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H5N1 HPAI Continues to Spread in Dairy Herds

The U.S. Department of Agriculture (USDA), the Centers for Disease Control and Prevention (CDC), and the Food and Drug Administration (FDA) confirmed a strain (H5N1) of highly pathogenic avian influenza A virus (HPAI) in dairy herds in Texas and Kansas on March 25, 2024. Through December 2, 2024, USDA had confirmed H5N1 HPAI in 689 dairy herds in 15 states (**Table 1**). The United States has approximately 26,000 licensed dairy herds. The spread of H5N1 in dairy herds accelerated in October and November and has been concentrated in the West, with California the current epicenter of the outbreak, accounting for 446 newly affected herds in October and November (**Figure 1**).

Table 1. Total Dairy Herds with Confirmed HPAI

State	# Herds	State	# Herds
California	475	North Carolina	1
Colorado	64	Ohio	1
Idaho	35	Oklahoma	2
Iowa	13	South Dakota	7
Kansas	4	Texas	26
Michigan	29	Utah	13
Minnesota	9	Wyoming	1
New Mexico	9	**U.S. Total**	**689**

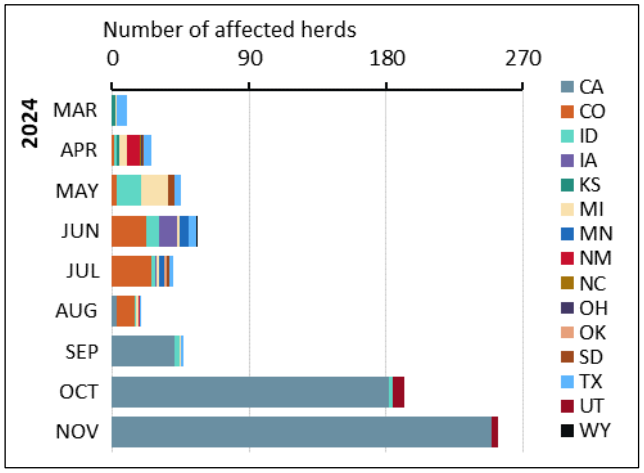
Source: USDA, Animal and Plant Health Inspection Service (APHIS), "HPAI Confirmed Cases in Livestock," 2024. Cases are confirmed through December 2, 2024. USDA reports number of herds infected, not number of dairy cows infected.

H5N1 HPAI in Dairy Herds

The H5N1 strain of HPAI is a highly contagious disease with a high mortality rate in poultry. Since February 2022, more than 111 million birds in 49 states have been culled to control the disease. USDA believes H5N1 was originally transmitted to dairy cattle through wild birds. Continuing investigations indicate H5N1 may be transmitted by cow movement between herds or cross contamination between cattle and poultry premises.

The mortality rate for dairy cows appears low according to the American Veterinary Medical Association. Symptoms of H5N1 in dairy cows include reduced feed consumption, sudden decline in milk production, thick and discolored milk, tacky feces or diarrhea, and fever. H5N1 more severely affects older dairy cows than calves, dry cows (not producing milk), and heifers. Some H5N1-infected cows may not recover milking productivity; these cows may be culled. However, unlike poultry flocks, entire dairy cow herds are not culled to control outbreaks.

Figure 1. Herds Infected with HPAI, by Month



Source: USDA, APHIS, "HPAI Confirmed Cases in Livestock," accessed December 2, 2024.

Human Cases

CDC has confirmed 57 human cases of human H5N1 infection. Farm workers were exposed to dairy cattle in 34 cases and to poultry in 21 cases, and 2 cases were of undetermined source. CDC continues its surveillance of HPAI, including testing specimens and monitoring people who have been infected or have been exposed to infected animals. CDC currently considers the human health risk of this H5N1 HPAI outbreak to be low and has not found any evidence of person-to-person transmission. However, the ability for influenza A viruses to adapt and transmit to other species causes concern among public health officials.

USDA Actions on HPAI

The Animal Health Protection Act (AHPA; 7 U.S.C. §§8301 et seq.) provides USDA's Animal and Plant Health Inspection Service (APHIS) authorities to manage animal health. USDA has restricted interstate dairy cow movement, provided financial resources to milk producers, and increased HPAI surveillance.

Federal Order on Animal Movement

One of USDA's first responses was to issue a federal order in April 2024 under AHPA to require lactating dairy cattle receive a negative influenza A test from an approved National Animal Health Network Laboratory before moving interstate. When moving groups of fewer than 30 lactating dairy cows, each cow must be tested. For larger groups, 30 of the cows must be tested. Tests must be done no more than 7 days prior to interstate movement. Cows moved interstate directly to a slaughter facility require a Certificate of Veterinary Inspection confirming their health. Laboratories and state veterinarians must report positive influenza A test results to APHIS.

