29	6.0	1 382	12.4	5	12.5	325	14.0
Humboldt	11	9.8	133 062	4.8	4	13.1	(D)	(D)
Ida	15	8.9	1 201	16.3	3	21.5	(D)	(D)
Iowa	12	8.4	813	16.6	5	12.7	485	18.8
Jackson	25	6.3	(D)	(D)	6	13.1	1 955	17.5

See footnotes at end of table.

Table F. Reliability Estimates for the State and County Totals: 1997—Con.

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

Geographic area	Livestock and poultry—Con.											
	Layers 20 weeks old and older 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)				
Jasper	25	5.9	(D)	(D)	7	12.8	2 681	12.9				
Jefferson	14	8.8	780	18.9	2	26.0	(D)	(D)				
Johnson	62	3.8	64 027	.5	12	9.4	10 537	23.8				
Jones	17	7.1	364	9.0	6	14.1	1 176	16.9				
Keokuk	13	7.5	(D)	(D)	4	12.6	960	19.1				
Kossuth	19	6.5	9 515	21.1	10	9.0	8 142	12.6				
Lee	19	7.5	1 428	19.4	—	—	—	—				
Linn	43	4.3	1 363	6.4	10	9.5	1 438	13.9				
Louisa	6	9.2	94	10.5	2	15.3	(D)	(D)				
Lucas	23	6.1	432	8.0	4	16.6	950	19.1				
Lyon	16	7.7	(D)	(D)	13	7.4	404 682	.3				
Madison	27	6.4	(D)	(D)	1	36.1	(D)	(D)				
Mahaska	11	9.4	(D)	(D)	2	23.6	(D)	(D)				
Marion	24	6.4	769	8.0	4	19.3	197	25.9				
Marshall	16	7.3	(D)	(D)	6	13.7	1 395	14.1				
Mills	9	9.8	260	17.4	2	25.1	(D)	(D)				
Mitchell	37	5.5	279 987	2.3	13	10.3	(D)	(D)				
Monona	10	9.7	193	12.6	2	16.8	(D)	(D)				
Monroe	8	11.4	153	14.5	—	—	—	—				
Montgomery	10	8.7	(D)	(D)	1	28.8	(D)	(D)				
Muscatine	25	6.5	1 886	12.4	7	11.0	1 250	13.9				
O'Brien	21	6.3	304 897	2.5	9	8.1	(D)	(D)				
Osceola	9	7.0	(D)	(D)	4	12.5	(D)	(D)				
Page	11	8.8	841	16.8	2	26.6	(D)	(D)				
Palo Alto	10	6.9	817 505	(L)	7	11.1	2 106	14.4				
Plymouth	29	6.0	7 763	2.1	4	17.1	(D)	(D)				
Pocahontas	9	9.0	(D)	(D)	3	18.8	(D)	(D)				
Polk	17	8.5	263	9.8	5	13.7	6 605	28.2				
Pottawattamie	30	5.5	907	7.8	9	10.4	874	15.6				
Poweshiek	11	9.3	(D)	(D)	4	16.9	95	18.8				
Ringgold	13	7.8	303	9.9	4	11.4	(D)	(D)				
Sac	13	8.2	96 168	6.2	5	12.1	425	23.6				
Scott	22	6.5	2 064	23.6	2	23.7	(D)	(D)				
Shelby	17	8.2	582	10.7	9	9.6	1 474	12.7				
Sioux	31	3.7	1 573 881	.2	23	5.2	2 472 235	.2				
Story	16	7.4	1 132	16.2	7	11.1	4 300	12.4				
Tama	34	5.6	1 107	8.1	9	11.5	1 044	16.9				
Taylor	19	7.2	(D)	(D)	4	13.0	(D)	(D)				
Union	12	9.4	148	11.1	8	10.7	(D)	(D)				
