

Testing cattle for highly pathogenic avian influenza (HPAI)

On March 25, 2024, the USDA, FDA and CDC announced [detection of highly pathogenic avian influenza \(HPAI\) H5N1 in dairy cattle in TX and KS](#). This is an evolving situation, currently thought to be spread via wild birds to cattle. Clinical signs have been limited to adult lactating cattle, with the primary sign being a pronounced drop in milk production, a decrease in appetite and rumination, mild respiratory signs, low grade fever, and thickened "colostrum-like" milk. Some cattle have dark tarry stools while others have diarrhea. Milk and nasal swabs from affected cattle have both tested positive for H5N1 clade 2.3.4.4b, the clade currently circulating in wild birds in the US since 2022. Some of the affected farms have also reported high numbers of dead wild birds. The Animal Health Diagnostic Center (AHDC), as a National Animal Health Laboratory Network (NAHLN) laboratory, tests avian and mammalian samples for HPAI by PCR, and forwards all non-negative samples to the National Veterinary Services Laboratories (NVSL) in Ames, Iowa, for confirmation. Currently, there are no quarantines or other regulatory restrictions for detection of HPAI in cattle.

USDA funded testing for HPAI in dairy cattle is available at the Cornell AHDC for cases that meet criteria established by the USDA, for which testing has been approved by your State Veterinarian and a Foreign Animal Disease (FAD) investigation number has been established. Official premises ID must be included on the submission form. Contact your State Veterinarian's office to obtain a premises ID if the farm does not have one.

Working USDA Case Profile:

- Sudden drop in feed intake with concurrent decreased rumination and rumen motility.
- Subsequent marked drop in herd level milk production.
- More severely affected cows may have thickened milk that almost appears like colostrum or may have essentially no milk.
- Changes in manure - most reporting indicates tacky to dry manure in affected cattle.

Please contact the Cornell AHDC veterinarians with any questions about bovine HPAI testing or sample submission by calling (607) 253-3900 or email vetsupport@cornell.edu

How to submit for bovine HPAI testing:

Follow the requirements below to ensure the Cornell AHDC has been informed that your bovine samples for HPAI testing are on their way:

1. First contact your State Veterinarian for approval of bovine HPAI testing and to acquire an FAD investigation number. Once this is done, call the Veterinary

Support Services team at the Cornell AHDC, (607) 253-3900, to notify them that bovine HPAI samples will be submitted.

2. Use a [general submission form](#). Write "FAD" clearly on the submission form and include the FAD number and premises ID in the history box. Include all cattle IDs and which specimens are being submitted from each animal for HPAI testing. Under Cornell AHDC Acct. No: write 5447
3. Use an insulated shipping container. Ship overnight with cold packs. Place a copy of the submission form inside the box in a ziplock bag.
4. Write large "Fs" in black marker on all sides of the shipping box.
5. Email ahdcmammalfad@cornell.edu **before 7am EST on the day the samples are due to arrive** with the tracking number. Attach a copy of the completed submission form and a photo of the shipping label to the email. In the body of the email please write that you are sending samples for bovine HPAI testing and include the FAD number.

A sample list is provided here for suspect cattle:

Live animal samples from a single farm, listed in order of priority:

1. Milk
 - Individual cow: 5-10 ml per cow, from 10 affected and 10 unaffected cows (do not pool from different cows)
 - Bulk tank: 150 ml per tank
2. Nasal swab in plain red top tube with 0.5 ml saline, or viral transport media from 10 affected and 10 unaffected cattle
3. Serum from 10 affected and 10 unaffected cattle
4. 3-5 dead birds found at affected premises
5. Dead small mammals (for example, farm cats) from premises, up to 3 animals

Post-mortem:

1. Milk and mammary tissue
2. Lymph nodes (supramammary and other)
3. Lung
4. Spleen
5. Diaphragm
6. Optional: full set of fresh and fixed tissues ideally