



Farm Labor Methodology and Quality Measures

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Agricultural (Farm) Labor Survey Methodology

Special Note

Beginning with this report, the coefficients of variation associated with model-based estimates are published. The coefficients of variation associated with the survey indications alone, were previously published.

Pandemic-related restrictions initially implemented for the first and second survey quarters (January and April) of year 2020, continued through data collection for the first and second survey quarters of year 2021. All affected processes are discussed in the respective sections, below.

Scope and Purpose: The NASS Agricultural (Farm) Labor Survey provides the basis for employment and wage estimates for all workers directly hired by United States farms and ranches (excluding Alaska), for each of four quarterly reference weeks. Selected annual average estimates are summarized from the associated quarterly estimates.

The employment and wage estimates published support USDA and Department of Labor programs, and are used by additional federal, state, and local government agencies, educational institutions, farm organizations, and private sector employers of farm labor. The Agricultural Labor Survey was conducted in cooperation with the Department of Labor from year 2012 through the temporary suspension of the program in September 2020.

The NASS Agricultural Labor Survey is typically conducted semi-annually in April and October, in all surveyed states except California. For California, these state-level data are collected on a quarterly basis, as part of the California Employment Development Department (EDD) monthly labor program.

During the NASS Agricultural Labor Survey April data collection, data for both January and April reference weeks are collected. During the October data collection, data for both July and October reference weeks are collected. The quarterly reference week is the Sunday to Saturday period which includes the 12th day of the month.

Estimates published include number of hired workers during each quarterly reference week, the average hours worked, and average wage rates by type of worker. Estimates are published for the United States, each of 15 multi-state labor regions, and the single-state regions of California, Florida, and Hawaii.

Survey Timeline: Data collection typically begins the week following the April or October reference week and extends approximately one week beyond the end of the month, for all surveyed states except California. In California, EDD data collection begins shortly after the reference week in each of the four surveyed quarters and typically extends three to four weeks beyond the end of the month. NASS Regional Field Offices (RFOs) have about five business days following the NASS semi-annual data collection period, to complete editing and analysis, execute the summary, and evaluate the survey results at the state level for each member state. The Agricultural Statistics Board performs a national review, reconciles state-level evaluations to regional and national estimates, and prepares the official estimates for release in about eight to ten business days. Official Farm Labor estimates are typically published in May (for the January and April quarters) and November (for the July and October quarters, and annual average estimates).

Sampling: The target population for the Agricultural Labor Survey program is all farms and ranches with \$1,000 or more in agricultural sales (or potential sales), excluding Alaska farms. 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 agricultural establishments. A profile, called control data, of each establishment is maintained on the list frame to allow NASS to define list frame sampling populations for specific surveys and to employ efficient sampling designs. The primary control datum for farm labor is the peak number of workers value, the most recently reported annual peak number of hired workers for each record. List frame records with positive peak number of worker control data are included in the list frame farm labor population. The California list frame labor population defined by positive peak number of workers alone is sufficiently complete, due to the collaboration with the California EDD. For all other states, records without peak number of worker control data that have a calculated farm value of sales of at least \$10,000, many of which are expected to employ agricultural workers, are also part of the list frame farm labor population. In total, the list frame farm labor population includes approximately 1.1 million United States farms and ranches.

The area frame contains all land in the United States (except Alaska) and is therefore complete for the Agricultural Labor Survey program. For all states, land is stratified according to intensity of agriculture using satellite imagery. The land in each stratum is divided into segments of roughly one square mile. Segments are optimally allocated and sampled to effectively measure crops and livestock. The sampled segments are fully enumerated each June during the NASS June Area Survey, in all states except Hawaii. All farms and ranches found operating tracts in enumerated segments are checked to see if they are included in the list frame farm labor population. The farms and ranches that are not included in the list frame labor population, called nonoverlap tracts, are eligible for the farm labor nonoverlap sample.

