



Ref: VITT1200/ND-NRW

**PIGEON PARAMYXOVIRUS TYPE 1
(NEWCASTLE DISEASE)
OUTBREAK**

IN

NORWAY

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Summary

An outbreak of ND was confirmed in a hobby flock comprising of 80 pigeons, 28 dwarf hens and 4 Muscovy ducks. The flock was located in Buskerud department in southern part of Norway. Presence of the disease was suspected on 3 October 2003, and the whole flock was subsequently depopulated. The disease was officially reported on 28 October 2003.

The outbreak was caused by a pigeon paramyxovirus type 1 (PPMV-1) with an intracerebral pathogenicity index (ICPI) of 0.4. This is lower than the level of pathogenicity (0.7) which defines that infection with this virus must be reported and controlled under EU rules. Norway is a member of EEA and follows disease control rules as applied in the EU

The initial information indicates that the outbreak was confined to this single flock. There are no reports of the disease outbreak in commercial poultry. Apart from destruction of carcasses, there is no information on any other control measure taken by the Norwegian authorities. The UK has not imported live birds, poultry meat and hatching eggs from Norway during the estimated six weeks risk period before the date when the disease was suspected, or subsequently.

While an outbreak of ND disease in any Member State is of concern, the Veterinary Directorate considers the risk of ND spread from this outbreak to UK via legal trade to be negligible. The presence of PPMV-1 has also been diagnosed in pigeon population in UK. In general, this event highlights the existence of a background risk to commercial poultry from feral pigeons and wildfowl as potential carriers of PPMV-1.

1. NEWCASTLE DISEASE - NORWAY

1.1 Disease Report

The last case of Newcastle disease (ND) in Norway was reported to OIE in 1996. On 28 October 2003, OIE was notified¹ of an outbreak of ND in Buskerud department in the south of Norway (Fig.1). The affected flock was a hobby flock comprising 80 pigeons, 28 dwarf hens and 4 Muscovy ducks.

A total of 50 birds were affected and ten birds died. The whole flock was subsequently destroyed and the carcasses buried. Epidemiological investigation is underway to determine the possible source of infection.



Fig.1. Norway – location of ND outbreak in a hobby flock

The limited information that was made available on this outbreak indicates that clinical suspicion of the disease (refer to Annex 1) was raised on 3 October 2003. The presence of pigeon paramyxovirus type 1 (PPMV) with an intracerebral pathogenicity index of 0.4 was demonstrated.

2. LEGAL TRADE – CURRENT SITUATION

2.1 Live birds

The IAHN electronic database indicates that there were no imports of live poultry, other birds or hatching eggs. This data is going back six weeks from 3 October 2003, the date when the disease presence was first suspected in Norway. This period is twice the time of the maximum incubation period for ND, as specified by the OIE.

¹ OIE, (2003). Alert Message. Newcastle disease in Norway

2.2 Meat/meat products

Intra-community trade in poultry meat is not subject to border inspection controls or electronic notification of consignments. In the case of ND outbreaks, affected Member States are required to impose EU rules in the protection and surveillance zones around outbreaks. Imports of poultry meat are subject to EU rules.

2.3 NDV-like disease in pigeons

The disease is caused by avian paramyxovirus type 1, known as pigeon PMV-1 (PPMV-1), which is an antigenic and host variant of ND virus of chickens. PPMV-1 has possibly originated as a result of multiple chicken to pigeon transmissions². A summary of data³ from the literature indicates that the virus was isolated for the first time from pigeons in the Middle East in 1978, from where it spread rapidly throughout Northern Africa. In 1981, it was isolated from racing pigeons in Italy. Within the next three years, the virus spread throughout Europe. In 1984, the PPMV-1 virus was epidemiologically linked to outbreaks of ND in chickens in the UK.

The virus has been isolated from doves and ornamental birds, in addition to isolates from commercial and feral pigeons. Most PPMV-1 strains appear to belong to the intermediate group of ND viruses, which show reduced virulence in chickens. In the past, ND-like disease in pigeons often occurred subsequent to outbreaks in chicken. Vaccination of commercial pigeons against PMV-1 is used as a prophylactic measure to control the infection, however, the use of this vaccine is sporadic. It has been suggested that there is possible PPMV-1 strain circulation among racing and show pigeons².

3. NEWCASTLE DISEASE RESTRICTIONS IN PLACE

3.1 The situation in Norway

The last reported outbreak of ND in Norway was in 1996. Norway prohibits the use of vaccination against ND. Norway is not a member of EU, but is a member of EEA.

