



**APHIS Recommendations for Highly Pathogenic Avian Influenza (HPAI) H5N1 Virus in Livestock
For State Animal Health Officials, Accredited Veterinarians and Producers
April 12, 2024**

Highly Pathogenic Avian Influenza A (HPAI) H5N1 virus is an emerging disease in cattle. Federal and State agencies are moving quickly to conduct additional testing for the H5N1 virus, including viral genome sequencing to provide a better understanding of the situation to characterize the H5N1 viruses associated with these detections as well as other multi-factorial components of the disease event in dairy cattle. The genetic and epidemiological data indicate some instances of spread from dairy to dairy and from dairy premises to poultry premises. Based on this analysis, we have learned that the whole genome sequence for viruses found on two recent commercial poultry premises in two different states indicates it is the same clade that is affecting dairy cattle. While it is unclear exactly how virus is being moved around, the virus is shed in milk at high concentrations; therefore, anything that comes in contact with unpasteurized milk, spilled milk, etc. may spread the virus including humans, other animals, vehicles, and other objects or materials. Therefore, both dairy and poultry producers should re-double biosecurity efforts and be vigilant about monitoring for and controlling disease in their herds and flocks.

Our goal is to safeguard the health of U.S. livestock and poultry, protect the industry, keep our food supply safe, and protect public health and human safety based on the most up-to-date information we have. We continue to work diligently to understand the risk factors associated with this virus, transmission routes, and pathogenicity in cattle. This continues to be a rapidly evolving situation. USDA and Federal and State partners will continue to share additional updates as soon as information becomes available.

Summary of Recommended Actions

Producers should practice enhanced biosecurity, minimize animal movements, test animals before movement, and isolate animals moved on or off premises. Additional detailed actions are provided below this section, subject to updates as information is gathered.

Biosecurity. Producers should implement enhanced biosecurity practices for keeping disease off farms and controlling disease spread on the farm. The [Secure Milk Supply Plan](#) is a collaborative initiative among the dairy industry, USDA, State officials and three universities. The Secure Milk Supply website offers comprehensive materials on dairy biosecurity practices, including posters and information sheets in English and Spanish.

Additional biosecurity resources can be found at the following links below:

- [Biosecurity - National Dairy FARM Program](#)
 - [Layout 1 \(tamu.edu\)](#)
 - [Biosecurity for cattle operations | UMN Extension](#)
 - [Farm Biosecurity - CFSPH \(iastate.edu\)](#)
-
- **Monitoring for Sick Animals.** Producers should monitor herds closely for cattle with clinical signs of disease.
 - **Movement of Cattle.** Movement of cattle should be minimized, and pre-movement testing is recommended; movement of cattle should be focused on preventing movement of disease.
 - **Vehicles, Equipment, and People on the Farm.** Producers should limit the movement of vehicles and visitors on and off livestock and poultry premises and establish dedicated routes for vehicles that do come onto the premises.

- **Wildlife Management.** Producers should monitor and report any odd behaviors and die offs in domestic and wild animals immediately.

Milk Safety During H5N1 Outbreaks. The Food and Drug Administration (FDA) recommends that farms with H5N1 infected or exposed cows should pay special attention to raw milk safety and handling practices for discarded milk.

- **Safety of Feeding Waste or Discarded Milk to Animals.** Raw milk should not be fed to any animals.
- **Safety of Unpasteurized Milk and Dairy Products for Human Consumption.** Raw milk and dairy products should not be used for human consumption.
- **Disposal of Discarded Milk.** Disposal of milk should be handled to prevent H5N1 virus exposure to other animals. Producers should consult with their state regulatory authorities for specific recommendations or requirements.

Worker Safety. The Centers for Disease Control and Prevention (CDC) recommends use of personal protective equipment (PPE) for workers and workers monitoring themselves for any symptoms of influenza for 10 days after their last exposure.

