



Grain Stocks Methodology and Quality Measures

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Scope and Purpose: Estimates of grain stocks and capacity are derived from the Agricultural Survey and the Off-Farm Grain Stocks (OFGS) survey. The Agricultural Survey is a quarterly survey (March, June, September, and December) conducted in all States, except Hawaii, which collects on-farm grain stocks and storage each quarter. Reports received from individual farmers and ranchers remain confidential and are used only in combination with other reports to arrive at State and National estimates. The OFGS survey is conducted quarterly in all States, except Alaska, Connecticut, Hawaii, Nevada, and Rhode Island. For the OFGS survey, elevators, warehouses, and processing facilities are contacted to determine how much of a commodity is being stored at a certain point in time. Published estimates for the off-farm grain stocks are used in combination with the on-farm grain stocks estimates to get a complete picture of the amount of grain stored across the country.

The use of crop acreage, production, and stocks information is extensive and varied. It helps producers find the best market opportunities for their commodities. Often, recommendations and forecasts presented in agricultural magazines, news releases, etc. are based on data from the Agricultural Survey and the OFGS surveys found in NASS reports. Uses of data by farm organizations, financial institutions, insurance companies, agribusinesses, State and National farm policy makers, and buyers of agricultural products may range from maintaining a basic data series to preparing marketing campaigns and determining needs and rates on farm loans and insurance policies. Government agencies at various levels are important users of statistics. Federal farm programs require information on acreage, production potential, stocks, prices, and income. Agricultural statistics are used to plan and administer Federal and State programs in areas such as consumer protection, conservation, foreign trade, education, and recreation.

Timeline: The reference date for the stocks portion of both surveys is the first of the month (March, June, September, and December) with a data collection period of approximately 15 calendar days. Regional Field Offices (RFOs) may begin data collection two days prior to the reference date. Data collection continues until a scheduled ending date, and RFOs have about 4 or 5 business days to complete editing and analysis, execute the summary, and interpret the survey results. The Agricultural Statistics Board (ASB) conducts the National review, reconciles State estimates to the National estimates, and prepare the official estimates for release in 5 or 6 business days. The Grain Stocks report is released at the end of each specified month above except for December. The December 1 stocks estimates are published in early January. The publication contains quarterly U.S. and State level data for grain stocks for all wheat, barley, corn, Durum wheat, oats, sorghum, and soybeans. Certain months of the publication contain annual grain stocks data for canola, mustard seed, rapeseed, rye, and safflower. Additionally, biannual grain stocks data are published for chickpeas, dry edible peas, and lentils in June and December, and for sunflower in March and September.

Sampling: The target population for the Agricultural Survey is farms with cropland and/or storage capacity. NASS uses a dual frame approach, consisting of list frame and area frame components, to provide complete coverage of this target population.

The list frame includes all known farms. Crop acreages and storage capacity of each farm is maintained on the list frame to allow NASS to define list frame sampling populations for specific surveys and to employ efficient sampling designs. Only list frame records with positive planted acres or storage capacity of the desired commodities are included in the list frame population. A lower boundary, such as 50 acres of total cropland or 1,000 bushels of grain storage capacity, is used for some States to establish the list frame population.

The area frame contains all land in the State and, as such, is complete. The land is stratified according to intensity of agriculture using satellite imagery and sampled to effectively measure crops and livestock. All sampled land areas are

enumerated in June. The farms found operating in these segments are checked to see if they are included in the list frame population. The farms that are not included in the list frame sampling population are sub-sampled for the March, September, and December surveys so that the target population is completely represented. These farms are referred to as the nonoverlap portion of the area frame (NOL). The area frame portion of the Agricultural Survey sample is selected from the NOL using a stratified sample design based on data collected in the June Area Survey. A final sampling weight is assigned to each area frame sampling unit which is used to create the survey estimates.

The Agricultural Survey list frame sample is selected using a multivariate probability proportional to size (MPPS) sampling scheme. Each list frame record is assigned a measure of size based on the list frame for multiple specified commodities. The MPPS design makes it very easy to target sample sizes for the commodities of interest, and it is a more efficient design because farms will have a more optimal probability of selection based upon their individual commodities and size. A replication scheme is used to reduce respondent burden and to provide indications of change by comparing reports from the same farm operators. Specific replicates are designated as a stocks panel to accurately measure change in stocks from quarter to quarter.

After the list frame samples are drawn, the sample weights are calibrated so the sum of the weighted commodities in the sample equals the sum of the list frame data for the targeted commodities for each quarter. For example, the sum of the weighted list frame data for storage capacity equals the sum of the population list frame data and is the same for each of the four quarters. All list frame records in the sample are grouped into strata based on the amount of cropland and capacity they have on the list frame. These strata are only used for nonresponse adjustments.

For each commodity, target coefficients of variation (CVs) are determined in advance of sampling to provide a certain level of precision for the stocks estimates. The CV is defined as the ratio of the standard error to the estimate expressed as a percentage. At the U.S. level, these target CVs range from 2% to 4% for corn, from 2% to 5% for soybeans, and from 3% to 4% for all wheat stocks depending which quarter of the marketing year the survey occurs. As on-farm stocks become scarce toward the end of the marketing year, the CVs of the stocks estimates generally increase. However, the standard errors also become smaller as stock levels decline across the marketing year. Each year, the final survey CVs are examined against the target CVs to see if any modifications to the sampling procedures are needed. CVs at the State level are expected to be higher than the U.S. level estimates due to the smaller sample sizes, and State level target CVs are set accordingly. Over the last decade, the U.S. level survey CVs have ranged from 1.5% to 4.4% for corn stocks, from 1.7% to 7.5% for soybean stocks, and from 2.3% to 5.0% for all wheat stocks.