Van Buren	22	7.0	975	10.3	4	19.4	248	23.2				
Wapello	16	8.3	526	14.7	2	23.0	(D)	(D)				
Warren	28	6.3	620	7.8	3	21.3	(D)	(D)				
Washington	47	4.3	399 737	.5	11	11.3	(D)	(D)				
Wayne	10	8.0	230	10.5	1	46.6	(D)	(D)				
Webster	20	6.9	(D)	(D)	1	30.5	(D)	(D)				
Winnebago	8	9.6	619	18.5	2	19.0	(D)	(D)				
Winneshiek	36	4.9	(D)	(D)	5	12.8	475	16.1				
Woodbury	33	5.7	1 267	7.2	5	14.1	1 960	26.9				
Worth	4	15.9	(D)	(D)	5	13.5	630	17.7				
Wright	9	7.4	(D)	(D)	1	31.7	(D)	(D)				
Selected crops harvested												
Geographic area	Corn for grain or seed				Corn for silage or green chop							
	Farms		Acres		Quantity		Acres		Quantity			
	Number	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Bushels	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Tons, green	Relative standard error of estimate (percent)		
Iowa	61 860	.6	11 595 308	.5	1 537 482 128	.5	8 405	.7	241 549	.5	3 993 158	.6
Adair	543	.9	93 873	1.1	10 829 372	1.1	93	2.8	2 686	3.5	38 974	3.6
Adams	338	1.2	54 227	1.3	6 247 399	1.3	36	4.2	1 301	4.3	16 118	4.0
Allamakee	584	1.0	63 619	1.2	8 273 034	1.2	275	1.6	6 831	1.9	115 394	1.7
Appanoose	309	1.5	27 217	1.9	3 290 397	2.0	29	5.7	754	7.4	10 057	8.4
Audubon	468	.9	103 274	.9	12 811 212	.9	47	3.4	1 356	4.0	19 077	3.3
Benton	866	.7	166 702	.8	23 422 374	.8	86	2.8	1 974	2.5	32 333	2.7
Black Hawk	722	.7	131 973	.8	17 572 621	.8	63	3.2	1 727	3.6	29 935	4.0
Boone	632	.7	140 660	.7	20 115 217	.7	28	4.5	561	5.1	10 289	7.5
Bremer	713	.8	105 948	.9	14 824 642	.9	114	2.7	2 371	3.0	43 121	3.4
Buchanan	859	.7	156 792	.8	20 690 445	.8	143	2.2	3 228	2.8	60 888	4.2
Buena Vista	714	.6	158 339	.6	22 268 695	.6	66	2.8	2 887	1.8	60 043	1.5
Butler	784	.7	139 450	.7	18 450 766	.7	83	2.5	1 927	2.7	29 828	2.5
Calhoun	650	.9	149 875	.9	19 749 654	.9	39	4.1	2 012	2.2	25 960	3.4
Carroll	883	.7	151 595	.8	19 662 164	.8	77	2.7	2 631	2.0	39 336	2.7
Cass	575	.8	114 895	.9	13 311 624	1.0	81	2.9	1 708	2.8	24 267	2.6
Cedar	690	.7	140 111	.8	19 025 852	.8	81	2.9	1 508	2.8	21 462	3.3
Cerro Gordo	563	.9	137 695	.9	19 318 381	.9	44	4.4	1 115	6.9	19 403	6.9
Cherokee	704	.7	129 500	.8	17 375 954	.8	121	2.2	4 600	1.6	79 806	1.2
Chickasaw	674	.9	114 215	.9	15 587 474	.9	177	2.1	5 302	2.2	91 489	2.2