The farm labor list frame sample is selected using a hierarchical stratified sampling design with strata defined by peak number of farm workers or calculated farm value of sales. The sample is a panel sample and is designed to achieve a United States level coefficient of variation of four percent of the point estimate for all hired workers and one percent of the ratio estimate for wage rates of all workers. The United States list frame sample size for the Agricultural Labor Survey in recent years has been approximately 12,500. Beginning in April 2019, an increased list sample size of over 30,000 units was used to accommodate program expansion; the April 2021 sample included over 35,000 units.

The farm labor area frame nonoverlap sample is selected using a stratified sample design based on data collected during the annual NASS June Area Survey. An area frame nonoverlap sample is selected for each surveyed state except California and Hawaii. The California sample does not include a nonoverlap portion because the list frame is assumed to be complete. For Hawaii, the area frame is excluded from sampling because this frame is not updated on an annual basis. The total farm labor area frame nonoverlap sample, which includes the remaining surveyed states, consists of approximately 1,500 sampling units.

Each farm and ranch in this combined sample is assigned an initial sampling weight. For each farm or ranch sampled from the list frame, this weight is the inverse of the sampling fraction for the state level stratum to which the sampled farm or ranch is assigned. For example, if a stratum has 1,000 farms in the population and 200 are sampled for this survey, each sampled farm has a weight of five. In other words, each sampled farm represents five farms. The nonoverlap tracts sampled to measure the labor not accounted for by the list have a weight determined by adjusting their original area frame weight by any second stage sampling weight.

Data Collection: Data collection proceeds with utilization of NASS data collection instruments and follow-up procedures, in all surveyed states except California. In California, the California EDD conducts data collection utilizing EDD-specific instruments and follow-up procedures which are similar to NASS procedures.

Data Collection for All States Except California

For consistency across modes, the paper version is considered the master questionnaire and the Computer Assisted Telephone Interview (CATI) and web reporting 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 instruments are reviewed including the CATI and web instruments, and the web-supported Computer Assisted Personal Interview (CAPI) instrument.

All federal data collections require approval by the Office of Management and Budget (OMB). NASS must document the public need for the data, show the design applies sound statistical practice, ensure the data do not already exist elsewhere, and that the public is not excessively burdened. The Agricultural Labor Survey questionnaire 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 only be used for statistical purposes in combination with other producers, and a statement saying that response to the survey is voluntary and not required by law.

In addition to asking the specific farm labor items, 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.

During each semi-annual data collection period, sampled farms and ranches receive a pre-survey letter explaining the survey and that they will be contacted for survey purposes only. The letter provides a paper copy of the questionnaire to allow respondents to respond by mail or to prepare in advance for a follow-up interview and also provides a pass code they can use to complete the survey on the internet. All questionnaires completed on paper are returned to the NASS National Operations Center where they are visually reviewed and key entered. Typically, all modes of data collection are utilized for the Agricultural Labor Survey. While mail is the least costly mode of collection, the short data collection period, combined with the postal delivery window, limit its effectiveness. In most years, most of the data are collected by telephone follow-up interviews from NASS Data Collection Centers, using CATI. Personal interviews, conducted via CAPI, are also typically available for large operations or those with special handling arrangements. Data collection is coordinated for farms sampled for multiple on-going NASS surveys.

April 2021 Data Collection: Pandemic-related social distancing and decentralization policies continued through early year 2021. Follow-up was conducted by telephone interview exclusively, by residence-based enumerators associated with the respective NASS RFO. Enumeration from the centralized NASS Data Collection Centers, and all in-person enumeration, was temporarily suspended.

Data Collection for California

The California EDD utilizes a mail out phase with follow-up similar to the NASS procedure. All sampling units from the NASS California labor sample receive an EDD labor questionnaire which includes the NASS Agricultural Labor Survey questions as well as additional content. In recent years, telephone follow-up has been conducted by the associated NASS Data Collection Center.

