Testing for Highly Pathogenic Avian Influenza in Cattle
Guidance for Private Veterinarians

This document provides guidance on testing for Highly Pathogenic Avian Influenza (HPAI) in cattle. As part of a national initiative, lead by the Canadian Food Inspection Agency (CFIA), testing is available at the BC Animal Health Center (AHC) for clinically healthy cattle. The purpose of offering testing for healthy cattle is to facilitate enhanced industry biosecurity efforts.

If veterinarians suspect HPAI infection in cattle, they are required to contact their local CFIA district office and the Office of the Chief Veterinarian promptly. For cattle movement between the United States and Canada, please refer to the CFIA import policy.

Why test clinically healthy cattle?

Testing clinically healthy animals provides another tool that producers can use to reduce risk of introducing HPAI into their herds. Evidence to date shows that udder-to-udder transmission seems to be the most common mechanism for disease spread, indicating that testing lactating animals, especially pre-movement, is of highest value in reducing between-farm disease transmission risk.

Voluntary testing is now available for clinically healthy cattle to confirm a negative HPAI status. Testing costs are covered by the CFIA, so producers will not be charged for laboratory fees. Producers are still responsible for veterinary and courier fees.

In instances where testing is not feasible, it is recommended to enhance transportation and on-farm biosecurity measures to minimize disease spread.

Key biosecurity recommendations include:

1. **Implement transportation protocol:**

- Limit cattle movements between premises as much as possible.
- Ensure that transportation vehicles used for bringing new animals to the farm are thoroughly cleaned and disinfected to prevent potential contamination.
- Minimize contact between newly acquired animals and existing animals during transportation.

2. **Quarantine incoming and returning animals:**

- Quarantine and closely monitor the health of any new or returning cattle brought into your facility for a minimum of 30 days before introducing them into the resident herd.
- Monitor quarantined cattle closely for symptoms including sudden decrease in milk production, thickened or colostrum-like milk, fever, lethargy, loss of appetite, and constipation.
- Implement a daily management plan for handling new cattle. Where possible, milking equipment should not be shared between new and resident cows. Resident cattle should be milked, fed, and cared for before the quarantine animals to reduce risk of disease spread. Leftover feed from quarantine animals should not be fed to resident animals.

How to collect and submit samples for testing?

As per current CFIA guidance, testing for clinically healthy animals is now available for non-lactating and lactating animals, through nasal swabs and milk sampling.

- Milk Sample collection:
  - For composite raw milk samples: sample all four quarters and collect up to 10mL aseptically into a sterile plastic specimen container with a secure lid.
    - Record the individual cow identification number directly on the sample container.
  - Samples must be refrigerated until they are submitted to the lab.
- Nasal Swabs:
  - Use a single sterile swab (syntenic fiber swabs only) to sample both nostrils. Brush mucosa in the nasal passage firmly with the swab.
  - Agitate the swab in the universal transport medium (UTM). DO NOT leave the swab in the UTM but instead swirl the swab into the UTM tube and thoroughly squeeze out the fluid against the side of the tube. Discard the swab.
- Submit the samples to the Animal Health Center with the completed submission form (Bovine Submission Form (gov.bc.ca))

What is the test turnaround time?

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- The test turnaround time is 2-3 business days from sample receipt at the Animal Health Center.
- While waiting for the results, it is advisable to restrict access of tested cattle to as few areas on farm as possible and monitor for clinical signs.

What does a negative test result mean?

The HPAI test used for movement screening is a PCR (polymerase chain reaction). A negative test indicates no detection of influenza A virus in the sample.

- A negative test on a cow with no clinical signs typically means no HPAI infection.

Rarely, a false negative result occurs when the cow is infected, but HPAI is not detected by the test. This can happen if the cow is not yet shedding high levels of HPAI, for instance if the cow was infected very recently. This can also happen if the sample is contaminated with material inhibiting the test, or if the sample is too diluted.

- Ensure the milk submitted is a clean sample (minimal to no soil or feces) and from a single individual (not from bulk milk tank) to minimize the chance of a false negative result.

What will happen if the test comes back positive?

HPAI in cattle does not impact animal health in the same manner as with domestic poultry. While HPAI spreads rapidly between birds and results in high mortality rates; cattle typically exhibit milder signs, with only a small proportion of the herd affected. Therefore, the regulatory response to HPAI detection differs between the two industries.

Animal health

- All results that are positive at AHC will be reported to CFIA and the Office of the Chief Veterinarian. The samples will be forwarded to the National Centre for Foreign Animal Disease (NCFAD) for confirmatory testing.
- The Chief Veterinarian may disclose the farm identity and location to other parties (e.g. BCDA, MMB, milk, feed, animal transporters) and instruct those parties take actions to reduce risk of disease spread.
- Cattle herds with a positive test result may undergo a disease investigation including trace out to other herds that have shipped or received animals from the herd with the positive test. The disease investigation may lead to regulatory action,

including quarantining of the herd(s) for up to 30 days after clinical signs in all cattle have resolved.

- Impacted herds will be able to continue to ship milk from healthy animals.
- Further guidance will be made, and may include:
  - To take specific measures to segregate animals known to be actively infected with HPAI, or with abnormal milk or with other signs compatible with HPAI, to minimize the risk of cow-to-cow spread.
  - To test any animals with signs compatible with HPAI that have not been tested.
  - To stop cattle movements on and off the farm for a period of up to 30 days.
  - To implement enhanced cleaning and disinfection of equipment and vehicles.
  - To ensure raw milk from cows known to be actively infected with HPAI, as well as cows with abnormal milk or with other signs compatible with HPAI, is discarded and not consumed by people or other animals (including wildlife).
  - To report illness in cattle, cats, dogs, and other animals, including wildlife.
  - To ensure farm workers wear personal protective equipment (gloves, mask, eye protection, separate coveralls) when handling infected or potentially infected cattle, raw milk, or milking equipment. Staff should contact a physician if they experience any flu-like symptoms and let them know about the exposure to avian influenza virus.

Public health and food safety

- The Chief Veterinarian will report positive results to public health officials and they will contact the producer to assess human exposure to avian influenza on the farm (see human health considerations below). To assist with public health follow up, producers should be ready to share a log of who visits the farm and when they were there, as well as biosecurity and farm entry SOPs.
- Public health will follow up to provide:
  - Risk assessment of exposed individuals based on the nature of exposure, personal protective measures, presence of any flu-like symptoms, and seasonal influenza vaccination status
  - Guidance to exposed individuals regarding symptom monitoring, testing and treatment, including antiviral prophylaxis.
- Where applicable, public health officials may order diversion of milk from raw cheese processing to pasteurization

What are human health considerations?

- While rare, avian influenza virus can also infect people and can cause severe illness. Further, influenza viruses are adaptable and can change markedly when strains from humans or different animal species mix and exchange genetic information. Therefore, it is important to promptly detect avian influenza infection in people, minimize co-infections of human and avian influenza viruses, and monitor for any further transmission.

More Information

Highly pathogenic avian influenza (HPAI) in livestock - Canadian Food Inspection Agency (canada.ca)

Guidance on human health issues related to avian influenza in Canada - Canada.ca
CCOHS: How to Protect Yourself from Avian Influenza A(H5N1) at Work

Avian influenza - Province of British Columbia (gov.bc.ca)

If you are a veterinary professional and require more information, please reach out to the Animal Health Center Laboratory at 604 556-3003 or 1-800-661-9903, or email Chief.Veterinarian@gov.bc.ca.