



CDQAP Advisory: Update on HPAI in Dairy Cattle

April 8, 2024

The situation related to High Path Avian Influenza in Midwest dairy cattle is rapidly evolving. New information is available regarding human health, protective regulatory actions and resources for dairy farm biosecurity.

Summary

- Highly Pathogenic Avian Influenza (HPAI) has been isolated from a number of dairy herds in six Midwestern states and appears to be the disease agent that caused illness originally described on dairies in the Texas panhandle.
- The disease has not been reported in California, nor has this disease been identified in beef cattle in any state.
- The disease appears to have been originally introduced into dairy cattle through contact with wild birds, their excretions or carcasses.
- There is epidemiologic evidence that cow-to-cow transfer has also occurred during movement of cattle from infected herds to non-infected herds. The method of transmission is unclear.
- In collaboration with California dairy and beef representatives, CDFA has recently expanded regulatory requirements for dairy breed cattle entering California from affected states.
- A variety of dairy biosecurity recommendations have been released, including a [summary](#) specific for HPAI in cattle developed by the NMPF and bovine veterinarians. See attached.
- *By far the most effective protective measures available are ones that producers can take unilaterally.*
- Because the HPAI virus has been isolated from wild bird samples collected in California, producers may wish to evaluate their wild bird mitigation measures with their veterinarian.
- USDA, FDA and CDC [agree](#) that pasteurized milk and properly cooked meet are completely safe for consumers.
- Because the disease is self-limiting and does not cause cow mortality, USDA does not anticipate depopulating affected herds.
- Both USDA and CDC have released worker protection guidelines for employees in herds known or suspected to be infected with HPAI. They do not apply to uninfected herds.



- **DMI and CDFA have both produced messages for consumers and producers. See attached.**
- **To implement early actions limiting within-herd spread, as well as prevent spread to other herds, its essential producers report unusual reduction of appetite or production to their veterinarian immediately.**

What is the current situation?

As of this writing, laboratory confirmation of Highly Pathogenic Avian Influenza ([HPAI](#)) infection in dairy cattle has occurred in 16 herds in six states: Texas (8), New Mexico (2), Kansas (3), Idaho (1), Michigan (1), and Ohio (1). The disease has not been reported in California. Epidemiologic [investigations](#) are continuing. Ongoing testing may reveal the virus in additional herds that currently have or had cows exhibiting symptoms. While the lay media has focused on the small number of newly identified infected farms, anecdotal industry reports from the Midwest suggest that the rate of new infections may be slowing or potentially plateauing.

What are the symptoms in affected cattle?

CDFA currently refers to HPAI infection in cattle as “*Bovine Associated Influenza A (HPAI) Syndrome*”. See attached. Clinical signs include a significant loss of appetite and drop in milk production and changes in manure consistency, thickened or colostrum-like milk and low-grade fever. There is potential that dairy animals, in particular youngstock, may be infected but asymptomatic. This may have contributed to herd-to-herd disease spread in the Midwest.

How long does it take a herd to recover?

Peak incidence is seen about 4 to 6 days following the presentation of the first case. Morbidity may be 5% to 15% of lactating herd. Direct mortality has not been reported with most affected cows typically recovering within two to three weeks. Some cows with lingering illness have been culled. Many affected herds have reported a return to near normal production within 3 weeks. Anecdotal reports from the Midwest suggest that, once infected, internal biosecurity measures implemented on the dairy helps limit the severity and spread of the outbreak within a herd. Because the disease appears to be self-limiting and causes little to no direct cow mortality, USDA does not at this time anticipate [depopulating](#) affected herds.

How do cows become infected with the virus?



Original Introduction - Thus far the virus detected in dairy cattle and wild birds found on affected farms is of the same HPAI [strain](#) and clade (lineage) that has been circulating within North American wild bird populations and that has resulted in the depopulation in some 60 million commercial poultry. For this reason, wild migratory birds are believed to have been the source of the original virus introduction of into the Midwest dairy industry.

How cattle became exposed to the bird virus remains under investigation but several routes are possible. They include direct contact with wild birds or their excretions. This could include birds defecating on crops or stored feed. Alternatively, sick or dead birds may have been incorporated into silage or TMRs which was then consumed by livestock. Similarly, bird manure or carcasses may have contaminated water sources. Dead birds are reported to have been found in cattle watering tanks.

Cow-to-Cow Transmission – Dairy herds in [Idaho](#), [Michigan](#) and [Ohio](#) are reported to have recently received animals from affected herds or states, suggesting that “lateral transmission” from cow-to-cow had occurred. The mode(s) of transmission are unknown and could include nose-to-nose saliva or aerosol droplet transfer, through contaminated manure, carriage downwind in air-borne plumes or during milking. Fortunately, regardless of which mode or modes of transmission are identified, as described below, implementation of basic biosecurity measures will minimize the risk of disease entry into a herd.