Because the EDD program is monthly, collection of California labor data begins shortly after each respective quarterly reference week, and complete datasets are received at NASS by the following month. The EDD data collection period typically extends two to three weeks beyond the concurrent NASS April and October data collection periods. For this reason, the final California datasets for the April and October reference weeks are not fully processed until the following NASS semi-annual survey period.

Throughout the EDD data collection period, electronic files containing labor data are regularly transmitted securely to the NASS Pacific RFO in California, including that collected in the NASS Data Collection Center. These files are made available to the NASS editing and analysis instruments, so that all subsequent data handling proceeds according to the NASS data analysis and estimation program.

April 2021 Data Collection for California: Year 2021 data collection proceeded mostly as in previous years, while observing the widely mandated social distancing and decentralization policy. Mailing and telephone follow-up were conducted by on-site California EDD staff deemed essential, and decentralized NASS staff and operations.

Survey Edit: As survey data are collected and captured, data are edited for consistency and reasonableness using automated systems. Reported data are edited as a batch of data when first captured. 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 or not 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 Agricultural Labor Survey data are processed and analyzed with a standard interactive data analysis tool which displays data for all reports by item. The tool provides 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 labor items are revealed by the analysis tool. RFO and NASS Headquarters (HQ) staff review such relationships to determine if they are correct. Data found to be in error are corrected, while accepted data are retained.

Nonsampling Error: 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.

Nonresponse Adjustment: Response to the Agricultural Labor Survey 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 farm labor are to be made. Sample nonrespondents are accounted for by adjusting the weights of the respondents; specifically, the initial sampling weight is revised to account for actual response by stratum. To continue the previous example, if a list frame stratum has 1,000 farms in the population and 200 are sampled for this survey, the initial sampling weight is five. After 180 of the original 200 respond, the weights of the 180 will be “adjusted” to 1,000 divided by 180, or 5.56. Each response accounts for 5.56 farms, a slight increase from the initial five farms. This global weight adjustment occurs by each assigned stratum per state, including both the bounded strata as well as the unbounded stratum, as all strata represent homogeneous groupings of similar sized farms.

Calibration: After nonresponse-adjusted weights are generated through initial summarization, a calibration adjustment is performed if necessary. Calibration is a weighting technique used to adjust the sampling weights on complete survey reports so that the summarized values of a set of benchmark variables more closely approximate a derived set of values for the population. The initial inputs to the calibration algorithm are the nonresponse-adjusted sampling weights. The calibration algorithm, in targeting a derived set of values, is used to mitigate both the effects of highly influential outliers, and the effects of survey nonresponse and disproportionate response across farm type and economic sales class.

Estimators: The Agricultural Labor Survey uses “reweighted” estimators to compute direct measures of hired farm workers. Reweighted estimators are essentially the product of non-response and calibration-based reweighting processes.

Each such point estimate, called a direct expansion, is calculated by multiplying each reported value by the final calibrated weight and first summing to stratum totals. A variance estimate is also computed at the stratum level. The nonoverlap tracts are treated as an additional stratum. Totals and variances are additive across strata.

Ratio estimates are also computed for many items. For example, wage rates are calculated as the ratio of total wages to total hours worked. Ratio estimators use the reweighted estimator described above for the numerator and denominator direct expansions. Both the numerator and denominator must be usable in order for a given record to be used in the ratio estimator.

Model-Based Estimators

Starting in 2020, model-based estimates of hired workers, average hours worked, average wage rates, and the associated sub-items are produced to support NASS estimation processes. Statistical models are mathematical equations that relate quantities of interest (in this case, number of workers, hours, and wage rates) to a set of important input factors. The

models used by NASS relate the direct expansions obtained from the current Agricultural Labor Survey to previous year, same quarter official estimates. This modeling approach improves the precision of the resulting estimates. In particular, estimates in publication cells derived from few reports become more precise than estimates derived from survey alone.

