

Avian Influenza, A Threat to the Poultry Industry

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Avian Influenza Around the World

Avian Influenza (AI) occurs around the world in several different forms. There are many different strains of this virus that can cause varying amounts of clinical illness in poultry. AI viruses can infect chickens, turkeys, pheasants, quail, ducks, geese, and guinea fowl, as well as exotic and wild birds. Migratory waterfowl are considered a natural reservoir for Avian Influenza viruses. There is no immediate human health risk from Avian Influenza. Poultry products, chicken and eggs are safe to eat when properly prepared.

AI occurs in two forms, based on the severity of disease. Low Pathogenic Avian Influenza (LPAI) is the most common form and typically causes mild clinical signs in infected birds. Some strains of LPAI can undergo genetic mutation under field conditions and convert to the severe form of High Pathogenic Avian Influenza (HPAI). HPAI is extremely infectious and a highly fatal disease in poultry flocks. Rarely, isolated strains of high pathogenic virus can cause illness in humans. The U.S. Department of Agriculture and state animal health officials are working constantly to prevent HPAI outbreaks in Americas poultry industry. Outbreaks of AI can result in national and international bans on poultry products. The economic impact can be devastating, resulting in the loss of millions of dollars in trade, increased egg prices and the death of millions of birds.

Avian Influenza can develop rapidly in poultry operations, without any warning or noticeable symptoms. Once established, an outbreak can spread rapidly from farm to farm. The poultry industry is constantly monitored for AI and reporting of any disease is essential in order to control the spread of the virus. Testing for this disease is often required to import and export birds.

Low Pathogenic Avian Influenza and Rhode Island

In recent years LPAI has been occasionally detected in live bird markets and small flocks in New England. The most recent outbreak of LPAI occurred in Virginia during the summer of 2002, affecting 4.7 million birds. In February of 2003, LPAI was reported in a large commercial layer flock in Eastern Connecticut. State and Federal officials responded by instituting strict quarantine and surveillance procedures in order to contain the disease and identify infected flocks. In April 2003, Rhode Island discovered LPAI infected birds within one commercial egg operation and one live bird market, and implemented protocols to prevent the disease from infecting other commercial and private flocks. The live bird market was thoroughly disinfected and remains free of LPAI, under constant monitoring by state officials. The egg layer operation was depopulated and remains under strict biosecurity with regular testing in place. There have been no other cases of avian influenza reported and Animal Health staff continues to routinely test

all sick birds and commercial flocks in the state. Although the potential for LPAI to mutate into the severe high pathogenic form is extremely low, identification and quarantine of AI infected birds is essential in order to prevent the virus from establishing itself and multiplying. State and federal law mandates the reporting of all Avian Influenza cases and permitting of all poultry entering the state.

Rhode Island has approximately 100,000 birds in production and 30,000 birds in so called “backyard” flocks, which includes farms with less than 500 birds and individual residences with poultry raised for fairs, shows and exhibition. Commercial production facilities are at the highest risk for disease due to the large numbers of birds in confined areas and movement of potentially contaminated vehicles and materials between farms. Backyard flocks and small farms can be infected, especially when they have contact with wild birds and materials from commercial operations.

Clinical Signs of Avian Influenza in Poultry

Infected birds may exhibit no obvious signs of disease. Typically bird owners will notice one or more of the following symptoms, in no specific order:

- Sudden death with no clinical signs
- Lack of appetite
- Listlessness
- Drop in egg production
- Soft shelled and misshapen eggs
- Swelling of the head, comb, wattles, eyelids and legs
- Respiratory disease, sneezing, coughs, nasal discharge
- Neurological signs, in coordination
- Diarrhea

Bird owners should be alert and monitor flocks for any sign of illness. Veterinarians and Animal Health Officials should be contacted immediately when disease is suspected.

Preventing Avian Influenza-Biosecurity Measures on Farms

Avian Influenza can be spread rapidly, primarily through contact with infected birds, manure and contaminated vehicles and materials. Migrating waterfowl harboring the virus can expose domestic birds. Once introduced to a farm, AI moves easily among birds housed together. Mechanical transmission via contaminated manure, cages, feed, vehicles, egg crates and exposed humans represents the highest risk for spread of disease. Cohabitation and close proximity to wild birds and waterfowl are also known to cause outbreaks.

Avian Influenza virus can remain contagious for long periods in moist, moderate temperature environments, such as dirt and manure. Frozen virus can survive indefinitely. Fortunately heat, drying and most types of disinfectants will destroy AI. Thorough cleaning and washing of exposed materials, followed by complete application of disinfectants is effective for decontamination. Poultry owners should always practice strict “Biosecurity” (protocols designed to prevent disease). Some recommendations for biosecurity are:

- Practice “all in-all out” management of birds, with cleaning between restocking.
- Thoroughly clean and disinfect all equipment and vehicles before entering and leaving farms
- Maintain and isolate equipment on the farm, do not share materials or vehicles
- Restrict traffic on the property to essential movements and personnel
- Avoid contact with people who have been to other farms, minimize visitors
- Do not visit other farms unless clothing has been changed
- Provide signage, notices and security to alert visitors and restrict access to flocks.
- Provide proper clothing and disinfectants for all personnel
- Minimize exposure to migratory and native birds
- Follow strict protocols for permitting, health certification and isolation of new birds or eggs

Surveillance and Reporting of Avian Influenza

Rhode Island animal health officials routinely screen commercial poultry operations for Avian Influenza and other diseases. All reports of sick poultry and suspicious illness are investigated. Blood samples and viral cultures are collected from live and dead birds for testing at approved laboratories. Private veterinarians will examine birds and submit samples. All suspect cases in poultry must be reported immediately to the Rhode Island Department of Environmental Management's Division of Agriculture. Incidents concerning large numbers of ill or dead wild birds must be reported to the RIDEM Division of Fish and Wildlife. RIDEM has developed and implemented protocols for surveillance throughout the state and the reporting all results. Information and details about AI in poultry and wild birds is available at the addresses and websites listed below.

Rhode Island Department of Environment Management
Division of Agriculture, Animal Health Section
235 Promenade Street, Providence, RI 02908
401-222-2781
401-222-2781 fax

Rhode Island Department of Environmental Management
Division of Fish and Wildlife
4808 Tower Hill Road
Wakefield, RI 02879
401-789-3094
401-783-4460 fax

USDA-Animal Plant Health Inspection Service
Veterinary Services – New England Area
160 Worcester-Providence Rd.
Sutton, Massachusetts, 01590
505-865-1421

Resources and Information

In addition to the above addresses, information and literature about Avian Influenza and biosecurity practices can be obtained on the Internet at:

www.dem.state.ri.us RI Department of Environmental Management
www.health.state.ri.us RI Department of Health
www.usda.gov/birdflu Us Department of Agriculture
www.cdc.gov Center for Disease control
www.pandemicflu.gov White House Official Pandemic Flu site
www.scwds.org Southeastern Cooperative Wildlife Disease Survey
www.usaha.org US Animal Health Association
www.avam.org American Veterinary Medical Association
www.who.int World Health Organization
www.fao.int UN Food and Agriculture Organization
www.oie.int World Animal Health Organization (OIE)
www.doi.gov US Department of Interior