Specific Biosecurity Recommendations

Monitoring for Sick Animals

- Producers should monitor herds closely for cattle with clinical signs of the disease (decreased milk production; reduced appetite; thickened, discolored milk; lethargy; fever; and/or dehydration).
- Move animals with clinical signs to a dedicated hospital or sick pen. If possible, this area should not share confined air space, panels/fence lines, feeding or watering space with other animals.
- Work with a veterinarian on testing, care of sick animals, and criteria for cattle to return to herd.
- Dedicate caretakers and equipment to sick animals or work with them last, followed by cleaning of equipment, boots, clothing etc.
- Although the H5N1 virus itself is a foreign animal disease (FAD), we are considering this an emerging disease in cattle. APHIS encourages States and industry to use the established FAD/Emerging Disease investigation process to investigate credible reports of H5N1 virus in dairy cattle (and beef cattle or other domestic livestock species).
 - [VS Guidance Document 12001.4 - Policy for the Investigation of Potential Foreign Animal Disease/Emerging Disease Incidents \(FAD/EDI\) \(2020\)](#)
 - [VS Guidance 12001.4 Ready Reference Guide \(2021\)](#)
- Milk samples from lactating cattle and nasal swabs from non-lactating cattle should be submitted to a National Animal Health Laboratory Network (NAHLN) laboratory for testing any suspect animals. See specific guidance on the [NAHLN website](#).
- APHIS will reimburse for initial testing of suspect animals at NAHLN laboratories; accredited veterinarians can collect samples and should work with State Animal Health Officials (SAHO) and/or APHIS Veterinary Services' Area Veterinarian in Charge (AVIC) to obtain an FAD number.
- Currently, APHIS is not recommending depopulation of cattle; in most cattle, this appears to be a self-limiting disease with resolution for cattle with palliative care.

Movement of Cattle

- At this time, USDA will not be issuing Federal quarantine orders.

- However, we strongly recommend minimizing movement of cattle as much as possible, with special attention to evaluating risk and factoring that risk into movement decisions.
- If you have any animals with clinical signs on the premises, do not move other animals off the premises.
- All animals that move on/off a premises should be isolated to prevent the spread of disease as many disease symptoms take a while to appear and asymptomatic cattle have tested positive.
- If cattle must be moved, we strongly encourage extreme diligence by producers, veterinarians, and States to ensure only healthy cattle are moving and to ensure the validity of interstate health certificates. APHIS stands ready to assist SAHOs with developing language for interstate certificates of veterinary inspection, as needed.
- If cattle must be moved, APHIS recommends premovement testing of milk samples from lactating cows and nasal swabs for non-lactating cattle, by PCR for Influenza A and H5 virus, at a NAHLN laboratory for individual animals (statistical sample of lots). It should be noted that how the virus is infecting dairy cattle, the duration, and route of H5N1 virus shedding is not yet known; a negative result does not guarantee the animal is free of H5N1. Additional recommendations for testing can be found [here](#).
- APHIS scientists are working to establish testing protocols, rapidly assessing currently available tests and test performance including sample types to better understand the characteristics; based on this analysis, we may recommend surveillance other than testing sick cows in the future.

Poultry

- APHIS, States, and industry will continue to respond to H5N1 in domestic poultry with a stamping out policy. The emergence of the H5N1 virus in dairy cattle provides additional incentives for domestic poultry producers to practice good biosecurity and conduct vigilant surveillance.
- Information on biosecurity best practices for poultry is available [here](#).

Vehicles, Equipment, and People on the Farm

- Use trailers to transport only your own livestock.
- Clean and use an [EPA-registered disinfectant](#) effective against avian influenza to disinfect trailer interiors that were used to haul cattle from other operations with unknown health status.
- Limit movement and sharing of equipment and people between any other livestock or poultry operations.
- Implement and communicate designated hauling routes on farm for milk, feed, rendering, and delivery trucks.
- Do not allow drivers (milk haulers, renderers, etc.) access to animal housing, animals, or milk products to be fed to calves.
- Use [EPA-registered disinfectants](#) on contact surfaces (footwear, tires, etc.) before entry in and out of milking areas and other cattle areas.
- Require disinfection of handling, treatment, milk sampling/testing, breeding and hoof trimming equipment, with particular attention to proper disinfection of milking equipment.
- Delay or stop non-essential visitors.
- Limit cattle contact to those essential for the health and continued operation of the dairy. Require or provide clean clothing and footwear to those entering.
- Provide hand-washing stations and encourage use; provide disposable gloves and encourage use.
- Dairy workers should limit contact with other livestock and poultry premises, including livestock and poultry the worker may own.