Financial Assistance

At the end of May 2024, USDA announced the availability of $824 million in new funding for dairy producers affected by H5N1 HPAI. USDA supports milk producers by offsetting some costs related to HPAI. As of November 29, 2024, 366 dairy herds were signed up for financial assistance. Assistance includes up to $1,500 per premises for biosecurity enhancement; $100 per month for sample shipping; veterinary cost assistance of up to $2,000 for sample collection for unaffected herds and up to $10,000 for infected herds; $2,000 for personal protective equipment; and $8,000 for heat treatment of disposed milk. Milk producers also may enroll in the Emergency Assistance for Livestock, Honey Bees, and Farm-Raised Fish (ELAP) disaster program for milk losses. As of November 29, 2024, 150 dairy herds were enrolled in ELAP.

Vaccine Development

In July 2024, USDA's Center for Veterinary Biologics (CVB) announced its interest in HPAI vaccines for dairy cattle and other species. USDA stated it would commit $33.7 million to support Agricultural Research Service (ARS) HPAI vaccine research and development and $10 million in HPAI research funds, including vaccines through the National Institute of Food and Agriculture. In August, CVB announced it was accepting submissions for HPAI vaccine field studies.

Beef Sampling

Dairy cow beef is a key input into the U.S. ground beef supply because it is lean. It is combined with fed-cattle beef with higher fat content to create the lean ground beef U.S. consumers prefer. In May 2024, USDA reported that APHIS sampled retail packages of ground beef in states with affected herds and found no virus particles. ARS conducted a ground beef cooking study and found cooking at medium and well-done temperatures inactivated H5N1 viruses, and cooking at rare temperatures substantially inactivated the virus. USDA's Food Safety and Inspection Service (FSIS) initially sampled muscle beef from culled dairy cows condemned in slaughter facilities in April and May 2024. USDA reported 1 out of 109 samples tested positive for H5N1 particles. In September 2024, FSIS began testing dairy cow skeletal muscle samples for H5N1 as part of its regular residue sampling program. USDA reported no positive results on the 116 samples it tested through November 13, 2024.

Voluntary On-Farm Bulk Milk Testing

Milk from infected cows may contain the H5N1 virus. It is not currently known whether this virus can be transmitted to humans through drinking milk. On May 30, 2024, USDA launched the Dairy Herd Status Program to provide producers the option to participate in weekly bulk raw milk testing. After 3 consecutive weeks of negative test results, the herd would be granted "monitored unaffected" status and be able to move across state lines without additional testing requirements. As of November 29, 2024, 71 herds in 17 states were enrolled. Low program participation has prompted USDA to work with states to expand milk testing.

Expanded Bulk Milk Testing

On October 30, 2024, USDA announced it would work with state veterinarians to implement a regional bulk raw milk testing program. While details of the proposal are limited, USDA stated it would begin testing the bulk raw milk tanks of processors in states reporting infected herds. Using a "tiered strategy," USDA plans to continue testing, including at the farm level, until all herds in an area are determined to be free of the virus.

The virus can be detected in bulk raw milk samples up to two weeks before clinical signs appear in cattle. Early detection through bulk raw milk testing can give producers additional time to manage their herds to limit the spread of disease by, for example, isolating infected animals or implementing stricter biosecurity measures to avoid transmission to neighboring farms.

FDA Milk Safety

FDA is responsible for the safety of the U.S. milk supply. Based on retail sampling in April 2024 and in June and July 2024, FDA concluded that milk pasteurization inactivates the H5N1 virus, making the milk safe for consumption. Almost all commercial milk is produced under the Grade "A" Pasteurized Milk Ordinance (PMO) that regulates milk safety and sanitary conditions of milk facilities. According to the PMO, milk from sick cows must be discarded. FDA recommends that discarded milk be heat-treated to inactivate the virus before being dumped in a lagoon or spread as waste solid. If used to feed calves or other farm animals, such as farm cats, it should be heat-treated.

In October 2024, FDA asked states to participate in a voluntary study sampling raw milk at dairy processing facilities to analyze the prevalence of H5N1. It will be a double-blinded study for data collection, not for traceback.

While it is unknown if HPAI can be transmitted by raw milk consumption, FDA has long recommended that raw milk and raw milk dairy products not be sold or distributed for human consumption. On November 24, 2024, California public health officials detected H5N1 virus in raw milk sold at retail. The producer voluntarily recalled the milk.

Congressional Interest

The Avian Influenza Research and Response Act (H.R. 9182; 118th Congress) would provide training and assistance to milk producers and dairy workers to mitigate risks from biosecurity threats, such as from HPAI. Other issues of potential interest to Congress include whether the current efforts of federal agencies appropriately mitigate the risk H5N1 HPAI poses to farm workers and producers and the risk posed by the possibility that the virus might become transmissible between people. For example, Congress could require more comprehensive testing programs or different procedures following positive tests. Alternatively, Congress could continue to let the regulatory agencies decide how to address these risks or require the agencies to redirect or reduce their efforts if Congress concludes them unjustified.

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