Preliminary Outbreak Assessment

Newcastle disease in Belgium

16th July 2018 Ref: VITT/1200 ND in Belgium

Disease report

In July, two outbreaks of Newcastle Disease (ND) have been reported in commercial poultry at premises in East Flanders in Belgium (OIE, 2018 and Belgian FASFC (2018)). One premises had >3,600 poultry present and was reportedly a dealer in hobby birds, according to the Belgian Authorities. The second outbreak was in a much larger commercial premises with approximately 60,000 poultry and, according to the disease report, fewer than 10% of birds showed severe clinical signs or mortality (OIE, 2018). In addition to this, since June, the Belgian Authorities have reported ten outbreaks of Newcastle Disease (ND) at hobbyist poultry keeper premises in Liege, Antwerp, Hainaut, Brabant Wallon, Brabant Flamand, East Flanders and West Flanders. For each of these reported cases in non-commercial poultry, there are no commercial poultry premises within the 500m zone. The birds on each premises are kept in captivity. The species of birds affected, and the species of birds kept at each of the premises have not yet been reported. According to the reports made by the Authorities at the EU Standing Committee on the Plants, Animals, Food and Feed Animal Health meeting, (PAFF, 2018), any birds showing clinical signs are being enthanased, while other birds present are being vaccinated.
There was also a report of ND in Luxemburg in May, at a location on the border with Belgium, at a premises with 13 hobby birds, and one in Belgium on the 26th April in Liege, also in hobby birds.

**Situation assessment**

Newcastle Disease is a serious notifiable disease of poultry which can cause large losses in unvaccinated domestic poultry, particularly chickens. It is considered endemic in many countries in Central and South America, Asia, the Middle East and Africa and is occasionally reported in Europe most often in backyard systems in the east. The causative agent, avian avulavirus type -1 (formerly Avian Paramyxovirus-1) is highly variable in its ability to infect different avian species and to cause differing severity of disease. The most virulent form causes an acute, lethal infection in chickens and is referred to as velogenic or highly virulent (AAvV1 termed ND). In terms of the diagnostic tests, the intracerebral pathogenicity index (ICPI) is the gold standard for pathogenicity determination and often velogenic viruses have an ICPI approaching 2.0 (all infected birds die within 24 hours).

ND is transmitted most often by direct contact with diseased or carrier birds. Infected birds may shed the virus in their faeces, contaminating the environment. Transmission can occur by direct contact with faeces and respiratory discharges or by contaminated food, water, equipment, and human clothing. Newcastle disease is a mild zoonosis (disease of animals that can also infect humans) and can cause conjunctivitis in humans, but the condition is generally very mild and self-limiting.

Several genetic lineages within the AAvV-1 group of viruses have been reported in recent years in the EU. Amongst the virulent strains are the genotypes VII (or lineage ‘5’) XIII (5b lineage) and VI (lineage 4, primarily associated with pigeons). A new subgroup of genotype VII emerged in Europe in 2013 and subsequently spread, being associated with outbreaks in Bulgaria, Romania and the Republic of Cyprus. The rapid spread of a virus, shown to have derived from the Middle East/Central Asia region, was assumed to be as a result of human activity rather than wild bird mediated spread (Fuller et al, 2015) but to date has largely been associated with ‘backyard’ production. Anecdotally the virus has also been reported in flocks that were ND vaccinated but substantive data is either limited or lacking. The largest commercial premises where ND has been reported had approximately 60,000 poultry. Of these, around 6,000 were reported dead. In Belgium, vaccination against ND is mandatory. Given this low mortality rate, we understand (pers communication, ND EURL) that there may be issues with the vaccine and its match/level of efficacy to this relatively new strain of the virus in Europe.

The majority of the Belgian cases are in hobby keeper premises which raises the question around whether they are linked to a dealer or market, explaining the wide spread distribution in Belgium. Further, the use of vaccine whilst required in Belgium in this sector is difficult to assure.
Preliminary genetic analyses conducted at the EURL in conjunction with colleagues from the Belgian and Luxembourg NRLs for ND reveal the virus is closely related to contemporary strains from the east of Europe. This raises questions on the possible spread pathway, whereby this strain of virus has been introduced to North and Western Europe for the first time. The virus appears to have been introduced into birds and possibly spread through the local market system in a partially vaccinated population. The precise source is at present unknown but pathways other than wild birds should also be considered.

In terms of trade, since 1st June we have received 7 consignments of live poultry (turkeys, chickens and pheasants) and three of gamebirds from Belgium (total of 17,265 poultry and 12,000 gamebirds). Two of these consignments have been from East Flanders, where the ND outbreaks in commercial premises have been reported.

However, as the majority of outbreaks are not being reported in commercial poultry, it is of note that small consignments of fewer than 20 birds (that is poultry rather than pet birds), which may be typical of the hobby keeper, should be accompanied by an Intra-community trade health certificate relating to the flock of origin and by pre-notification in TRACES for intra-community trade. This certification may not include the details of the dealer’s establishment and, indeed, the time since the birds left the flock of origin may be of little relevance if the birds have been mixing in a show, at a gathering or a dealer’s premises. The precise host range of this virus is uncertain but gamebirds do present a theoretical pathway for introduction, and imported pheasants were proven to be the source of an outbreak in southern England in 2005. Gamebirds can present atypically or even asymptptomatically when infected with strains of AAvV-1 including some virulent for chickens.

Conclusion

As the variety of species of wild bird which may be susceptible and may act as a reservoir for ND is wide, we generally consider there is a constant low risk of introduction of the AAvV-1 into the domestic poultry sector; hence the recommendation for poultry keepers to consider vaccinating their flocks. However, as a result of these new outbreaks, given the number, the level of contact in the sector and the concern over the vaccination status / vaccine matching to this strain of ND, we consider the risk to the UK for incursion of ND is now MEDIUM (that is, event occurs regularly). There are several pathways by which disease could be introduced to the UK: through the movement of live birds, the movement of wild birds, contact with fomites and contaminated equipment, clothing or transport or contact with infected meat and meat products.

We will continue to monitor the situation closely, as this is an important exotic disease which will be a concern for the EU in terms of its ability to spread and the impact on poultry.
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References

All disease reports are available from the ADNS database.


https://ec.europa.eu/food/animals/health/regulatory_committee/presentations_en#20180712