- The [Secure Milk Supply Plan website](#), a collaborative initiative between industry provides excellent biosecurity training and easy to use resources for dairy workers in English and Spanish.

Wildlife and Domestic Animal Management

- Limit access of non-production animals to farm areas and implement measures to exclude domestic pets (e.g., cats) and wildlife from buildings.
- Avoid housing multiple species of animals together.
- Report findings of odd behaviors or increased numbers of dead wild birds, cats, skunks, or raccoons to animal health officials.
- Disrupt habitats like shelter, food, and water sources that may attract birds and small mammals susceptible to H5N1 (e.g., cats, skunks, raccoons). Methods must follow State and Federal regulations. Contact the U.S. Fish and Wildlife Service office, USDA Wildlife Services office, or [State agriculture or natural resources agencies](#) for [additional information](#) or assistance with removal.
- Never use untreated surface water as a source for drinking, to wet down dry lots/paddocks, in barn misters, or to clean equipment that contacts cattle. Fence off ponds/non-draining areas. Consult a wildlife or wetlands professional about managing ponds and drainage areas on farm.
- Do not feed wildlife. Cover compost piles of carcasses whenever possible to prevent carnivores and wild bird scavengers.

Specific Milk Safety Recommendations During H5N1 Outbreaks:

Safety of Feeding Waste or Discarded Milk to Animals (Contributed by FDA)

FDA's current best recommendations are as follows:

- Young calves are susceptible to disease and disease-causing pathogens that can be transmitted through raw milk.
- FDA recommends that all milk intended to be fed to calves and other animals (e.g., cats fed on the farm) should be pasteurized or heat-treated at times and temperatures similar to those commonly found in commercial milk pasteurization processing.
- Any other dairy products, such as raw milk cheeses or dairy byproducts from cattle, intended to be fed on the farm should be heat-treated or pasteurized, as well.
- Any raw milk or raw milk products from exposed cattle, that cannot be heat treated or pasteurized should be safely discarded. Exposed cattle generally means cattle located on a premises with cattle with suspected or confirmed H5N1. Milk from sick cows should be discarded. *See recommendations below regarding disposal of discarded milk.*
- Many state Cooperative Extension Service programs have published detailed information on how to pasteurize or otherwise effectively treat waste milk before using it to feed calves (For example, Penn State - [Pasteurization of Non-Saleable Milk](#)).
- Producers should also consult with their State regulatory authorities for state-specific recommendations or requirements.
- As guidance and recommendations on milk safety and HPAI may change as more is learned, please visit FDA's question and answer page here for the latest: [Questions and Answers Regarding Milk Safety During Highly Pathogenic Avian Influenza \(HPAI\) Outbreaks | FDA](#)

Safety of Unpasteurized Milk and Dairy Products for Human Consumption (Contributed by FDA)

FDA recognizes this is an evolving situation and we still have limited data on asymptomatic or pre-symptomatic shedding in cattle. FDA's current best recommendations are as follows:

- Raw milk, raw milk cheese, and other raw dairy products should not be manufactured from asymptomatic cattle that have been exposed.
 - Exposed cattle generally refers to cattle located on a premises with cattle with suspected or confirmed with H5N1. Given the variety of premises sizes and the potential for state requirements, FDA recommends producers consult with State regulatory officials and their veterinarian for further guidance.
- Test for HPAI in pooled milk prior to resuming commerce in unpasteurized dairy products following apparent resolution of illnesses on the premises.
- As guidance and recommendations on milk safety and H5N1 may change as the situation evolves and we learn more, please visit FDA's question and answer page here for the latest:
 - [Questions and Answers Regarding Milk Safety During Highly Pathogenic Avian Influenza \(HPAI\) Outbreaks | FDA](#)
 - [Raw Milk | FDA](#)

Disposal of Discarded Milk (Contributed by FDA)

- FDA and APHIS recommend producers take precautions when discarding milk, especially that from affected cows so that the discarded milk does not become a source of further spread.
- Such precautions could include heat-treatment or pasteurization of discarded milk prior to dumping in lagoons or application of waste solids and ensuring biosecurity around lagoons (e.g., ensuring that animals and birds do not have access to lagoons).
- FDA also recommends producers consult their State regulatory officials on any state requirements.

