Preliminary Outbreak Assessment

Outbreaks of H5N2 HPAI in poultry in Canada and an update on situation in the USA and Europe

10th April 2015

Ref: VITT/1200 HPAI in Canada, USA & Europe

Disease Report

Canada has reported an outbreak of H5N2 highly pathogenic avian influenza (HPAI) in Ontario (see map; OIE, 2015). Turkeys for meat and broiler breeders have been affected and in the one affected shed 75% of birds died. Disease control measures have been implemented including 3km protection and 10km surveillance zones (OIE, 2015). The suspected source of infection may be contact with wild birds as waterfowl were observed around the farm in the preceding days. No epidemiological links were reported with the outbreaks in British Colombia in 2014 however initial sequence analysis indicates the virus is the same Eurasian H5 origin as has been circulating in North America.

In the USA since our last update in March, there have been six further confirmed outbreaks of H5N2 HPAI in Minnesota and one in South Dakota on commercial turkey farms. The USDA APHIS website (USDA, 2015) reports additional information on the individual outbreaks and three more have been reported in the last 48 hours, 2 in Minnesota and 1 in South Dakota.

The USA has also reported H5N2 HPAI in two backyard holdings: one in Montana and the other in Kansas; and in wild birds, an infected Canadian Goose (Branta canadensis) in Wyoming, a captive Gyrfalcon in Montana and a captive hybrid falcon in Missouri. In addition there have been further cases of H5N8 HPAI in wild birds, two in American wigeon (Anas americana) in California and one in a Canada goose (Branta canadensis) in Oregon. To date, 51 wild birds have tested positive for H5N1, H5N2 or H5N8 infection in
various States since December 2014 (USDA, 2015). All the identified viruses are East Asia / America lineage reassortments.

In Europe, cases of H5N8 HPAI in wild birds were reported in mute swans (Cygnus olor) found dead in Sweden (OIE, 2015b), although avian influenza may have been a coincidental finding and not the cause of death. Both Bulgaria and Romania have reported cases of H5N1 HPAI in Dalmatian pelicans found dead. Genetic analyses of the virus from Bulgaria places it in clade 2.3.2.1c, which is distinct from the viruses in Israel and Egypt. These clade 2.3.2.1c viruses reached the EU previously in 2010 also in association with wild bird infection. The map also indicates the outbreaks of low pathogenicity avian influenza reported in EU Member States in the past few weeks.

In the Middle East, Palestine has reported a further outbreak of H5N1 HPAI in backyard birds in the Gaza strip. Please note, in our report last month of outbreaks in Israel, the phrase “in turkeys and broilers” should have read “turkeys and broiler breeders”.

In West Africa, Burkina Faso has reported 4 outbreaks of H5N1 HPAI: three in backyard flocks and one in commercial poultry.

**Situation Assessment**

This year there has been a significant increase in the number of cases of Avian Influenza reported in North America. The H5N2 HPAI virus is a reassortment containing the haemagglutinin gene from a Eurasian H5N1 virus and the neuraminidase gene that is found in wild birds in North America. The virus was first reported in Canada on 30 November 2014 in the Fraser Valley in British Columbia on the Pacific Flyway. Since then it has been reported in the western USA, with outbreaks in Washington State, Oregon and Idaho, then along the Mississippi flyway with the first outbreak in Minnesota reported on 26th February 2015.
Recent research has shown evidence of intercontinental viral dispersal by migratory birds (Verhagen et al., 2015; Ramey et al., 2015). The Verhagen paper reported that H5N8 HPAI virus was recovered from wild bird samples from around the outbreaks in the Netherlands and sequence analysis of these and other wild bird samples, coupled with ring data for the birds provided evidence for the indirect migratory connections between East Asia and Western Europe and between East Asia and North America. The events in Europe and North America still represent an exceptional year considering the geospatial and temporal patterns of outbreaks in the absence of other epidemiological links. Until November 2014, North America had not been affected by these highly pathogenic viruses, so the reports on intercontinental links still leave questions about the events this year and whether this will be repeated in the coming years.

The USA outbreaks are not concentrated in one particular area anymore but are spread across several States and along three major migratory wild bird flyways. The recent commercial farms affected have been turkey production units in Minnesota, which is the largest turkey producing State in the USA, producing 46 million birds annually from approximately 600 turkey farms (Minnesota Turkey, 2015). At present these outbreaks are assumed to be isolated introductions through contact with wild birds.

According to TRACES, the EU Trade notification system, there have been no recent consignments of poultry (live, day old chicks or hatching eggs) destined for the UK from the affected region in Canada. In the USA, restriction zones are applied, as required, across each affected State and therefore poultry and certain poultry products are currently not approved for export to the EU.

**Conclusion**

There is no specific increase in risk for disease incursion into the UK as a result of these latest outbreaks. We consider there to be a constant low risk of incursion of any notifiable avian disease into poultry throughout the year and the current situation in Europe means the UK is still at an increased risk.

We will continue to report on the situation. We would like to remind all poultry keepers and attending veterinarians to maintain high standards of biosecurity, remain vigilant and report any suspect clinical signs promptly.

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