Outliers: Both RFO and HQ statisticians conduct a review of worker and wage outliers, identified through the interactive data analysis tool, to ensure the most accurate data and indications possible. The RFO statisticians review outliers for states within their regions and the HQ statistician examines outliers across all states. Many outliers trace back to unique situations that do not exist in the target population as much as the survey weight would indicate. In some cases, aging control data result in misstratification, and this misstratification can also give rise to outliers. The survey weight assigned to each outlier is subject to an additional adjustment during the calibration process where appropriate, before final summary estimates and model-based estimates are produced.

Estimation: The number of hired workers, average hours worked, average wage rate data, and all associated sub-items for each surveyed reference week are summarized from the dataset. Because identical data collection instruments are used for all states, as well as identical editing and analysis processes, state data can be summarized to regional and national survey point estimates. Similarly, these data are used to support state, regional, and national model-based estimates. For estimation purposes, survey point estimates are adopted as survey indications for all data items. The summary results provide multiple direct and ratio indications for each data series being estimated. The results also provide information used to assess the performance of the current survey and evaluate the quality of the survey indications. Currently, RFOs evaluate state level survey indications and submit state-specific comments for all member states to HQ. HQ executes the regional and United States level summaries, which utilize the same estimators and produce the same indications as the state level summaries. The associated model-based estimates are subsequently generated, using the summarized survey indications as input.

The estimation process is facilitated at all levels with a second interactive analysis tool, which selectively displays current and historic summary indications, model-based estimates, measures of indication and estimate quality, state level comments, and final estimates for all published data items. The instrument generates tables and charts of this database content, allowing statisticians to assess trends, evaluate current and historic relationships between summary indications, model-based estimates, and final estimates, and current and historic state level comments on local conditions and data assessment. Statisticians view and analyze all necessary database content through the instrument, to finalize the estimates. RFO statisticians review only data and analyses associated with their member states; HQ statisticians subsequently review all state, regional, and national data and analyses. All steps necessary to the coordination and confirmation of final estimates are accomplished through this data tool. Additionally, the annual average estimates are calculated using this data tool after all final quarterly estimates are established.

For the final step in the estimation process, NASS assembles a panel of statisticians to serve as the Agricultural Statistics Board (ASB) representatives for the Farm Labor program, which reviews the United States level, regional, and state level summary indications and model-based estimates and establishes all final, official estimates for each surveyed reference week. The ASB employs a modified “top-down” approach, adhering closely to the United States level survey indications while giving greater weight to state and regional level model-based estimates, in order to increase precision of all final estimates for hired workers, average hours worked, average wage rates, and associated sub-items. As part of the semi-annual process, the ASB also considers revised California data, and issues revisions of previously published California and United States level estimates where appropriate. Through examining survey indications and model-based estimates across states and regions, re-examining outliers and historic indications and estimates, and considering state level comments, the ASB is able to establish all final estimates according to both local conditions and regional and national conditions and trends. After all final quarterly estimates are established, the ASB verifies the annual average estimates for the annual (typically November) publication, which are summarized weighted averages of the final United States and regional level estimates for each of the four quarters.

Quality Metrics for the Agricultural (Farm) Labor Survey

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 in this document describe the performance data for the survey contributing to the publication. The accuracy of data products may be evaluated through sampling and nonsampling error. The measurement of error due to sampling in the current period is evaluated by the coefficient of variation for each estimated item. The multi-component nonsampling error can be difficult to quantify and measure, but response rates may offer a partial assessment.

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 sample that completed the survey. This calculation follows Guideline 3.2.2 of the Office of Management and Budget Standards and Guidelines for Statistical Surveys (Sept. 2006) and the American Association for Public Opinion Research (AAPOR) (2015). NASS surveys use the AAPOR Response Rate 2 (RR2) formula. In-scope records for the Agricultural Labor Survey include operations that did not have workers because labor in the reference week is transitory for smaller operations.

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.

