

Avian Influenza

Avian influenza (AI), commonly called bird flu, is an infectious viral disease of birds. Most avian influenza viruses do not infect humans; however some, such as H5N1 and H7N9, have caused serious infections in people.

Virology

Avian influenza viruses can be broadly classified into two types, based on the severity of the illness caused in birds: low pathogenic avian influenza (LPAI) or highly pathogenic avian influenza (HPAI). Most avian influenza viruses are low pathogenic. These typically cause little or no signs of illness in infected birds. However, highly pathogenic viruses can cause severe illness and death in birds. Depending on AI viruses are type A orthomyxoviruses characterized by antigenically homologous nucleoprotein and matrix internal proteins, which are identified by serology in agar gel immunodiffusion (AGID) tests. AI viruses are further divided into 16 hemagglutinin (H1-16) and 9 neuraminidase (N1-9) subtypes based on hemagglutinin inhibition and neuraminidase inhibition tests, respectively. Most AI viruses (H1-16 subtypes) are of low pathogenicity, but some of the H5 and H7 AI viruses are highly pathogenic for chickens, turkeys, and other birds.

Clinical Signs

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
- haemorrhages on the hock
- high and sudden increase in the flock's death rate
- quietness to extreme depression
- swelling of the skin under the eyes
- wattles and combs become swollen and congested

Epidemiology of Transmission

Wild birds, especially waterfowl, are natural reservoirs of influenza viruses. They are not normally affected by the disease, but can still transmit it to domestic birds. The disease can spread to birds through contact with infected poultry and poultry products. It can also spread through aerosols and contaminated manure, litter, clothing, footwear, vehicles, equipment, feed and water.

It is essential for commercial poultry producers to use **strict biosecurity practices** in order to prevent introduction of the virus to their flock. Farmers should take the following measures:

- Keep wild birds away from farmed poultry; do not keep bird feeders or create duck ponds close to poultry barns because they attract wild birds

- Maintains strict control over access to poultry farms
- Avoid sharing equipment between poultry houses; if it must be shared, ensure equipment is properly cleaned and disinfected prior to taking it into the next poultry house
- Maintain high standards for cleaning and disinfection

Treatment and Control

There is no treatment for birds that have the disease. Vaccinating the birds may play a role in reducing the spread of the disease but does not eliminate the virus. Since the virus circulates in the wild bird population, the need for strict adherence to biosecurity protocols cannot be overstated, as accidental introduction of the virus into poultry houses remains an ever present threat. The AI virus is an enveloped one, which means it is easy to inactivate by chemical disinfection.

References

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3. The World Health Organization http://www.who.int/mediacentre/factsheets/avian_influenza/en/