Factsheet

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Avian Influenza in Poultry

OVERVIEW

Avian influenza (AI), commonly known as "bird flu," is a type "A" influenza virus that can infect domesticated and wild birds, including:

- chickens
- turkeys
- pheasants
- quail
- ducks
- geese
- guinea fowl
- pigeons

There are different strains of the influenza A virus that naturally occur in wild aquatic birds. Sometimes it doesn't make the bird sick. However, the influenza A virus is highly contagious, and wild birds can transmit the virus through contaminated saliva, nasal secretions and feces.

Ontario poultry is safe to eat. Avian influenza is not a threat to food safety. You should always use proper cooking times, temperatures and handling techniques with poultry, meat and eggs.

CLINICAL SIGNS

There are two categories of avian influenza A virus:

- low pathogenic avian influenza A (LPAI)
- highly pathogenic avian influenza A (HPAI)

LPAI viruses cause no or mild disease and HPAI viruses can cause severe disease or death. In the right conditions, a LPAI virus can mutate into a HPAI virus.

Some, or all, of the following clinical signs are evident in infected birds:

- a drop in production of eggs, many of which are soft-shelled or shell-less
- coughing and sneezing
- diarrhea
- hemorrhages on the hock
- high and sudden mortality rate
- quietness and extreme depression
- swelling of the skin under the eyes
- wattles and combs become swollen, discoloured and congested

The incubation period of avian influenza ranges from 2–14 days.

If you suspect avian influenza at your farm, contact your veterinarian immediately.

VIRUS TRANSMISSION

The influenza A virus is transmitted by:

- direct contact between infected and susceptible birds
- indirect contact through viral droplets in the air
- exposure to contaminated surfaces, objects and equipment

Droplets from the respiratory tract often contain a high level of virus for HPAI viruses, but the large amount of contaminated feces from LPAI viruses make fecal contaminated surfaces and objects a significant mode of transmission. People can transmit AI viruses to other premises through contaminated clothing, shoes and shared equipment and vehicles.

PREVENTION

Introduction of influenza virus into commercial poultry operations occurs most commonly through these sources:

- other domestic and confined poultry
- migratory waterfowl and other wild birds
- domestic or wild pigs
- companion or pet birds
- improper deadstock management that brings scavengers to the farm

The risk of infection depends on whether there is direct or indirect contact with commercial poultry. To minimize this risk, all poultry premises should have enhanced levels of biosecurity to prevent the introduction and spread of avian influenza.

- Prevent contact between domestic/commercial poultry and wild birds. Prevent contamination of equipment, feed and water by wild birds and their droppings.
- Prevent contact between all birds (domestic or wild) and swine. Swine can also be infected with avian and human influenza strains, increasing the risk to poultry and public health.
- Monitor the flock for signs of disease, increased illness or mortalities, and contact your veterinarian immediately if you have concerns. The veterinarian will submit appropriate samples to the Animal Health Laboratory at the University of Guelph. An early and accurate diagnosis is important. Veterinarians who suspect AI should immediately contact the Canadian Food Inspection Agency (CFIA). AI is a federally reportable disease in Canada and an immediately notifiable disease to OMAFRA and the Ministry of Health.
- Prevent and manage conflicts between wild and domestic birds. Wild birds can be a source of disease coming onto your farm or for disease from your farm getting into the wild bird population. Making your operation unattractive to wild birds and practising good exclusion techniques will minimize the potential of disease transfer.
- Practise proper deadstock management to prevent scavenging of carcasses. Disease transfer can happen with avian species and mammalian species either as disease carriers or as vectors for disease. Scavenger species around a deadstock facility increases the risk of disease transfer from wild species to domestic species and vice versa. This risk also includes disease transmission from farm to farm by either wild or domestic scavengers.

BIOSECURITY

Good biosecurity can help prevent disease. Read the following OMAFRA documents to learn more about enhanced biosecurity practices:

- *Biosecurity recommendations for commercial poultry flocks in Ontario*
- *Raise healthy small flock poultry*

The Canadian Food Inspection Agency has resources on avian influenza and avian biosecurity.