The OFGS target population is all entities in the United States that can store at least 1,000 bushels of grain (e.g. elevators, grain and oilseed processing plants, terminals, and any other facilities that store grain or oilseeds excluding peanuts and rice) off the farm. The OFGS sampling frame is grouped into specialty and non-specialty operations and stratified using off farm grain storage capacity as a measure of size. The OFGS is a census; hence, stratification is only used for nonresponse adjustments.

Data Collection: All Regional Field Offices (RFO) use the same standardized questionnaire for data collection. For consistency across modes, the paper version is considered the master questionnaire and the Computer Assisted Self Interview (CASI), mobile Computer Assisted Telephone Interview (mCATI), and Computer Assisted Telephone Interview (CATI) instruments are built to model the paper instrument. Questionnaire content and format are evaluated annually through a specifications process where requests for changes are evaluated and approved or disapproved. Input may vary from question wording or formatting to a program change involving the deletion or modification of current questions or addition of new ones. If there are significant changes to either the content or format proposed, a NASS survey methodologist will pre-test the changes for usability. Prior to the start of data collection, all modes of instruments are reviewed, and CASI, mCATI, and CATI instruments are thoroughly tested.

All federal data collections require approval by the Office of Management and Budget (OMB). NASS must document the public need for the data, apply sound statistical practice, prove the data does not already exist elsewhere, and ensure the public is not excessively burdened. The questionnaires must display an active OMB number that gives NASS the authority to conduct the survey, a statement of the purpose of the survey and the use of the data being collected, a response burden statement that gives an estimate of the time required to complete the form, a confidentiality statement

that the respondent's information will be protected from disclosure, and a statement saying that response to the survey is voluntary and not required by law.

In addition to asking the specific storage capacity and stocks questions, all instruments collect information to verify the sampled unit, determine any changes in the name or address, identify any partners to detect possible duplication, verify the farm still qualifies for the target population, and identify any additional operations operated by the sampled operator.

Sampled farms and ranches receive a cover letter with the questionnaire mailing explaining the survey and providing instructions for completing the survey on the internet. The letter also notifies them that they will be contacted for survey purposes only if they do not return the questionnaire or complete the survey on the web. All modes of data collection are utilized for each survey. While mail and web data collection are the least costly methods of data collection, the short data collection period and the uncertainty of postal delivery times limits the effectiveness of collecting data by mail. Most of the data are collected by CATI in one of the four Data Collection Centers. Limited personal interviewing may be done, generally for large operations or those with special handling arrangements. A coordination tool is available to determine if any sampled farms are in multiple on-going surveys, so data collection can be coordinated.

OFGS Headquarter operations have the option of reporting for each elevator under their control or reporting total levels for each State in which they operate. If a firm chooses to report for each elevator, they complete a separate report for each elevator. If an operation chooses to report State totals, a report is completed for each State. Headquarter reports often account for many individual elevators in a State. The tables on pages 11-14 of this report reflect the counts of reporting units not the counts of individual elevators.

Survey Edit: As survey data are collected and captured, data are edited for consistency and reasonableness using automated systems. The edit logic ensures the coding of administrative data follows the methodological rules associated with the survey design. Relationships between data items (i.e., responses to individual questions) on the current survey are verified. Some data items in the current survey are compared to data items from earlier surveys to ensure certain relationships are logical. The edit assigns a status to each record, indicating whether the record passes or fails the edit requirements for consistency and reasonableness. Records that fail edit requirements must be updated or must be certified by an analyst to be exempt from the failed edit requirement. All records must pass edit requirements, or be certified exempt, before further analysis and summary.

Analysis Tools: Edited data from both surveys are processed and analyzed separately through standard interactive analysis tools which display data for all reports by item. The tools provide scatter plots, tables, charts, and special tabulations that allow the analyst to compare record level data with previously reported data for the same record and reported data from similar records. Atypical responses, unusual data relationships, and statistical outliers for all items are revealed by the analysis tool. RFO and Headquarters staff review such relationships to determine if they are correct. Data found to be in error are corrected, while accepted data are retained.

Nonsampling Errors: Nonsampling error is present in any survey process. This error includes reporting, recording, and editing errors, as well as nonresponse error. Steps are taken to minimize the impact of these errors, such as questionnaire testing, comprehensive interviewer training, validation and verification of processing systems, application of detailed computer edits, and evaluation of the data via the analysis tool. The respondent pool is monitored and reviewed during and after data collection, and data collection strategies modified where necessary, to continually minimize nonresponse error.

Estimators: Response to both surveys is voluntary. Some producers refuse to participate in the survey. Others cannot be located during the data collection period, and some submit incomplete reports. These nonrespondents must be accounted for if accurate estimates of stocks are to be made. For the Agricultural Survey, nonrespondents are accounted for by imputing data where there are missing values.

