Livestock Notifiable Disease Factsheets

Avian Influenza

If you suspect signs of any notifiable disease, you must immediately notify a Defra Divisional Veterinary Manager.

Definition

Avian influenza is a highly contagious viral disease affecting the respiratory, digestive and/or nervous system of many species of birds. It is caused by a Type A influenza virus. There are two types of avian influenza virus, low pathogenicity (LPAI) and high pathogenicity (HPAI). The last outbreak of avian influenza in Great Britain was in 1992.

History and spread of the disease

A highly pathogenic form of avian influenza was known as "fowl plague". It first appeared in Italy more than 100 years ago (around 1878). Pathogenic avian influenza was first recognized in the United States in 1924-25. It occurred again in 1929. It was eradicated both times. A pathogenic and mildly pathogenic influenza A viruses occur world-wide. Highly pathogenic avian influenza A (HPAI) viruses of the H5 and H7 HA subtypes have been isolated occasionally from free-living birds in Europe and elsewhere. Outbreaks due to HPAI were recorded in the Pennsylvania area, USA, in the years 1983-84. More recently outbreaks have occurred in Australia, Pakistan, Hong Kong, Italy, Chile and Mexico. A serious outbreak of avian influenza in the Netherlands in 2003, spreading to Belgium and Germany, affected some 250 farms and necessitated the slaughter of more than 28 million poultry.

Another serious epidemic of this disease affected Japan, South Korea and south-east Asia early in 2004. There is evidence that H5 viruses of low pathogenicity may mutate and become highly pathogenic.

There were also a small number of cases of avian influenza in the USA and Canada early in 2004. The USA strain in Texas was, however, typed as H5N2, not the same as the strain in South-East Asia.

Clinical signs

Typically the disease presents suddenly with affected birds showing oedema of the head, cyanosis of the comb and wattles, dullness, lack of appetite, respiratory distress, diarrhoea and drop in egg production. Birds may often die without any signs of disease being apparent. However, there can be considerable variation in the clinical picture and severity of the disease.

Post-mortem

Findings vary considerably but congestion and haemorrhages affecting any organs usually predominate. Necrotic foci may be found in the liver, lungs, spleen and kidneys. There may also be exudates in the air sacs and peritoneum and occasionally a fibrinous pericarditis. When the disease affects adult laying birds an egg peritonitis may be a constant abnormality.

Transmission

- Direct contact with secretions from infected birds, especially faeces
- Contaminated feed, water, equipment and clothing
- Clinically normal waterfowl and sea birds may introduce the virus into flocks.
- Broken contaminated eggs may infect chicks in the incubator.

Legislation

The Diseases of Poultry (England) Order 2003 came into force on 30 April 2003. It enacts the requirements of EU Council Directive 92/40/EEC introducing Community measures for the control of avian influenza. Similar legislation is being made for Scotland and Wales. The new Order replaces the Diseases of Poultry Order 1994 and extends these measures to Ratites (ostriches, emus and rhea) as required by EU Directive 92/65. It also contains additional powers to check that disease is not present.

The Avian Influenza and Newcastle Disease (England and Wales) Order 2003 which extends to these two diseases new powers introduced by the Animal Health Act 2002, allowing a preventative or firebreak cull of poultry, providing powers of entry to test and sample, and allowing the slaughter of vaccinated poultry, with compensation. The powers were sought as part of our Emergency Preparedness Programme in the light of increased concerns about the Spring 2003 outbreak of Avian Influenza in the Netherlands and Belgium and in advance of the autumn migratory season, given that these diseases could be introduced by waterfowl.

Main aspects of disease control

i) Infected Premises

Prohibition on movements of animals, litter and vehicles into or out of the infected place. Cleansing and disinfection of premises and vehicles. Schedule 3 of the Animal Health Act 1981 provides for the compulsory slaughter of diseased poultry and poultry which is suspected of being infected or which has been exposed to the infection of disease. Eggs must also be destroyed.

ii) Infected Area

- **Keepers of Poultry / Hatcheries / Slaughterhouses**: Movement restrictions on Poultry and Hatching Eggs within a 3 km and 10 km radius. Poultry must be kept in their living quarters. Markets, Fairs and Shows are prohibited.
- **Waste disposal contractors**: Used litter or poultry manure may not be removed or spread.
- **Hauliers**: Cleansing and disinfection of any vehicle used for the conveyance of poultry, carcases, poultry offal or feathers, or eggs.

iii) Other Control Measures

The Secretary of State may order the vaccination of any species of poultry in a vaccination area. These measures may be applied for three months and may be extended by additional periods of 3 months

iv) Minimum Duration of Controls

An infected premises may not be re-stocked until at least 21 days after disinfection. Protection zone controls apply for at least 21 days after the cleansing and disinfection of the infected premises and then becomes part of the surveillance zone. Surveillance zone controls apply for at least 30 days after cleansing and disinfection.

(v) Compensation

Schedule 3 of the Animal Health Act 1981 states that compensation for poultry which are not diseased shall be the value immediately before slaughter

Further Detail

Restrictions and slaughter provisions apply to domestic fowls, turkeys, geese, ducks, guinea fowls, quail, pigeons, pheasants,partridges and Ratites (ostriches, emus and rhea) reared or kept in captivity for breeding or the production of meat or eggs for consumption or for restocking supplies of game.

Most recent GB outbreak

In 1992 avian influenza was confirmed in a flock of turkeys in Norfolk. Sudden mortality occurred in a single house containing approximately 8,000 18-week old turkeys. A 10 km infected area was declared (The Fowl Pest (Infected Areas Restrictions) Order on 20 January 1992. This prohibited movement of poultry from within the infected area except for slaughter until, following extensive surveillance, the. infected area restrictions were withdrawn.

Pictures of the disease

Swelling of the wattles

Blue discoloured comb of an infected chicken on the left compared to a normal chicken on the right.

Congestion and blood spots on the skin of hocks and shanks.

HPAI - Opened swollen wattle.

Photo credits: United States of America Animal Health Association

Information current of June 16, 2005