May 2025

Avian metapnuemovirus (aMPV)

The first known detection of aMPV in Canada was on April 17, 2024 in two turkey flocks in Ontario. Since then, there have been additional confirmed detections in Ontario, Manitoba, and Quebec in multiple species.

While broiler flocks have been affected, the virus has primarily been detected in longer-lived birds. It is likely that there will be additional detections in these provinces and across the country.

The majority of detections in Ontario have been subtype B with a small number of subtype A, detections in Manitoba have been subtype A, and detections in Quebec subtype B. A significant number of states in the U.S. have also detected cases of aMPV in turkeys, broiler chickens, egg layer chickens, turkey breeders and broiler breeders with substantial economic losses. Subtype B is confirmed in poultry states along the east coast, and subtype A in west coast and central states.

Background

Avian metapneumovirus causes acute highly contagious upper respiratory tract infection sometimes combined with reproductive disorders, primarily of turkeys, chickens, and ducks. The disease caused by aMPV has also been referred to as turkey rhinotracheitis (TRT) in turkeys and swollen head syndrome (SHS) in chickens. aMPV is not a food safety or human health concern.

It has a wide global distribution and causes serious clinical signs associated with severe economic losses and welfare implications, particularly when exacerbated by secondary pathogens. The mortality rate depends on virulence of virus strain, species, age of birds, breeding conditions, immune status, and risk of co-infections.

aMPV subtypes A and B are considered a threat for the poultry industry because of their highly contagious nature and broad geographical distribution all over the world. Subtype A and B are identified in chickens and turkeys, while subtype C is identified primarily in turkeys as well as ducks. Other birds at risk include pheasants, game birds, and guinea fowl.

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Transmission

Clinically healthy wild birds are considered a reservoir for aMPV (e.g., waterfowl, sparrows, swallows, pigeons, falcons etc.). The most common route of transmission of aMPV occurs horizontally through aerosol or by direct contact of respiratory secretions through people or contaminated equipment. So far, there is no clear evidence of vertical transmission through breeders to progeny.

Reporting

aMPV/swollen head syndrome is an immediately notifiable disease to CFIA. Only laboratories are required to contact CFIA regarding the suspicion or diagnosis of one of these diseases.

There are currently no actions taken by CFIA in response to detection.
Provincial reporting depends on the province. Please refer to the Canadian Animal Health Surveillance System (CAHSS) tool to search for diseases and their status.

Clinical signs and diagnosis

Several other respiratory diseases can be confused with aMPV in the field. aMPV induces an acute, highly contagious infection of the upper respiratory tract, though infection in chickens may not always produce clinical signs. Swollen head syndrome is characterized by swelling of the sinuses, frothy eyes, nasal discharge, torticollis, and rigid neck/head posture due to ear infection. Typically, < 4% of the flock is affected, although respiratory signs may be widespread. Mortality is rarely >2%.

Studies indicate an immunosuppressive potential of the virus and secondary infections are common.

There are challenges related to diagnostic testing for aMPV, as the virus does not persist within birds. The virus is cleared quickly and may only be detectable for 6-7 days post infection, so by the time clinical signs are recognized, it may be undetectable by PCR testing. Combining PCR and ELISA antibody testing can aid in diagnosing and tracking disease.

If your flock is showing clinical signs of respiratory disease, contact your veterinarian.

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Treatment and Prevention

There is no treatment for aMPV infection. Prevention includes general recommendations for disease management, including biosecurity and good barn management (i.e., ventilation, controlling temperature, not overcrowding, maintaining litter quality, having a good cleaning and disinfection program, and practicing downtime). Strong disease prevention programs to control immunosuppressive disease are also recommended in addition to proactive treatment plans for potential secondary bacterial infections.

Since it is an enveloped virus, it is sensitive to multiple disinfectants (quaternary ammonia, bleach, etc.). It is stable at pH 3.0 – 9.0 and inactivated at 56°C for 30 minutes. However, it has longer survival times (i.e., weeks) at lower temperatures and that could explain some seasonal patterns.

Vaccination

There are currently no licensed commercial aMPV vaccines available for use in Canada or the U.S. However, after collaborative efforts with industry, in March 2025, notice was received from the Canadian Centre for Veterinary Biologics (CCVB) of the Canadian Food Inspection Agency (CFIA) that applications for the emergency importation of live aMPV vaccines would be accepted. It is expected that access to products should be available in the coming months. Farmers should work with their veterinarians if interested, to determine if vaccination would be appropriate for your flocks.

Sources

https://www.oahn.ca/news/avian-metapneumovirus-ampv-detected-in-ontario/

Turkey Farmers of Canada's farming info sheet

https://www.msdvetmanual.com/poultry/avian-metapneumovirus/avian-metapneumovirus