Following the confirmation of ND on 23 October 2003, the Norwegian authorities reported that all birds from the affected holding were destroyed. No

² Ujvari, D., Wehmann, Kaleta, E.F., Werner, O., Savic, V., Nagy, E., Czifra, G., Lomniczi, B. (2003). Phylogenetic analysis reveals extensive evolution of avian paramyxovirus type 1 strains of pigeons (*Columba livia*) and suggests multiple species transmission. *Virus Research*, 96, 63-73.

³ Seal, B., King, J.D., Sellers, S.H., (2000). The avian response to Newcastle disease virus. *Developmental and Comparative Immunology*, 24, 257-268.

information is available on further control measures. According to OIE⁴, Norway applies import controls and stamping out as disease control measures.

4. ASSESSMENT OF THE RISK TO THE UK

On the basis of current information on the outbreak of ND in Norway, the Veterinary Directorate presently considers that with regard to:

4.1 Legal trade in:

4.1.1 Live poultry/birds

- The risk is negligible as no live poultry or birds have been imported from Norway during the past three months.

4.1.2 Poultry meat/meat products

- The risk is negligible as import of poultry meat or meat products must comply with EU rules.

4.1.3 Hatching eggs

- The risk is negligible as no hatching eggs have been imported from Norway for the past three months.

4.2 Feral pigeons and wildfowl

- It is highly unlikely that feral pigeons from Norway would pose a threat to UK birds. The risk of the introduction of the Norway PPMV-1 strain to the UK by other wildlife (i.e. wildfowl) is difficult to quantify.
- The type of risk posed is unlikely to exceed the level of the existing (and unmanageable) background risk posed by UK feral pigeon and wildfowl populations, and wild birds migrating to, or through, the UK.

⁴ OIE, (2001). World Animal Health in 2001. Part 2. Tables on animal health status and disease control measures, Paris, France, p.587.

4.3 Illegal trade

- Illegal movements of poultry meat/meat products may pose a risk for the introduction of the disease from infected countries worldwide. Although this type of risk is difficult to quantify, it appears that the background risk remains unchanged given that Norway is a part of EEA.

5. CONCLUSION

The initial information indicates that the outbreak was confined to a single hobby poultry flock. There are no reports of localized spread of disease amongst commercial poultry flocks. Norway has destroyed all birds from the affected holding.

The Veterinary Directorate continues to monitor the situation and will re-assess the hazard if new information becomes available.

Although this outbreak poses a negligible risk to UK animal health, it highlights the general existence of a background risk to commercial poultry posed by feral pigeons and wildfowl, and migratory birds as potential carriers of PPMV-1.

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Annex 1. Background note on Newcastle Disease

Newcastle disease (ND) is a viral disease affecting a wide range of bird species, including domestic poultry and many wild and migratory birds in which a long term carrier state may exist. It is an endemic disease in a number of countries throughout the world. The last outbreak in the UK occurred in 1997 and the most recent in the EU occurred in Denmark in 2002

ND causes respiratory and/or nervous signs with gasping and coughing, drooping wings, dragging legs, twisting of the head and neck, circling, depression, inappetence and complete paralysis. There may be swelling of the tissues around the eyes and in the neck and a partial or complete cessation of egg production. Eggs from diseased birds may be misshapen, rough-shelled, thin-shelled and contain watery albumen. The birds may have a greenish watery diarrhoea.

The degree to which birds become affected and the mortality within a flock depend on virulence of the virus strain, degree of vaccinal immunity, environmental conditions, and condition of the flock .

Like avian influenza (to which the Newcastle disease virus is NOT related), the disease is primarily spread by contact with faeces or respiratory secretions from infected birds. Contaminated feed or water may also spread the disease. It is the movement of contaminated people, vehicles and things between flocks that is most likely to spread disease. Flock owners should always follow the principles of good biosecurity already published on the Defraweb <http://defraweb/animalh/biosecurity/farmguidance/poultrybiosec.pdf>

Unlike avian influenza, an effective commercial vaccine is available. Because of the constant threat of introduction of disease by wild birds, breeding flocks and commercial egg laying flocks (which have a life expectancy of some 60 – 72 weeks) are invariably vaccinated. Broiler flocks tend not to be for two reasons: first the cost and effectiveness of vaccination set against their relatively short life; second, the potential adverse effect on bird health of adding to the list of vaccines these birds are already subject to and which have to be given when they are newly hatched.

To a large extent, therefore, the National flock has a good degree of protection against incursion of disease. There are a number of Newcastle Disease vaccines authorised for use on the market in the UK and there are no restrictions on their use in accordance with any Marketing Authorisation.