Updated Situation Assessment #9

Highly pathogenic avian influenza (HPAI) in Europe

22 January 2020

Ref: VITT/1200 HPAI in Europe

Disease report

Since our last report on 14 January 2020, Poland, Hungary and Romania have reported further H5N8 HPAI outbreaks. In addition to this, the Czech Republic and the Ukraine have each reported outbreaks of H5 HPAI in poultry for the first time this winter, and Germany has also reported a case of H5N8 HPAI in a wild water bird. Measures in accordance with Council Directive 2005/94/EC have been implemented, including culling of the poultry at all affected premises, followed by disposal of the carcasses.

**Czech Republic** confirmed its first outbreak of H5N8 on 17 January in poultry (ducks and hens) in a backyard holding with 15 birds in the Vysocina region. Control measures in accordance with Council Directive 2005/94/EC were completed on 18 January.

**Hungary** have confirmed three further outbreaks in poultry since our last report on 14 January, bringing their total number of outbreaks to four since their first report on 12 January. Following the first outbreak in the north of the country in Komárom-Esztergom, three more large scale holdings were identified within the Protection Zone (PZ) for precautionary depopulation. Two of these large commercial premises (~54,000 turkeys in total) had H5N8 HPAI confirmed as depopulation was ongoing. The fourth outbreak was reported in a large commercial premises (~115,000 ducks) in the eastern region of Hadju-Bihar, close to the Romanian border, with H5N8 HPAI confirmed on 14 January following disease suspicion based on increased mortality and pathological lesions. Though tracings and investigations are ongoing, wild birds have been identified as a possible source of infection. A 3km PZ and 10km Surveillance Zone (SZ) have been established.

**Germany** confirmed its first case of H5N8 HPAI on 19 January, in a Eurasian coot (*Fulica atra*) in the north eastern region of Spree-Neisse, close to the Polish border (OIE reports this as a Greater white-fronted goose (*Anser albifrons*). If this is the case, it represents the first case in a high risk wild waterfowl species). At this stage, we believe they represent the same case, but we will continue to monitor updates from ADNS and OIE. Work to determine the source of infection is ongoing.

**Poland** has reported three outbreaks of H5N8 HPAI in poultry in the south-west of the country since our last report on 14 January (see map), bringing the total number of
outbreaks to 14. Two of the outbreaks (one in 54 reproductive ducks, one in 24,000 fattening ducks) were in the county of Ostrowski, and the birds have been culled in the two premises. The third outbreak involved a backyard holding, keeping 549 birds of different species, including laying hens, geese and ducks, in the western region of Legnicki, approximately 90km from the German and Czech borders. Control measures have been implemented. There have been no further reports of HPAI in wild birds in Poland after the Northern Goshawk (*Accipiter gentilis*) reported on 06 January in the PZ in the east.

**Romania** reported its second outbreak of H5N8 HPAI in poultry (laying hens) on 17 January. The outbreak was in a commercial premises holding approximately 22,000 birds, and located in the county of Maramures, less than 1km from the first outbreak. Culling is currently in progress.

**Slovakia** has reported no further cases since our last report.

**Ukraine** confirmed its first H5 HPAI outbreak in poultry on 19 January in a commercial premises of 98,000 birds in the Vinnytsya region. Quarantine has been implemented, stamping-out and other control measures are ongoing.
Situation assessment

According to recent PAFF presentations (PAFF, 2020), phylogenetic analysis of H5N8 HPAI samples from Poland and other European cases analysed so far (Hungary and Slovakia) show the current strain is different to strains previously observed circulating in Europe, but displays some similarity in the HA gene segment with a virus collected in Nigeria in 2019, and South African viruses from the previous year. However, the match carries some level of uncertainty indicating precise origins require further investigation. In addition, further analyses at whole genome level indicate that some genes (NP and PB1) are different to those of the African strains, clustering with those of viruses collected from wild birds in Russia in 2018. These results would indicate a reassortment event between H5N8 HPAI and LPAI viruses potentially in Eurasia. Further preliminary analyses suggests that a common progenitor virus may have been present undisclosed (to date) since late 2017.