For the Agricultural Survey, the imputation program imputes for missing survey data using previously reported survey data from similar reports with complete data. The algorithm defines "imputation groups" for list frame records as Agricultural Statistics Districts (ASD) and within the strata assigned at the time of sampling. Operations in the strata with the most capacity and cropland do not form homogeneous groups and are not eligible for machine imputation. If multiple

follow ups do not produce a response, RFO statisticians are required to manually impute. Area frame records are grouped for imputation using ASD and similar strata.

Capacity is imputed first for the nonrespondent. When available, previously reported capacity is used. Otherwise, the ratio of current survey capacity to the list frame data value for capacity is calculated from the respondents in an imputation group. This ratio is applied to the nonrespondent's frame capacity to derive the imputed value for the current survey. When appropriate, if a stocks value is available for the previous quarter, the ratio of the current stocks value to the previous stocks value is calculated from the respondents in an imputation group. This ratio is applied to the nonrespondent's previous quarter stocks value. When a previous quarter stocks value is not available, missing stocks are imputed similarly to capacity using the respondents' ratio of stocks to list frame capacity within each imputation group. If list frame capacity is not available for the nonrespondent, the weighted mean stocks for the imputation group are imputed for the nonrespondent. An imputation group must have five or more respondents before it is used. List frame records with insufficient response are collapsed across ASD and, if there is still insufficient response, collapsed with adjacent strata. NOL records with insufficient response are collapsed across strata and, if there is still insufficient response, collapsed across ASD.

Two kinds of estimators are used for stocks in the Agricultural Survey: direct expansions and ratio estimators. Direct expansions are used to estimate totals such as total capacity and stocks. For the list frame, direct expansions are calculated by summing the reported and imputed commodity values multiplied by the original sample weights. For the NOL sample, the direct expansion is calculated by summing the total farm data for each tract operation multiplied by the original sample weights adjusted for the proportion of the operation's total farmland found in the area sample. The multiple frame direct expansion is the sum of the direct expansions from the list frame and the area frame NOL component. Variances and CVs are calculated using non-imputed data only for the direct expansions to measure the precision of the stocks estimates. U.S. level CVs from the Agricultural Survey for the last eight quarters are displayed in the table on page 15 of this report.

The ratio estimator takes the form of a ratio of two direct expansions which are calculated by summing over the total sample (list + NOL), the reported commodity values multiplied by the original sample weights adjusted for usability status. The ratio estimator is used for all within and across-survey ratios (e.g., Current to Previous Stocks, Stocks to Production, and Stocks to Capacity). This estimator relies exclusively on reported data. For the survey-to-survey ratios, both the current and previous survey data must be reported or estimated to be included in the ratio. If either of these components is not complete, the sampling unit is excluded from the estimate and the weights of the complete records are adjusted accordingly.

The reweighting of the record level sample weight is made within the strata. The adjustment is calculated by summing the weights for all sample records within the strata and dividing by the sum of the weights from the usable records. This ratio is applied to the weights of the usable records. This adjustment assumes that the data of the nonrespondents are similar to the data of the respondents. CVs are also calculated for any ratio estimates in the summary. One advantage of the ratio estimator is that the CVs tend to be smaller than those for the direct expansions.

For the OFGS survey, an estimator that uses capacity information is used to calculate the direct expansion for total stocks. The estimator calculates a nonresponse adjustment by summing the capacity values for all reports and dividing by the sum of the capacity values for the usable operations in the lower strata. Operations in the higher strata must be manually imputed to account for any nonresponse. Any errors that may arise from manually imputing records are not captured in the calculated CVs.

The calculated CVs capture the relative uncertainty that originates from sampling the target population and the loss of sample from nonresponse. However, the CVs do not capture the effect of possible reporting errors or errors that may arise from nonrespondents making fundamentally different grain storing decisions than respondents within imputation or nonresponse adjustment groups.

Estimation: When all samples are accounted for, all responses fully edited, and the analysis material is reviewed, each RFO executes the summary for their States for each survey. When all RFOs have run summaries, Headquarters executes the National summary. Since all States conduct identical surveys, the samples can be pooled, and National survey results

computed. The summary results provide multiple point estimates and corresponding standard errors for each data series being estimated. It also provides information used to assess the performance of the current survey and evaluate the quality of the survey results, such as strata level expansions, response rates, and percent of the expansion from usable reports.

RFO staff are responsible for performing a detailed review of their survey results. Any irregularities revealed by the summary must be investigated and, if necessary, resolved. Using the historical relationship of the survey results to the official estimate, RFO staff must interpret the survey results and submit a recommended estimate to Headquarters for any commodity produced in their States that contributes to the published National estimate. The data are viewed in tabular and graphical form and a consensus estimate is established. RFO staff see their survey results only and do not have access to other States' results. For some data series, information from other sources (administrative data) is also utilized in the process of establishing estimates.

For the National estimates, NASS assembles a panel of statisticians to serve as the ASB which reviews the National results and establishes the National estimates. Since larger sample sizes yield more precise results, NASS employs the "top-down" approach by determining the National estimates first and reconciling the State estimates to the National estimate. The ASB has the advantage of being able to examine results across States, compare the State recommendations, and utilize administrative data available only at the U.S. level. The same estimators used in the State summaries are produced by the National summary. The ASB follows the same approach as the States in determining the National estimate. The historical relationship of the survey results to the official estimate is evaluated over time to determine accuracy and bias using tables and graphs. Each ASB member completes an independent interpretation of the survey results which are shared with the other members. Differing conclusions are discussed and members must explain the logic behind their estimate. An official National estimate is established only upon ASB consensus. Often the State recommendations do not sum to the National estimate. ASB members must reexamine the State results and adjust some States to make the sum of the estimates agree with the National estimate.