What regulatory protections are being implemented in California?

Continuing Actions – California animal health experts continue to closely monitor the situation in affected states and are in constant communication with those state and federal officials. California border agricultural stations remain on high alert, ensuring that haulers have a proper Certificate of Veterinary Inspection ([CVI](#) or “health papers”). In addition, entry permits are always required for livestock not going directly to slaughter. These documents provide critical real-time tracking of livestock movement within the state. Persons facilitating movement of livestock into California that carry disease may face significant criminal [penalties](#) including jail and hefty administrative fines.

Newly Enhanced Actions – In consultation with dairy and beef industry representatives, this week CDFA begins the process of implementing two important enhancements for [CVIs](#) (“health papers”) that will accompany all dairy breed cattle originating from states known to have herds infected with HPAI. The first is a shortening of the period during which a CVI is valid from 30 days to 7 days. This decreases the risk that an animal incubating HPAI will be missed during the veterinary inspection.

The second enhancement is a requirement that the CVI includes the following statement:



“All animals identified on this Certificate of Veterinary Inspection (CVI) have been inspected and do not originate from a premises with a confirmed detection of Bovine Associated Influenza A (H5N1) Syndrome or that is currently under investigations as a suspect premises.”

This new requirement highlights the responsibility of out-of-state veterinarians to investigate the origin and history of the livestock he or she is issuing documents for. While haulers will not be turned around, shipments without appropriate paperwork will face additional regulatory scrutiny which may include quarantine by CDFA for 21 days. See the attached PDF for more on CDFA’s new entry requirements.

Importantly for international trade purposes, California is not stopping imports from affected states, but rather are enforcing the existing prohibitions preventing the importation of diseased cattle into California by clarifying specific requirements.

Will California close down its borders?

Through its Quarantine Authority (FAC 9562), the state has the ability to restrict animal shipments from states or regions experiencing animal disease outbreaks and CDFA may decide to implement controls in the future. While border restrictions remain an option, a number of California producers and heifer-raising operations ship youngstock to Texas to be returned as breeding age or springing heifers. Closing California to Texas cattle shipments could profoundly and negatively affect the state’s dairy replacement supply chain. CDFA is continuously assessing the balance between animal health actions and potential disruptions to the industry. If, based on epidemiological evidence, it’s determined that a disease poses a significant threat to California cattle that cannot be adequately controlled through usual precautions and farm level biosecurity, additional aggressive regulatory action will be taken.

What can I do to protect my herd in California?

USDA-APHIS has released biosecurity [recommendations](#) for veterinarian and producers. In addition, the National Milk Producer’s Federation (NMPF) and the American Association of Bovine Practitioners (AABP) have jointly produced [guidance](#) on biosecurity specifically for HPAI in dairy cattle. See attached. The NMPF and FARM Program has also produced a relevant “Everyday Biosecurity” [manual](#).

Relative to preventing herd infection, the most effective protections available are not regulatory actions, but rather steps that can be taken unilaterally by producers. Below are a summary of the most important biosecurity measures California producers can focus on.



Confirm History & Health Status of Animals – In addition to new requirements pertaining to out-of-state CVIs (see above) it would be prudent for a producer to inquire about the movement, housing and health history of the animals to be transported. Ideally animals intended for transport would also be isolated from other animals for at least three weeks before being shipped to California. See “*Isolate New Arrivals*” section below.

Clean and Disinfect Transport Vehicles – While the method of herd-to-herd viral transfer has not been identified, many viral disease agents, including HPAI between birds, can be transferred through exposure of secretions, urine or manure. Producers should require that trailers transporting cattle from affected states be thoroughly cleaned with a power washer and treated with an appropriate disinfectant prior to use.

Isolate New Arrivals – After arrival in California, the most important backstop precaution a producer can take is rigid adherence to an isolation period for new arrivals. Regardless of what state new herd additions originate from, incoming or returning animals should always be “quarantined” away from the rest of the herd for a minimum of 21 days. Monitor the health status of the animals daily. Avoid continual introductions; keep each group “closed” and separated until the group is ready to join the main herd.

Use an Effective Isolation Location – In order to be effective, the isolation area will not allow nose-to-nose contact with other cows and will not share a water source. In addition, arrivals’ manure cannot come into contact with resident cows, either directly or by use of shared equipment. Such isolation requirements may be difficult to meet on the home dairy and use of alternative isolation location may be necessary.

Report Unusual Symptoms Immediately – To both protect your neighbors as well as to take early action to limit spread within your own herd, producers should immediately advise their herd veterinarian of unusual symptoms. Right now, this is particularly true if an unexplained drop in feed consumption and milk production is observed in lactating cows.

Evaluate wild bird control – Samples taken from wild birds in California routinely confirm the presence of the same HPAI strain infecting wild birds and cattle in the Midwest. Almost half of California’s counties have had such detections within the last year, highlighting the potential for bird-to-cow transmission to occur in our state independent of spread from cows being imported from the Midwest. Control methods can vary by bird species, but in general they include limiting access to feed and waste, preventing wild bird access to structures and non-lethal harassment methods.