Coefficient of Variation for Modeled Estimate of Gross Wage Rate by Type of Worker – United States

Reference week	Field (percent)	Livestock (percent)	Field and livestock combined (percent)
April 12-18, 2020	0.6	0.8	0.5
April 11-17, 2021	0.7	0.9	0.5
January 12-18, 2020	0.6	0.7	0.5
January 10-16, 2021	0.7	0.8	0.5

Farm Labor Sample Size and Response Rate – Regions and United States: April 12-18, 2020 and April 11-17, 2021

Regions	Sample size		Response rate	
	2020 (number)	2021 (number)	2020 (percent)	2021 (percent)
Northeast I	1,402	1,401	47.7	43.9
Northeast II	2,195	2,262	51.5	41.1
Appalachian I	1,329	1,292	61.6	54.2
Appalachian II	2,516	2,457	65.0	55.1
Southeast	1,402	1,367	52.9	57.5
Florida	1,018	990	49.2	50.5
Lake	1,778	1,851	52.3	43.4
Cornbelt I	3,569	3,555	51.6	40.9
Cornbelt II	2,458	2,438	56.0	37.2
Delta	2,665	2,660	58.8	54.1
Northern Plains	2,365	2,337	47.0	43.1
Southern Plains	3,426	3,495	63.3	49.6
Mountain I	1,633	1,622	50.0	43.7
Mountain II	1,303	1,340	47.0	51.3
Mountain III	1,214	1,147	53.5	40.1
Pacific	1,976	2,015	45.2	34.7
California	1,111	1,066	59.2	43.5
Hawaii	1,610	1,710	52.2	59.2
United States	34,970	35,005	54.2	46.5

Farm Labor Sample Size and Response Rate – Region and United States: January 12-18, 2020 and January 10-16, 2021

Regions	Sample size		Response rate	
	2020 (number)	2021 (number)	2020 (percent)	2021 (percent)
Northeast I	1,402	1,401	47.5	43.7
Northeast II	2,195	2,262	51.4	41.2
Appalachian I	1,329	1,292	61.6	54.0
Appalachian II	2,516	2,457	65.2	55.0
Southeast	1,402	1,367	52.6	57.5
Florida	1,018	990	49.2	50.4
Lake	1,778	1,851	52.8	43.3
Cornbelt I	3,569	3,555	52.0	41.5
Cornbelt II	2,458	2,438	56.3	37.1
Delta	2,665	2,660	58.6	53.4
Northern Plains	2,365	2,337	46.6	43.1
Southern Plains	3,426	3,495	63.2	49.4
Mountain I	1,633	1,622	49.9	43.7
Mountain II	1,303	1,340	47.0	51.6
Mountain III	1,214	1,147	53.3	40.0
Pacific	1,976	2,015	45.3	34.9
California	1,111	1,066	65.0	68.0
Hawaii	1,610	1,710	51.7	59.1
United States	34,970	35,005	54.4	47.2

Coefficient of Variation for Modeled Estimate of All Hired Workers and Gross Wage Rate – Region and United States: April 12-18, 2020 and April 11-17, 2021

Regions	All hired workers		Gross wage rate	
	2020 (percent)	2021 (percent)	2020 (percent)	2021 (percent)
Northeast I	6.2	5.8	2.1	1.1
Northeast II	5.4	6.5	1.8	2.0
Appalachian I	13.5	9.5	1.4	1.4
Appalachian II	7.9	8.7	1.7	2.4
Southeast	7.8	7.8	1.3	2.1
Florida	8.1	11.7	1.7	1.8
Lake	6.4	8.4	1.5	1.8
Cornbelt I	6.9	7.1	1.9	1.9
Cornbelt II	11.2	9.8	2.6	2.0
Delta	6.3	5.8	1.2	1.4
Northern Plains	7.0	7.5	1.7	1.5
Southern Plains	8.7	7.0	2.5	1.9
Mountain I	6.3	7.3	1.5	1.9
Mountain II	10.2	9.0	2.1	1.8
Mountain III	6.6	8.8	1.4	2.2
Pacific	11.8	7.5	1.3	1.2
California	4.0	5.7	1.1	1.3
Hawaii	9.4	8.3	2.1	3.0
United States	2.1	2.0	0.5	0.5