See footnotes at end of table.

Table F. Reliability Estimates for the State and County Totals: 1997—Con.

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

Geographic area	Selected crops harvested—Con.											
	Soybeans for beans						Hay—alfalfa, other tame, small grain, wild, grass silage, green chop, etc. (see text)					
	Farms		Acres		Quantity		Farms		Acres		Quantity	
	Number	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Bushels	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Tons, dry	Relative standard error of estimate (percent)
Jasper	790	.9	138 711	.9	6 745 742	.9	574	1.1	21 078	1.5	69 462	1.6
Jefferson	403	1.3	62 066	1.5	2 764 056	1.5	357	1.4	13 924	2.2	35 237	2.7
Johnson	629	1.0	76 018	1.2	3 596 929	1.2	634	1.0	23 739	1.4	72 724	1.5
Jones	553	.9	70 527	1.1	3 504 748	1.1	534	.9	24 448	1.3	77 258	1.3
Keokuk	550	1.1	80 464	1.3	3 972 982	1.3	374	1.4	15 280	2.0	47 276	2.0
Kossuth	1 172	.6	242 432	.6	10 333 066	.6	225	1.7	5 278	2.7	10 820	2.6
Lee	458	1.1	63 556	1.4	3 053 380	1.4	415	1.3	16 084	1.8	46 121	1.9
Linn	790	.8	105 898	.9	4 948 400	1.0	648	1.0	18 870	1.4	52 697	1.5
Louisa	372	1.0	65 965	1.2	2 957 729	1.2	183	1.9	4 447	2.9	13 560	3.5
Lucas	242	1.7	24 159	2.4	1 052 973	2.2	444	1.1	29 048	1.7	73 960	2.0
Lyon	837	1.1	134 236	1.1	6 032 759	1.1	457	1.4	11 619	1.7	34 013	2.0
Madison	533	1.2	67 246	1.4	2 764 953	1.4	583	1.1	26 757	1.5	64 629	1.6
Mahaska	643	.9	94 723	1.0	4 584 281	1.0	432	1.2	15 911	1.6	50 351	1.8
Marion	521	1.1	71 549	1.2	3 205 697	1.2	495	1.2	22 706	1.7	58 528	2.1
Marshall	616	.8	120 612	.9	5 965 650	1.0	299	1.4	8 873	1.8	27 084	2.1
Mills	369	1.1	89 756	1.2	3 761 142	1.3	192	2.0	5 470	2.7	15 654	2.8
Mitchell	586	.9	92 807	1.0	4 202 974	1.0	262	1.6	8 439	2.3	20 915	2.3
Monona	486	1.0	123 734	.9	5 018 939	.9	219	1.9	8 812	2.5	25 170	2.7
Monroe	310	1.7	26 580	2.6	1 164 628	2.7	478	1.2	28 845	1.8	77 593	2.0
Montgomery	397	.9	79 948	1.0	3 481 395	1.0	291	1.3	11 540	1.7	29 678	1.6
Muscatine	462	1.1	69 398	1.3	3 169 940	1.3	331	1.4	10 183	1.9	31 493	2.1
O'Brien	830	.7	155 109	.8	7 274 306	.8	262	1.6	5 279	2.9	13 691	3.4
Osceola	539	.9	104 755	1.0	4 385 453	1.0	151	2.3	3 363	2.3	7 758	2.4
Page	557	.9	96 650	1.0	4 262 924	1.0	443	1.1	17 790	1.5	47 591	1.7
Palo Alto	633	.7	138 121	.8	6 024 714	.8	153	2.0	3 468	3.3	7 722	3.0
Plymouth	1 050	.8	183 410	.8	8 177 213	.8	526	1.2	15 857	1.6	41 539	1.8
Pocahontas	698	.7	164 947	.8	7 554 633	.8	136	2.3	2 115	2.9	4 636	2.8
Polk	448	1.1	87 971	1.0	4 004 990	1.0	241	1.8	6 972	3.7	16 409	3.1
Pottawattamie	923	.9	201 459	.8	8 771 176	.8	567	1.2	16 109	1.6	46 271	1.8
Poweshiek	584	.9	97 123	1.0	4 615 495	1.0	488	1.1	24 242	1.3	75 394	1.4
Ringgold	344	1.4	42 564	1.6	1 709 042	1.6	410	1.2	32 329	1.6	72 991	1.8
Sac	642	.8	141 008	.7	6 521 868	.7	259	1.6	7 289	1.9	20 305	2.3
Scott	522	1.0	70 605	1.1	3 635 063	1.1	303	1.5	7 618	2.1	23 455	2.2
Shelby	716	.9	124 143	1.0	5 783 806	1.0	407	1.3	12 260	2.3	36 632	2.5
Sioux	1 213	.7	183 844	.8	8 786 442	.8	485	1.2	13 090	1.6	38 891	1.6
Story	688	.8	145 726	.8	6 578 229	.8	264	1.5	5 459	1.9	16 024	2.1
Tama	738	.9	130 656	1.0	6 185 159	1.0	493	1.2	16 290	1.6	51 012	1.8
Taylor	440	1.2	70 062	1.2	2 725 607	1.3	388	1.3	21 584	1.7	51 419	2.0
Union	303	1.6	40 063	2.1	1 636 565	2.1	403	1.3	25 525	1.8	57 426	2.0
Van Buren	365	1.4	44 647	1.9	2 043 426	2.0	475	1.2	25 354	1.9	64 850	2.3
Wapello	320	1.4	51 014	1.5	2 332 218	1.5	420	1.2	18 609	1.8	44 351	2.1
Warren	544	1.2	67 793	1.3	2 935 310	1.4	675	1.0	27 207	1.6	75 368	1.9
Washington	678	.9	101 882	1.0	4 928 949	1.0	438	1.3	13 534	1.9	38 502	1.8
Wayne	343	1.2	47 379	1.3	1 851 706	1.3	477	.9	39 231	1.2	92 896	1.4
Webster	773	.7	186 828	.7	8 373 468	.7	176	2.0	3 113	3.1	9 181	4.0
Winnebago	420	.8	90 667	.8	3 844 415	.8	124	2.2	3 609	2.8	8 814	3.8
Winneshek	556	1.3	46 832	1.4	2 097 700	1.4	884	.9	50 154	1.2	159 400	1.3
Woodbury	753	1.1	162 550	.9	6 467 355	.9	458	1.4	14 289	1.8	32 559	1.9
Worth	431	.8	89 667	1.0	3 862 387	1.0	184	1.7	3 571	2.8	8 037	3.0
Wright	583	.6	154 492	.6	6 429 191	.6	119	2.1	2 163	3.4	4 745	2.2