External information (administrative data) is also utilized in this process. To be considered, these data must be deemed to be reliable and come from unbiased sources. The most common administrative data for grain stocks are the outstanding loan data from USDA's Farm Service Agency.

For grain stocks, NASS employs a balance sheet approach to corroborate the survey results and official estimates. After estimates are made for on-farm and off-farm stocks, the totals of these two are combined and evaluated using the balance sheet. This method utilizes external information to check the reasonableness of the stocks estimates. This external data will vary some by crop, but includes imports and disappearance data for exports, food use (such as soybeans crushed), feed use, seed use, and industrial use (such as corn processed to produce ethanol and other by-products). This approach is typically limited to National level estimates.

Estimates are open to revision on a preannounced schedule only if new information becomes available. On-farm and off-farm stocks are subject to revision the quarter following initial publication and again in the following December 1 *Grain Stocks* report published in January each year. Every five years, estimates will also be reviewed following the Census of Agriculture, which is an exhaustive data collection effort of all known farm operations across the U.S. The information gathered from the Census of Agriculture provides the last chance for revision.

Quality Metrics for Grain Stocks

Purpose and Definitions: Under the guidance of the Statistical Policy Office of the Office of Management and Budget (OMB), the United States Department of Agriculture's National Agricultural Statistics Service (NASS) provides data users with quality metrics for its published data series. The metrics tables below describe the performance data for all surveys contributing to the publication. The accuracy of data products may be evaluated through sampling and nonsampling error. There is no sampling error present for the OFGS survey since it is a census of all known grain storage entities. The Agricultural Survey CVs measure the error due to sampling as well as some nonsampling error. Nonsampling error is also evaluated by examining response rates and the weighted item response rates.

Sample size is the number of observations selected from the population to represent a characteristic of the population. Operations that did not have the item of interest or were out of business at the time of data collection have been excluded.

Response rate is the proportion of the above sample that completed the survey. This calculation follows Guideline 3.2.2 of the OMB Standards and Guidelines for Statistical Surveys (September 2006).

Weighted item response rate is a ratio of reported survey data expanded by the original sampling weight compared to final nonresponse adjusted summary totals.

Coefficient of variation provides a measure of the size for the standard error relative to the point estimate and is used to measure the precision of the results of a survey estimator.

March Agricultural Survey Sample Size and Response Rate - States and United States: 2023 and 2024

State	Sample Size		Response Rate	
	2023 (number)	2024 (number)	2023 (percent)	2024 (percent)
Alabama	749	740	67.0	54.7
Alaska	121	107	52.1	55.1
Arizona	331	299	56.5	63.2
Arkansas	1,681	1,675	57.6	51.7
California	1,962	1,954	40.0	45.5
Colorado	1,901	1,792	41.2	44.6
Connecticut	265	250	53.6	56.8
Delaware	363	371	38.3	28.6
Florida	583	558	44.1	40.1
Georgia	1,381	1,345	47.6	45.7
Idaho	1,864	1,778	44.8	49.6
Illinois	2,594	2,631	51.8	39.6
Indiana	2,346	2,303	45.7	41.0
Iowa	2,690	2,650	49.3	38.4
Kansas	3,761	3,702	36.0	31.9
Kentucky	1,520	1,481	53.4	55.4
Louisiana	943	952	62.0	54.9
Maine	393	384	59.5	53.9
Maryland	990	959	48.2	48.5
Massachusetts	295	286	57.6	64.0
Michigan	1,822	1,732	54.8	46.1
Minnesota	2,861	2,915	46.9	35.5
Mississippi	1,332	1,249	59.3	56.9
Missouri	3,226	3,113	43.8	38.0
Montana	2,277	2,284	43.7	44.7
Nebraska	3,522	3,407	41.4	33.9
Nevada	193	189	40.4	52.9
New Hampshire	201	184	58.2	54.3
New Jersey	389	387	52.7	52.5
New Mexico	532	528	44.4	52.3
New York	1,204	1,196	52.7	47.1
North Carolina	1,666	1,659	51.7	54.0
North Dakota	3,173	3,209	39.1	38.8
Ohio	1,787	1,762	53.9	47.8
Oklahoma	2,251	2,310	56.8	54.0
Oregon	1,134	1,088	47.2	49.4
Pennsylvania	1,522	1,453	51.2	49.1
Rhode Island	53	57	56.6	45.6
South Carolina	860	867	61.0	53.7
South Dakota	2,794	2,790	41.8	37.1
Tennessee	1,250	1,267	55.5	54.3
Texas	4,490	4,513	50.4	45.5
Utah	762	786	68.0	70.0
Vermont	492	469	63.2	57.8
Virginia	1,346	1,286	54.1	44.0
Washington	1,708	1,617	35.6	42.2
West Virginia	479	430	73.3	81.9
Wisconsin	1,995	2,025	52.0	46.2
Wyoming	831	856	52.8	55.4
United States	72,885	71,845	48.4	44.9

June Agricultural Survey Sample Size and Response Rate - States and United States: 2023 and 2024

