Understanding Avian Metapneumovirus (aMPV) in Poultry Flocks

Several cases of aMPV subtype B have been diagnosed in chicken flocks, in the Southeast US since early 2024.

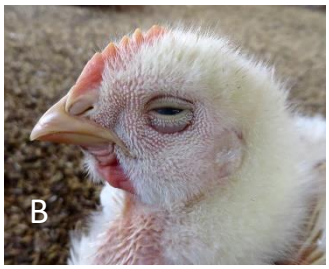
THE VIRUS

- The RNA virus is enveloped and has 4 subtypes: A, B, C and D. The subtype C has been detected in wild birds in the USA and was the causative agent of previous outbreaks in poultry over the last 2 or 3 decades in the USA.
- Survival of the virus is prolonged in cooler environmental conditions (i.e. longer viability at 4°C than at 37°C). The virus is sensitive to a wide range of disinfectants.
- Migratory wild birds and pigeons are reservoirs for the virus.

THE DISEASE

- The disease caused by Avian Metapneumovirus (aMPV) is also referred to as Turkey Rhinotracheitis (TRT), Avian Pneumovirus infection of turkeys (APV), Swollen Head Syndrome (SHS) in chickens and Avian Rhinotracheitis (ART).
- Once exposed to the virus, birds may present clinical signs shortly after (3-5 days). The virus is reported to be quickly cleared out from the birds diminishing the capacity of detection. The virus is difficult to detect once bacterial infections settle in.
- Transmission is from contact with nasal discharge from the birds themselves or on fomites. Airborne transmission is possible. The virus is not known to be vertically transmitted.
- BREEDERS AND LAYERS: Egg production drop, elevated mortality, respiratory signs (snicks, head shaking, difficulty breathing), swollen heads, eyes closed, neurological signs such as stargazing (A), head shaking, head held down. Bacterial infection in the ears and meninges are responsible for the neurological signs.
- BROILERS: Depression, swollen heads (B), decreased feed and water consumption. The affected birds have significant secondary infections due mostly to *E. coli*. Condemnations are likely to increase in broilers.
- Differential diagnoses include AI, NDV, LT, Mycoplasma, Fowl Cholera and Infectious Coryza.


A


B

SAMPLING ON THE FARM AND DIAGNOSTICS

- Schedule sampling as early as possible when alerted of suspect flocks. On a multiple house farm, sample all houses, starting with the apparently healthy houses first, then sample the houses showing clinical signs.

From the flock with clinical signs in the suspect house	***From the 'healthy' flocks housed on the same site***
Use 1 BHI tube for 11 oropharyngeal swabs*	*Use 1 BHI tube for 11 oropharyngeal swabs*
Swab 11 dead birds; 11 clinical birds; and 11 normal birds.	*Swab 11 normal birds; and 11 dead birds (if any found).*
During necropsy, additional swabs targeting the sinus cavity and nares are recommended.	

- There are ELISA tests that can detect the serological response to aMPV. They are particularly useful when taken when the birds show clinical signs and again 3 weeks later to see if the birds seroconverted.
- PCR and virus isolation tests are used to detect the presence of the virus. The window of opportunity for detection is short (3-4 days) and isolating the virus may be difficult. The presence of clinical signs along with a PCR detection constitutes a case of aMPV.

BIOSECURITY AND MANAGEMENT OF THE FLOCK

- Strengthened biosecurity measures on the farm, especially the line of separation and visitor control.
- Avoid bringing live birds to the lab. Instead, bring swabs, heads, or birds euthanized at the farm that are triple bagged and disinfected on the outside.
- The flock may need treatment for the control of the bacterial complications to aMPV.
- Vaccines have been used to control this disease and may soon be available in the US.