

What Does the USDA-NASS Quarterly Hogs and Pigs Report Tell Us About Pig Production?

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The following is a summary of the webinar “Understanding USDA-NASS Hog Reports” given on March 26, 2021, as part of the Department of Agricultural Economics Extension Farm and Ranch Management team’s weekly webinar series. The webinar can be accessed at <https://farm.unl.edu/webinars> and an accompanying podcast can be accessed at <https://farm.unl.edu/nebraska-farmcast>. Both are provided free to the public.

USDA-NASS Overview

The USDA's National Agricultural Statistics Service (NASS) conducts hundreds of surveys every year and prepares reports covering virtually every aspect of U.S. agriculture. Production and supplies of food and fiber, prices paid and received by farmers, farm labor and wages, farm finances, chemical use and changes in the demographics of U.S. producers are only a few examples. NASS is committed to providing timely, accurate, and useful statistics in service to U.S. agriculture. Most surveys conducted by NASS are voluntary and all individual reports are kept confidential.

NASS Sampling Frames

NASS maintains two sources for identifying operators to be in a survey. The first source is called our list frame. Think of the list frame as one long spreadsheet with all known farmers and ranchers and their history of crops and livestock. NASS maintains a list like this for all surveys. We are constantly updating it to reflect changes in operations. However, no List Frame is ever complete, so we also use an area frame. In area frame sampling, NASS relies on satellite imagery, aerial photos and maps to divide the U.S. land area into small segments. Each segment is about one square mile, and each has unique and identifiable boundaries outlined on aerial photographs or maps. An area frame sample is a random selection of these segments drawn onto aerial photos. Field investigators called enumerators visit the segments and record information about agricultural activity within the segment boundaries. The area frame helps NASS measure the incompleteness of the NASS list frame. Names are drawn from both of these frames for most surveys, including the hogs survey.

Overview of Quarterly Hog and Pigs Report

Now let’s take a closer look at the Hogs and Pigs program, starting with sampling producers to be in the survey. All known hog producers are eligible to be selected and they are selected based on size groups – the larger operations are sampled more heavily than the smaller operations. Hog producers can respond to surveys through the mail, online or over the phone. Data analysis is conducted locally in the NASS field office before going through a second review by a team in NASS headquarters. At the U.S. level, a balance sheet approach is used along with current survey indications to formulate the current inventory estimates.

Revisions are part of the program and NASS publishes a reliability table with each Quarterly Hogs and Pigs Report.

Quarterly Report Differences

NASS publishes the Hogs and Pigs Report in December, March, June and September. Each December, NASS creates a new sample (group) of producers to be interviewed. This group is interviewed during the following quarters until a new sample is drawn the following December. All 50 states are sampled and published in the December report. However, for the following quarters of March, June and September, NASS only samples the 28 largest states and publishes a state-level number for the largest 16 states. The 28 largest states cover 99% of the total U.S. hog and pig inventory.

Putting USDA-NASS Data To Use

The U.S. government spends a considerable amount of money each year collecting voluntary data. This is accessible through online data portals free of charge to all individuals. For example, historical data for major agencies can be found in the following locations: most USDA-NASS reports can be found at <https://quickstats.nass.usda.gov/>; mandatory prices submitted to USDA-AMS can be found at <https://mpr.datamart.ams.usda.gov/>; and most historical data of other USDA-AMS reports can be found at https://mymarketnews.ams.usda.gov/public_data. Most producers can usually find the data they need to make informed decisions on one of these databases. While the historical raw data is available, it can be challenging to use the data to create either tables or figures to support a given management decision.

The FARM team at UNL recognizes this potential barrier and has worked to create a variety of web-based applications. These applications automatically download the data from the USDA agency and allow the producer to make a variety of custom historical, spatial and seasonal graphs/maps. These are available, free of charge, to the general public. Currently, there is an application that allows visualization of USDA-NASS's Quarterly Hogs and Pigs Report. This and other applications that visualize USDA livestock reports can be accessed at <https://farm.unl.edu/decision-tool-pages/livestock>.

Frequently Asked Questions

Q: More hogs are beginning to be raised under production contracts. How does the Quarterly Hog and Pigs Report account for and capture this changing market dynamic?

A: A production contract question is asked each quarter and is used to keep pace with a growing industry trend and primarily used to monitor the internal consistency of the report. USDA-NASS's goal is to only survey producers who have ownership of the pigs. The first question asked in every survey is whether they own the pigs. Thus, the survey only captures contractors rather than the contractee.

Q: How does NASS monitor and adjust to the historical performance of their estimates?

A: Every year, USDA-NASS reviews key components of every survey. This includes how questions are asked, strata definitions and how the industry is raising hogs. Needed adjustments can include anything from changing the number of individuals sampled within a stratum to creating an entirely new stratum. Major program adjustments are announced publicly (e.g., adding a new stratum) while smaller changes are kept internal (e.g., changing the wording to a survey question). For example, over the last five years, USDA-NASS farrowing estimates have generally been more conservative compared to the observed numbers. This led them to add a new stratum that captures sow operations and has increased the reliability of these estimates.

Q: What is the purpose of the revisions that USDA-NASS does in the Quarterly Hogs and Pig report?

A: One of the primary reasons is that comparisons are generally made year-over-year. The longer revisions are left unchanged, the more current numbers and estimates will deviate from the actual values. These deviations would then compromise the current “balance sheet” approach to verify numbers. By making these revisions, it allows the current numbers to be more meaningful moving forward.

Q: What are the most common questions USDA-NASS gets after publishing a report?

A: The most common question from industry participants is explaining the industry significance of the numbers USDA-NASS published. Since USDA-NASS’s mission is to report the most correct unbiased numbers rather than provide commentary on the numbers themselves, they defer these comments to others such as USDA-ERS, agricultural extension economists and/or the ag media. Another common question is what assumptions were used to arrive at the published numbers. While other countries, market segments, and statistical agencies may use models to arrive at estimates, the actual data comes from the hog producers themselves. This sampling rigor has made USDA-NASS the gold standard in how agricultural statistical agencies should gather and report numbers.

Q: What is the confidentiality requirement at USDA-NASS for the Quarterly Hog and Pigs Report?

A: USDA-NASS confidential rules are similar to USDA-AMS rules. These rules require at least three individuals where no market participant can make large percentage of the market. In instances where certain markets or regions do not meet these reporting rules, numbers will be withheld/suppressed to preserve the integrity of the survey responses. This ensures that producer trust remains as high as possible and does not provide an unfair advantage for any individuals in the market.

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