The following resources have been recommended by USDA and CDFA’s Wildlife Interface Program:

- [USDA: Prevent Avian Influenza at your Farm: Simple Wildlife Management Practices](#) (photos)



- [CDFA: Vertebrate Pest Control Handbook](#) (See [Chapter 5](#) and [Chapter 6](#) for wild bird control)
- [University of Nebraska: Prevention and Control of Wildlife Damage Handbook](#)

A wide variety of acoustical and visual tools and methods are [available](#) to frighten birds, but not all devices have undergone through scientific testing, so customers should be wary. Some newer technologies are being developed such as [laser-based](#) bird control devices. Although reported to be effective they may be cost-prohibitive. Lastly, producers can contact Wildlife Services California ([WS-CA](#)) for assistance. Some counties have contracts with WS-CA which means a portion of implementing control costs may be covered.

What About Vaccination? – There are no commercially available [vaccines](#) for the current poultry HPAI outbreak strain licensed for use in the United States in either poultry or cattle. CDQAP will monitor this issue and update industry as needed. The virus sequences from wild birds, cattle and the sole human patient are closely related to two existing HPAI A(H5N1) [candidate](#) (experimental) vaccine. This suggests the potential for a human vaccine specific for this strain could be manufactured in the in the future.

Is there a test for HPAI in cattle? – The PCR assay has been successfully used to identify the virus from bovine nasal swabs and milk samples. Milk samples are attractive for use in lactating cows because of ease of collection and up to five samples can be “pooled” to run at once. Milk samples also seem to detect the virus most often in an infected animal. There is potential that the PCR assay could be used to test a bulk tank, but the use of the assay in that manner has not been validated. Currently the testing method of choice for youngstock remains nasal swabs. There is potential that in the future, pre-transport testing of animals could be used as a precautionary measure prior to shipping. Currently the limited national laboratory capacity to run the assay and the need to prioritize samples from infected flocks or herds makes availability for pre-transport testing challenging.

What do I need to do about worker safety?

The recent report of a [dairy employee](#) with conjunctivitis testing positive for HPAI has raised concerns about dairy worker safety. USDA-APHIS has released [recommendations](#) for persons working with or around cattle that are suspected or confirmed to have HPAI infection. The USDA guidance references the CDC’s current [interim recommendations](#) regarding farm workers potentially exposed to HPAI. Importantly samples from both cattle and the human patient lack genetic changes that would make them better adapted to infect mammals. In addition, there were no markers known to be associated with influenza resistance to anti-viral treatments such as Tamiflu.

To date *Bovine Associated Influenza A (HPAI) Syndrome* has not been detected in any California beef or dairy herds, so changes in existing worker Personal Protective Equipment (PPE) may not be warranted. At a minimum California producer should encourage and empower employees to report illness,



particularly those with respiratory, cold or flu symptoms and seek medical attention and potentially testing. Producers should also strongly discourage employee consumption of raw, unpasteurized milk from the farm.

What public messages are available? CDFA has released public messages concerning the outbreak and dairy food safety. See attached. DMI has also produced a Q&A document for the public. See attached.

Other Dairy Biosecurity Resources

[CDFA Biosecurity Homepage](#) – The jumping off point for information biosecurity information for all species.

[CDFA Secure Food Supply Homepage](#) – The Secure Food Supply program is a national collaboration designed to facilitate development of state approved *enhanced* biosecurity plan, allowing producers to continue operations, even during an animal health emergency.

[Secure Food Supply Self-Assessment Checklist](#) – Producers can use this national checklist to assist producers in determining how prepared they are to respond with enhanced biosecurity procedures required during a full-blown foreign animal disease outbreak, like Foot and Mouth Disease.

[CDFA Dairy Enhanced Biosecurity Plan Manual](#) – This manual can be used to complete CDFA's Dairy Farm Premises Enhanced Biosecurity Plan Template. When approved an Enhanced Biosecurity Plan will assist producers in maintaining business continuity even in the face of an animal health emergency.

[NMPF / Dairy FARM Program Biosecurity Homepage](#) – The homepage for the National Milk Producer Federation's biosecurity outreach program.

[NMPF / Dairy FARM Program Everyday Dairy Biosecurity Manual](#) – This colorful, comprehensive manual describes with words, diagrams and pictures practices which will help keep your farm free of routine disease incursions.

Producers or processors with additional questions related to biosecurity in general or mitigation for HPAI specifically are encouraged to consult with their herd veterinarians or their local CDFA Veterinary Medical Officer. See the attached poster for local CDFA contact information.



As always, CDQAP and the University of California – Davis remain available to assist: Dr. Michael Payne can be contacted at mpayne@ucdavis.edu.