¹Data are based on a sample of farms.

Table G. Coverage Estimates: 1997

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

Item	Census total	Coverage total ¹	Adjusted census		Coverage adjustment (percent)
			Total	Relative standard error (percent)	
Farms number..	90 792	5 905	96 697	1.4	6.1
Land in farms acres..	31 166 699	458 768	31 625 467	1.2	1.5
Average size of farm acres..	343	78	327	(X)	(X)
Farms by size of farm:					
Less than 10 acres	5 049	832	5 881	8.3	14.1
10 to 49 acres	11 580	1 527	13 107	5.3	11.7
50 to 179 acres	24 525	1 909	26 434	2.4	7.2
180 acres or more	49 638	1 637	51 275	1.2	3.2
Farms by value of sales:					
Less than \$2,500	13 191	3 436	16 627	4.7	20.7
\$2,500 to \$9,999	10 455	736	11 191	4.2	6.6
\$10,000 or more	67 146	1 733	68 879	1.1	2.5
Market value of agricultural products sold \$1,000..	11 947 894	63 422	12 011 315	1.2	.5
Farms by type of organization:					
Individual or family	75 880	5 708	81 588	1.5	7.0
Partnership, corporation, or other	14 912	197	15 109	2.3	1.3
Farms by tenure of operator:					
Full owners	42 902	4 198	47 100	2.3	8.9
Part owners	32 996	575	33 571	1.2	1.7
Tenants	14 894	1 132	16 026	2.9	7.1
Operators by place of residence:					
On farm operated	66 661	4 390	71 051	1.4	6.2
Not on farm operated	19 439	1 046	20 485	2.8	5.1
Not reported	4 692	469	5 161	6.9	9.1
Operators by principal occupation:					
Farming	56 256	1 454	57 710	1.2	2.5
Other	34 536	4 451	38 987	2.7	11.4
Operators by sex:					
Male	86 174	5 491	91 665	1.4	6.0
Female.....	4 618	414	5 032	6.5	8.2
Operators by race:					
White	90 669	5 867	96 536	1.4	6.1
Black and other races	123	38	161	126.1	23.6
Operators by years on present farm:					
4 years or less	7 792	1 672	9 464	4.8	17.7
5 years or more	71 143	3 158	74 301	1.1	4.3
Not reported	11 857	1 075	12 932	5.8	8.3

¹ See text in Appendix C regarding coverage estimates.