Specific Worker Safety Recommendations (Contributed by CDC)

CDC's current recommendations are as follows:

- Persons working with or around cattle, including those working with or disposing of milk waste, that are suspected or confirmed with H5N1 virus infection should wear PPE when in direct or close contact (within about 6 feet) with sick or dead animals, animal feces, litter, milk, or materials known to be or potentially contaminated with H5N1 viruses.
- Recommended PPE includes properly fitted unvented or indirectly vented safety goggles or a face shield (if there is risk of liquid splash onto the respirator), disposable gloves, boots or boot covers, a NIOSH Approved^{®*} particulate respirator (e.g., N95[®] filtering facepiece respirator) *, disposable fluid-resistant coveralls, and disposable head cover or hair cover. Perform thorough hand washing before putting on and taking off PPE.
 - For younger children, it is important to remember that respirators are designed primarily to be used by adults in workplaces. The risks and benefits of children using them are not yet fully known. Additionally, for a respirator to be most effective, it must form a seal to the face to keep particles from leaking around the edges. Some respirators may be too big for younger children's faces.
- Persons working with or around cattle, even if not in close contact, should avoid eating, drinking, smoking, chewing gum, and other such activities in potentially contaminated areas; avoid rubbing or touching the eyes, as it can result in conjunctivitis (pink eye); and perform thorough handwashing regularly, especially before eating, smoking, touching your face, and leaving work (including breaks), and before and after wearing PPE or going to the bathroom.
- People exposed to H5N1 virus-infected cattle (including people wearing recommended PPE) should be monitored for signs and symptoms of acute respiratory illness beginning after their first

exposure and for 10 days after their last exposure. Signs and symptoms in people can include:

- Mild illness (e.g., cough, sore throat, eye redness or eye discharge such as conjunctivitis, fever or feeling feverish, rhinorrhea, fatigue, myalgia, arthralgia, headache)
- Moderate to severe illness: (e.g., shortness of breath or difficulty breathing, altered mental status, seizures)
- Complications: pneumonia, respiratory failure, acute respiratory distress syndrome, multi-organ failure (respiratory and kidney failure), sepsis, meningoencephalitis
- If any person exposed to H5N1 virus infected cattle develops acute respiratory illness symptoms (see above) during the monitoring period, the State health department (including the State Public Health Veterinarian or equivalent) should be notified, the sick person should be isolated, and respiratory tract specimens should be collected for influenza A and A (H5) testing at a state health department laboratory. Empiric antiviral treatment with oseltamivir (twice daily x 5 days) should be prescribed and administered as soon as possible to any person with suspected H5N1 virus infection.
- When relevant, animal health and public health officials should use a One [Health](#) collaborative approach to conduct epidemiological investigations into animal and human infections of H5N1.
- Additional guidance and details are available on the CDC webpages at:
 - [Recommendations for Worker Protection and Use of Personal Protective Equipment \(PPE\) to Reduce Exposure to Novel Influenza A Viruses Associated with Severe Disease in Humans | Avian Influenza \(Flu\) \(cdc.gov\)](#)
 - [Highly Pathogenic Avian Influenza A\(H5N1\) Virus in Animals: Interim Recommendations for Prevention, Monitoring, and Public Health Investigations | Avian Influenza \(Flu\) \(cdc.gov\)](#)

** Attribution Statement*

N95 and NIOSH Approved are certification marks of the U.S. Department of Health and Human Services registered in the United States and several international jurisdictions.