State	Sample Size		Response Rate	
	2023 (number)	2024 (number)	2023 (percent)	2024 (percent)
Alabama	1,045	1,028	52.7	54.3
Alaska	80	79	55.0	60.8
Arizona	259	265	64.1	63.8
Arkansas	1,503	1,527	43.4	43.4
California	1,660	1,565	39.1	42.5
Colorado	1,622	1,635	37.8	38.3
Connecticut	87	87	37.9	36.8
Delaware	294	324	33.3	28.7
Florida	386	395	42.7	42.3
Georgia	1,445	1,425	38.8	41.1
Idaho	1,583	1,564	41.2	44.2
Illinois	2,207	2,224	39.1	31.1
Indiana	1,920	1,898	33.7	32.7
Iowa	2,123	2,097	38.0	39.2
Kansas	3,908	4,023	28.6	27.3
Kentucky	1,639	1,629	44.0	51.7
Louisiana	971	1,008	51.3	44.7
Maine	235	249	51.1	49.4
Maryland	829	840	41.3	44.9
Massachusetts	88	88	46.6	50.0
Michigan	1,690	1,683	36.6	37.1
Minnesota	2,367	2,363	40.3	36.1
Mississippi	1,177	1,162	47.6	46.5
Missouri	2,547	2,562	37.5	30.5
Montana	1,760	1,781	40.5	42.8
Nebraska	3,091	3,066	29.1	36.2
Nevada	188	173	47.3	52.0
New Hampshire	60	59	56.7	49.2
New Jersey	363	343	54.8	39.4
New Mexico	541	551	41.8	39.4
New York	1,109	1,132	45.0	41.8
North Carolina	1,422	1,427	46.3	47.0
North Dakota	2,660	2,736	26.2	34.2
Ohio	1,522	1,539	38.0	39.4
Oklahoma	2,113	2,105	50.4	53.1
Oregon	920	868	45.0	49.8
Pennsylvania	1,430	1,357	41.3	43.2
Rhode Island	19	19	10.5	36.8
South Carolina	873	839	49.6	53.9
South Dakota	2,590	2,623	28.8	33.6
Tennessee	1,244	1,271	51.5	40.1
Texas	3,564	3,749	46.3	45.7
Utah	576	572	57.5	48.3
Vermont	179	185	58.1	44.3
Virginia	1,203	1,247	43.9	35.7
Washington	1,484	1,446	38.1	40.0
West Virginia	370	365	62.2	51.8
Wisconsin	2,026	2,048	45.6	37.7
Wyoming	764	756	50.8	55.0
United States	63,736	63,977	40.2	40.1

**September Agricultural Survey Sample Size and Response Rate - States and United States:
2023 and 2024**

State	Sample Size		Response Rate	
	2023 (number)	2024 (number)	2023 (percent)	2024 (percent)
Alabama	717	715	60.7	58.6
Alaska	148	150	61.5	54.0
Arizona	298	323	72.1	71.5
Arkansas	1,274	1,216	54.4	59.5
California	1,394	1,334	45.1	47.5
Colorado	1,084	1,065	41.7	52.7
Connecticut	(NA)	(NA)	(NA)	(NA)
Delaware	231	228	42.9	25.4
Florida	407	422	47.7	40.5
Georgia	1,123	1,091	46.8	50.9
Idaho	1,399	1,319	50.2	48.8
Illinois	2,332	2,312	46.0	42.9
Indiana	1,960	2,005	46.2	43.7
Iowa	2,642	2,585	41.5	47.5
Kansas	2,531	2,597	39.1	39.0
Kentucky	1,127	1,199	58.4	53.5
Louisiana	921	836	61.9	56.7
Maine	216	218	57.9	49.5
Maryland	687	677	53.4	40.2
Massachusetts	(NA)	(NA)	(NA)	(NA)
Michigan	1,390	1,410	48.9	49.6
Minnesota	2,105	2,166	40.3	42.1
Mississippi	1,159	1,089	61.3	59.5
Missouri	2,426	2,354	40.7	37.9
Montana	1,847	1,822	46.0	45.6
Nebraska	2,311	2,319	41.4	43.8
Nevada	(NA)	(NA)	(NA)	(NA)
New Hampshire	(NA)	(NA)	(NA)	(NA)
New Jersey	330	318	53.0	53.8
New Mexico	530	530	52.1	49.6
New York	962	1,007	49.4	46.1
North Carolina	1,152	1,126	56.9	60.7
North Dakota	2,513	2,543	40.0	35.5
Ohio	1,374	1,462	47.1	49.8
Oklahoma	2,258	2,114	56.2	58.8
Oregon	758	749	50.0	52.2
Pennsylvania	1,165	1,329	57.1	55.2
Rhode Island	(NA)	(NA)	(NA)	(NA)
South Carolina	855	874	60.8	64.8
South Dakota	2,294	2,294	38.9	43.3
Tennessee	1,009	998	58.5	52.7
Texas	3,291	3,323	49.7	56.8
Utah	594	605	73.6	68.4
Vermont	(NA)	(NA)	(NA)	(NA)
Virginia	899	961	55.6	52.1
Washington	1,292	1,235	42.5	40.8
West Virginia	311	339	78.8	78.2
Wisconsin	2,063	2,049	43.0	54.9
Wyoming	508	470	49.8	57.4
United States	55,887	55,778	48.2	49.0

(NA) Not available.