These preliminary results show consistency with previous patterns of H5 HPAI virus emergence in Europe whereby previously circulating strains coevolve with strains in wild birds accompanied by changes in the HA and or neuraminidase genes allowing the virus to escape wild bird population immunity and spread widely. Overall this data indicates gaps in knowledge which preclude precise origins of the European viruses to be determined with certainty at this time (and therefore pathways for spread) but conventional modes of spread from the ‘east’ in wild birds still appears a plausible pathway (IRL APHA pers comm).

According to FAO, it is likely wild birds have played a role in the dissemination of virus across Eastern Europe (FAO, 2020), although there has been some limited local spread between domestic flocks in Eastern Poland. Introduction by wild birds is supported by the epidemiological investigations of these outbreaks (FAO, PAFF, 2020). In particular, the outbreak in Slovakia in a backyard flock with no links to any commercial premises supports this hypothesis. These observations are further supported by the demographic of emerging poultry cases with limited evidence for linkage between these cases across EU countries. FAO also reports that Eastern Europe experienced seasonally warmer temperatures in November and December 2019; although it is unclear what significance this may have in the current situation.

The recent increase in reporting of outbreaks across Eastern Europe may also be due to a rapid response and heightened awareness in these countries. Wild bird surveillance in the EU relies solely on reporting of dead wild birds; the single Northern goshawk reported in Poland may have had access to contaminated/infected poultry within the PZ rather than scavenging dead wild waterfowl, or indeed catching live infected wild birds. There has now been a single report of H5N8 HPAI in a water bird in Germany, near the border with Poland. Circulation in wild birds, although there is limited direct evidence for it (potentially due to the nature of the surveillance), is indicated indirectly and cannot be ruled out particularly if only a small proportion of infected birds showed clinical signs.
According to data available on TRACES, GB imported one consignment of live poultry (*Gallus gallus*) from the Vysocina region of the Czech Republic in December 2019. GB has not imported any live birds or eggs from any of the other areas surrounding these outbreaks in the last few weeks.

**Conclusion**

The OIE/FAO international reference laboratory/UK national laboratory at Weybridge has the necessary ongoing diagnostic capability for these strains of virus, whether low or high pathogenicity AI and continually monitors changes in the virus.

Given the recent findings in domestic poultry in Eastern Europe, the limited findings in wild birds across Europe, and the possibility of migration to the UK if the weather were to become cold in Eastern Europe, currently the risk of HPAI in wild birds in the UK is LOW (i.e. no change at present) but we are monitoring this very closely. The risk for poultry in the UK remains low for introduction of infection onto individual premises, but will depend on levels of biosecurity which we recommend should be increased. We are keeping this under review.

The numbers of wild waterfowl in the UK will generally have peaked by January, with most migratory birds already present at their wintering sites in the UK. Adverse weather may result in further influxes from the continent. For example, numbers of mallard duck (*Anas platyrhynchos*) usually peak in October and December in the UK and fewer waterbirds may be migrating to the UK from western Europe at this stage of the winter. Indeed, the bird migration flyways indicated on the map above relate more to spring and autumn passage and may not be particularly relevant at this time of the year. It cannot be concluded at this stage that the virus is not already present in birds in western Europe and that outbreaks in poultry will not spread west in the next few weeks. The risk to UK poultry depends upon the level of biosecurity implemented on farm to prevent the direct or indirect contact with wild birds. It should be noted that the virus could potentially survive on pasture in wild bird faeces for several weeks at current ambient temperatures emphasising importance of these measures.

Outbreaks of HPAI in domestic poultry are increasing and spreading across Eastern Europe into the Ukraine. Due to the lower numbers of H5 HPAI outbreaks observed in 2018/19 (especially lower incidence in wild birds associated with mortality) compared to previous years, there may now be more limited immunity in the naive wild bird population to H5 viruses, with a large susceptible population of avian hosts in the form of juvenile birds which migrated to the UK in autumn 2019.

We recommend that all poultry keepers stay vigilant and make themselves aware of the latest information on www.gov.uk, particularly about recommendations for biosecurity and how to register their flocks.
We will continue to report on any updates to the situation in Europe and, in particular, any changes in disease distribution or wild bird movements which may increase the risk to the UK.


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References
All outbreaks and cases were taken from the Animal Disease Notification System (ADNS)


PAFF (2020) https://ec.europa.eu/food/animals/health/regulatory_committee/presentations_en

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