Coefficient of Variation for Modeled Estimate of Hired Workers and Gross Wage Rate by Standard Occupational Classification (SOC) System – United States: April 12-18, 2020 and April 11-17, 2021

Title	SOC code	All hired workers		Gross wage rate	
		2020 (percent)	2021 (percent)	2020 (percent)	2021 (percent)
Graders and sorters, agricultural products	(45-2041)	13.5	15.5	3.1	2.7
Agricultural equipment operators	(45-2091)	3.5	4.3	0.8	1.0
Farmworkers, crop, nursery, and greenhouse	(45-2092)	3.4	4.2	0.7	0.8
Farmworkers, farm, ranch, and aquacultural animals	(45-2093)	4.1	4.6	1.0	1.0
Agricultural workers, all other	(45-2099)	8.3	9.1	2.0	2.3
Packers and packagers, hand	(53-7064)	17.3	12.8	2.2	2.5
Farmers, ranchers, and other agricultural managers	(11-9013)	4.7	4.7	2.1	2.0
First-line supervisors of farming, fishing workers	(45-1011)	5.0	5.2	1.6	2.0

Coefficient of Variation for Modeled Estimate of All Hired Workers and Gross Wage Rate – Region and United States: January 12-18, 2020 and January 10-16, 2021

Regions	All hired workers		Gross wage rate	
	2020 (percent)	2021 (percent)	2020 (percent)	2021 (percent)
Northeast I	6.7	5.9	2.3	1.5
Northeast II	6.6	7.0	2.2	2.0
Appalachian I	11.8	9.6	1.9	1.7
Appalachian II	9.4	7.6	1.6	2.4
Southeast	7.5	8.4	1.5	1.5
Florida	7.5	13.1	1.6	2.4
Lake	6.7	8.7	1.7	1.8
Cornbelt I	7.5	6.5	1.8	1.7
Cornbelt II	11.9	10.7	2.2	2.6
Delta	7.9	6.1	1.7	1.5
Northern Plains	7.8	7.7	1.6	1.6
Southern Plains	8.7	6.1	1.7	2.2
Mountain I	6.4	7.9	1.9	2.2
Mountain II	11.0	8.3	2.5	1.9
Mountain III	6.6	9.5	1.3	1.7
Pacific	6.4	7.0	1.3	1.4
California	3.6	4.1	1.0	1.4
Hawaii	9.6	9.8	1.9	3.1
United States	2.0	2.2	0.5	0.6

Coefficient of Variation for Modeled Estimate of Hired Workers and Gross Wage Rate by Standard Occupational Classification (SOC) System – United States: January 12-18, 2020 and January 10-16, 2021

Title	SOC code	All hired workers		Gross wage rate	
		2020 (percent)	2021 (percent)	2020 (percent)	2021 (percent)
Graders and sorters, agricultural products	(45-2041)	11.5	12.9	1.8	4.0
Agricultural equipment operators	(45-2091)	4.1	4.6	1.0	1.0
Farmworkers, crop, nursery, and greenhouse	(45-2092)	3.2	4.0	0.7	0.9
Farmworkers, farm, ranch, and aquacultural animals	(45-2093)	4.1	4.0	0.9	1.0
Agricultural workers, all other	(45-2099)	9.2	10.9	1.8	2.3
Packers and packagers, hand	(53-7064)	12.9	10.0	1.9	2.2
Farmers, ranchers, and other agricultural managers	(11-9013)	4.2	4.9	1.7	2.0
First-line supervisors of farming, fishing workers	(45-1011)	5.0	9.6	1.5	3.1

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