**December Agricultural Survey Sample Size and Response Rate - States and United States:
2023 and 2024**

State	Sample Size		Response Rate	
	2023 (number)	2024 (number)	2023 (percent)	2024 (percent)
Alabama	954	969	66.9	63.0
Alaska	170	170	62.9	66.5
Arizona	385	395	71.4	69.1
Arkansas	1,812	1,786	56.2	57.2
California	2,069	2,095	50.1	48.1
Colorado	1,508	1,538	44.4	46.5
Connecticut	239	242	41.0	47.5
Delaware	371	387	32.6	38.2
Florida	703	763	45.4	42.5
Georgia	1,623	1,619	43.2	42.4
Idaho	1,695	1,657	48.0	45.8
Illinois	2,619	2,644	42.9	42.0
Indiana	2,464	2,547	41.2	45.7
Iowa	2,896	2,893	40.0	42.5
Kansas	2,993	3,018	33.6	35.4
Kentucky	1,569	1,623	55.6	52.9
Louisiana	1,316	1,352	61.9	55.5
Maine	348	361	55.2	59.6
Maryland	936	982	44.0	45.1
Massachusetts	253	251	68.8	66.5
Michigan	1,725	1,751	46.0	50.8
Minnesota	2,687	2,798	35.5	38.8
Mississippi	1,428	1,434	58.2	51.7
Missouri	3,241	3,371	39.1	37.6
Montana	2,127	2,105	47.9	45.9
Nebraska	3,205	3,270	37.0	36.1
Nevada	166	192	53.0	46.4
New Hampshire	174	170	52.3	64.7
New Jersey	477	500	45.9	41.0
New Mexico	635	689	51.3	48.6
New York	1,072	1,118	39.5	43.3
North Carolina	1,776	1,783	55.7	58.3
North Dakota	3,083	3,092	38.9	26.6
Ohio	1,739	1,810	45.8	42.9
Oklahoma	2,540	2,541	50.1	54.9
Oregon	845	880	52.0	47.7
Pennsylvania	1,445	1,438	44.6	47.5
Rhode Island	58	54	39.7	42.6
South Carolina	983	998	58.6	61.0
South Dakota	2,587	2,607	31.9	36.9
Tennessee	1,452	1,471	52.4	50.6
Texas	4,523	4,455	43.8	49.6
Utah	752	741	77.3	74.6
Vermont	477	488	48.6	41.0
Virginia	1,288	1,356	50.5	50.7
Washington	1,541	1,565	45.9	42.3
West Virginia	500	530	76.4	76.6
Wisconsin	2,170	2,175	41.1	47.5
Wyoming	620	595	56.8	56.6
United States	72,239	73,269	45.8	46.0

March Off Farm Grain Stocks Survey Sample Size and Response Rate - States and United States: 2023 and 2024

State	Sample Size		Response Rate	
	2023 (number)	2024 (number)	2023 (percent)	2024 (percent)
Alabama	47	44	83.0	70.5
Alaska	(NA)	(NA)	(NA)	(NA)
Arizona	16	16	37.5	31.3
Arkansas	46	44	84.8	86.4
California	52	52	63.5	69.2
Colorado	48	45	54.2	55.6
Connecticut	(NA)	(NA)	(NA)	(NA)
Delaware	16	14	68.8	71.4
Florida	13	11	84.6	90.9
Georgia	84	77	86.9	83.1
Idaho	39	41	79.5	73.2
Illinois	271	259	72.3	73.7
Indiana	164	156	39.6	55.1
Iowa	277	272	90.3	82.0
Kansas	147	138	78.2	76.1
Kentucky	135	144	86.7	82.6
Louisiana	16	15	93.8	93.3
Maine	(NA)	(NA)	(NA)	(NA)
Maryland	31	26	54.8	46.2
Massachusetts	(NA)	(NA)	(NA)	(NA)
Michigan	101	100	91.1	98.0
Minnesota	279	265	58.8	53.6
Mississippi	29	29	72.4	82.8
Missouri	161	161	62.7	62.1
Montana	74	71	59.5	49.3
Nebraska	124	118	81.5	75.4
Nevada	(NA)	(NA)	(NA)	(NA)
New Hampshire ¹	13	13	46.2	46.2
New Jersey	4	4	25.0	75.0
New Mexico	6	6	50.0	33.3
New York	32	31	28.1	41.9
North Carolina	104	110	82.7	76.4
North Dakota	183	173	71.6	64.7
Ohio	144	144	50.0	64.6
Oklahoma	47	48	59.6	72.9
Oregon	29	30	69.0	60.0
Pennsylvania	102	96	59.8	59.4
Rhode Island	(NA)	(NA)	(NA)	(NA)
South Carolina	35	34	80.0	76.5
South Dakota	110	107	93.6	90.7
Tennessee	110	105	87.3	87.6
Texas	163	157	74.2	57.3
Utah	21	19	71.4	52.6
Vermont	(NA)	(NA)	(NA)	(NA)
Virginia	63	63	88.9	74.6
Washington	40	41	67.5	61.0
West Virginia	8	9	75.0	66.7
Wisconsin	147	140	61.9	59.3
Wyoming	14	13	57.1	61.5
United States	3,545	3,441	71.5	69.6

(NA) Not available.

¹ Includes data for Maine, Massachusetts, New Hampshire, and Vermont.