WHAT TO DO IF YOU HAVE A SUSPECTED OUTBREAK OF AVIAN INFLUENZA ON YOUR FARM

The Canadian Food Inspection Agency will quarantine your flock under the authority of the *Health of Animals Act* until confirmation of avian influenza (AI) has been verified. Once verified as a strain of concern, CFIA will order the rest of the birds on the farm destroyed in a humane manner that limits viral transmission and human exposure.

Disposal of humanely euthanized birds and other potentially contaminated material from an avian influenza infected premises

The Canadian Food Inspection Agency requires disposal of all contaminated material from the infected premises. Contaminated material could include:

- bird carcasses
- manure/litter
- leftover feed
- eggs (if applicable)

Contaminated material may also be treated using a verified biological heat treatment process to inactivate the AI virus. This process is achieved by creating compost windrows of the contaminated material inside the barn preferably, but this can be done outside also. CFIA monitors the construction of the windrows and the compost process using temperature probes to confirm the materials have maintained a minimum time and temperature according to a hazard assessment.

Once CFIA confirms these conditions, they release the material to the farmer for ongoing composting and ultimate disposal according to Ontario Regulation 106/09.

Though the material is not completely composted at this time, the AI virus is inactivated. The material is moved out of the barn to a selected site that meets specified provincial setbacks where the secondary stage of composting will occur. The material will continue to compost and be heat treated for several weeks or months until all soft tissue is consumed and the material resembles topsoil. At the end of the compost process, this material will be applied to crop land in accordance with the provincial *Nutrient Management Act*.

Once the material is removed from the barns, the farmer starts to clean and disinfect (C&D) the barns and equipment to ensure there is no virus or infected material remaining. After the cleaning and disinfecting is completed, the premises will remain under CFIA quarantine for an additional 21 days.

PUBLIC HEALTH

Avian influenza currently poses a very low human health risk, except for those in close contact with infected birds. However, the more widespread the virus, the greater the risk of it mixing with a human strain to form a more serious and easily transmissible influenza. For this reason, the World Health Organization and Health Canada have several recommendations to reduce this risk, including vaccinating poultry workers with the current human influenza vaccine.

Seasonal Influenza Vaccination

All producers working with livestock or poultry, especially with birds or swine, should get the annual human influenza (flu) vaccine. It is free to all residents who work, live or attend school in Ontario. This includes:

- poultry and pork producers and their employees
- veterinarians
- abattoir workers
- those handling wild birds

Vaccination will reduce the possible mixing of human and avian influenza strains, which would increase the risk of a potential pandemic strain evolving.

Infection control measures

In addition, individuals working with infected livestock and poultry should follow strict infection control measures to prevent exposure to influenza virus. These include:

- frequent hand washing and always washing hands after handling animals
- wearing appropriate personal protective equipment such as mask, gloves, safety goggles, coveralls, shoes or boots, and hair covers

Please contact your local public health unit for more information on infection control measures.

If a producer develops an influenza-like illness while working with infected livestock, he or she should immediately seek medical attention.

Information for veterinarians

The Canadian Cooperative Wildlife Health Centre (CCWHC) and the federal and provincial governments monitor influenza in wild waterfowl on an ongoing basis.

Preliminary test results revealed the presence of avian influenza virus, including H5 subtypes, in migratory ducks. This supports previous research showing that:

- AI is common in wild waterfowl populations
- some of these strains can be, or can develop into, highly pathogenic strains for poultry

Veterinarians should also be vigilant for signs of illness in exotic pet birds and submit appropriate samples for diagnostic testing. Diagnostic submission information is available from the Animal Health Laboratory at the University of Guelph.

This factsheet was written by staff with the Animal, Health and Welfare Branch, Ontario Ministry of Agriculture, Food and Rural Affairs.

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