June Off Farm Grain Stocks Survey Sample Size and Response Rate - States and United States: 2023 and 2024

State	Sample Size		Response Rate	
	2023 (number)	2024 (number)	2023 (percent)	2024 (percent)
Alabama	45	45	88.9	80.0
Alaska	(NA)	(NA)	(NA)	(NA)
Arizona	15	15	46.7	33.3
Arkansas	43	44	86.0	81.8
California	54	53	40.7	47.2
Colorado	46	48	47.8	37.5
Connecticut	(NA)	(NA)	(NA)	(NA)
Delaware	15	13	60.0	84.6
Florida	11	13	90.9	100.0
Georgia	77	85	84.4	90.6
Idaho	44	45	59.1	71.1
Illinois	270	265	74.4	74.7
Indiana	165	152	44.2	61.8
Iowa	277	271	83.8	86.0
Kansas	146	138	69.2	66.7
Kentucky	133	143	86.5	86.7
Louisiana	15	15	93.3	93.3
Maine	(NA)	(NA)	(NA)	(NA)
Maryland	30	25	73.3	56.0
Massachusetts	(NA)	(NA)	(NA)	(NA)
Michigan	101	101	91.1	97.0
Minnesota	277	265	55.6	49.4
Mississippi	29	29	72.4	69.0
Missouri	161	158	61.5	61.4
Montana	79	72	40.5	51.4
Nebraska	122	118	78.7	77.1
Nevada	(NA)	(NA)	(NA)	(NA)
New Hampshire ¹	13	13	30.8	53.8
New Jersey	4	4	75.0	50.0
New Mexico	4	4	50.0	50.0
New York	32	30	43.8	43.3
North Carolina	103	106	80.6	82.1
North Dakota	179	174	68.7	67.8
Ohio	146	141	47.3	68.1
Oklahoma	49	49	61.2	71.4
Oregon	29	30	65.5	60.0
Pennsylvania	101	97	58.4	52.6
Rhode Island	(NA)	(NA)	(NA)	(NA)
South Carolina	34	35	82.4	91.4
South Dakota	109	106	91.7	88.7
Tennessee	109	101	85.3	85.1
Texas	167	164	70.1	60.4
Utah	22	20	54.5	50.0
Vermont	(NA)	(NA)	(NA)	(NA)
Virginia	63	63	88.9	85.7
Washington	45	45	51.1	71.1
West Virginia	8	9	87.5	88.9
Wisconsin	145	144	66.9	51.4
Wyoming	14	13	42.9	53.8
United States	3,531	3,461	69.0	70.0

(NA) Not available.

¹ Includes data for Maine, Massachusetts, New Hampshire, and Vermont.

September Off Farm Grain Stocks Survey Sample Size and Response Rate - States and United States: 2023 and 2024

State	Sample Size		Response Rate	
	2023 (number)	2024 (number)	2023 (percent)	2024 (percent)
Alabama	44	46	86.4	82.6
Alaska	(NA)	(NA)	(NA)	(NA)
Arizona	15	16	53.3	56.3
Arkansas	44	44	88.6	81.8
California	53	51	56.6	58.8
Colorado	47	46	53.2	43.5
Connecticut	(NA)	(NA)	(NA)	(NA)
Delaware	15	14	80.0	57.1
Florida	11	13	81.8	92.3
Georgia	76	81	86.8	79.0
Idaho	41	40	70.7	72.5
Illinois	265	258	70.6	74.8
Indiana	163	150	43.6	58.0
Iowa	273	258	86.1	85.3
Kansas	146	138	61.0	70.3
Kentucky	139	141	87.1	85.8
Louisiana	15	14	93.3	92.9
Maine	(NA)	(NA)	(NA)	(NA)
Maryland	31	30	58.1	60.0
Massachusetts	(NA)	(NA)	(NA)	(NA)
Michigan	100	101	88.0	98.0
Minnesota	266	266	62.0	50.4
Mississippi	29	29	79.3	82.8
Missouri	161	160	58.4	65.6
Montana	72	71	59.7	46.5
Nebraska	124	118	65.3	74.6
Nevada	(NA)	(NA)	(NA)	(NA)
New Hampshire ¹	13	13	23.1	30.8
New Jersey	4	4	75.0	50.0
New Mexico	6	5	50.0	40.0
New York	31	30	38.7	43.3
North Carolina	102	107	85.3	87.9
North Dakota	180	170	74.4	68.8
Ohio	142	137	50.0	67.2
Oklahoma	48	46	62.5	71.7
Oregon	30	29	63.3	55.2
Pennsylvania	102	93	60.8	59.1
Rhode Island	(NA)	(NA)	(NA)	(NA)
South Carolina	34	35	82.4	82.9
South Dakota	112	106	88.4	93.4
Tennessee	104	98	84.6	90.8
Texas	165	150	69.1	64.0
Utah	20	20	55.0	55.0
Vermont	(NA)	(NA)	(NA)	(NA)
Virginia	64	72	79.7	83.3
Washington	41	41	63.4	63.4
West Virginia	9	9	88.9	77.8
Wisconsin	142	144	64.1	54.9
Wyoming	12	13	66.7	53.8
United States	3,491	3,407	69.7	70.7

(NA) Not available.

¹ Includes data for Maine, Massachusetts, New Hampshire, and Vermont.

December Off Farm Grain Stocks Survey Sample Size and Response Rate - States and United States: 2023 and 2024

State	Sample Size		Response Rate	
	2023 (number)	2024 (number)	2023 (percent)	2024 (percent)
Alabama	46	44	73.9	68.2
Alaska	(NA)	(NA)	(NA)	(NA)
Arizona	16	14	43.8	78.6
Arkansas	43	46	88.4	93.5
California	52	52	48.1	57.7
Colorado	46	46	52.2	60.9
Connecticut	(NA)	(NA)	(NA)	(NA)
Delaware	15	14	26.7	42.9
Florida	13	12	84.6	100.0
Georgia	86	82	84.9	82.9
Idaho	45	44	71.1	63.6
Illinois	265	260	72.5	73.5
Indiana	163	147	47.2	60.5
Iowa	270	252	84.4	85.7
Kansas	143	136	73.4	74.3
Kentucky	145	143	91.0	83.2
Louisiana	15	19	100.0	94.7
Maine	(NA)	(NA)	(NA)	(NA)
Maryland	31	31	48.4	35.5
Massachusetts	(NA)	(NA)	(NA)	(NA)
Michigan	103	104	88.3	77.9
Minnesota	264	262	62.5	48.5
Mississippi	29	29	69.0	69.0
Missouri	161	156	61.5	63.5
Montana	72	73	58.3	64.4
Nebraska	118	118	74.6	74.6
Nevada	(NA)	(NA)	(NA)	(NA)
New Hampshire ¹	13	13	38.5	23.1
New Jersey	4	4	75.0	100.0
New Mexico	5	5	40.0	60.0
New York	31	25	38.7	48.0
North Carolina	103	113	80.6	79.6
North Dakota	177	174	68.4	63.2
Ohio	144	135	47.9	65.9
Oklahoma	45	43	86.7	79.1
Oregon	30	28	53.3	39.3
Pennsylvania	98	92	54.1	71.7
Rhode Island	(NA)	(NA)	(NA)	(NA)
South Carolina	35	34	68.6	79.4
South Dakota	108	107	93.5	90.7
Tennessee	110	108	90.0	88.9
Texas	164	138	61.6	72.5
Utah	20	19	55.0	52.6
Vermont	(NA)	(NA)	(NA)	(NA)
Virginia	64	72	82.8	84.7
Washington	45	44	66.7	63.6
West Virginia	9	9	66.7	88.9
Wisconsin	147	141	59.9	53.2
Wyoming	13	10	69.2	80.0
United States	3,506	3,398	69.7	70.5

(NA) Not available.

¹ Includes data for Maine, Massachusetts, New Hampshire, and Vermont.

Quality Metrics from the Agricultural Survey by Crop and Date - United States: 2023 and 2024

Date	Weighted Item Response Rate		Coefficient of Variation	
	2023	2024	2023	2024
	(percent)	(percent)	(percent)	(percent)
Corn Stocks				
March 1	42.0	34.4	2.0	2.2
June 1	31.0	30.6	2.6	2.9
September 1	28.3	33.9	3.0	3.5
December 1	37.6	37.3	1.7	1.7
Soybeans Stocks				
March 1	41.1	35.4	2.5	3.5
June 1	30.3	29.9	4.1	4.0
September 1	29.5	32.1	5.3	5.2
December 1	37.3	37.8	2.0	1.8
All Wheat Stocks				
March 1	33.3	31.5	2.7	2.7
June 1	22.3	31.6	4.1	4.5
September 1	33.8	32.5	2.5	2.7
December 1	34.9	30.3	3.6	2.6

Quality Metrics from Off Farm Grain Stocks Survey by Crop and Date - United States: 2023 and 2024

Date	Weighted Item Response Rate		Coefficient of Variation	
	2023 (percent)	2024 (percent)	2023 (percent)	2024 (percent)
Corn Stocks				
March 1	82.8	77.0	0.2	0.2
June 1	80.6	79.4	0.2	0.4
September 1	78.3	77.8	0.4	0.4
December 1	81.2	80.3	0.2	0.3
Soybeans Stocks				
March 1	86.0	80.2	0.2	0.2
June 1	80.0	81.7	0.3	0.4
September 1	80.8	79.2	0.5	0.3
December 1	83.7	82.3	0.2	0.4
All Wheat Stocks				
March 1	83.1	75.8	0.5	0.9
June 1	75.8	74.2	0.8	0.7
September 1	73.4	73.7	0.3	0.5
December 1	78.4	75.3	0.4	0.3

Information Contacts

Process	Unit	Telephone	Email
Estimation	Crops Branch	(202) 720-2127	HQ_SD_CB@usda.gov
Data Collection	Survey Administration Branch	(202) 690-4847	HQ_CSD_SAB@usda.gov
Questionnaires	Data Collection Branch	(202) 720-6201	HQ_CSD_DCB@usda.gov
Sampling and Editing	Sampling, Editing, and Imputation Methodology Branch	(202) 690-8141	HQ_CSD_SB@usda.gov
Analysis and Estimators	Summary, Estimation, and Disclosure Methodology Branch	(202) 690-8141	HQ_SD_SMB@usda.gov
Dissemination	Data Dissemination Office	(202) 720-3869	HQSDOD@usda.gov
Media Contact and Webmaster	Public Affairs Office	(202) 720-2639	HQOAPAO@usda.gov

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