



Ref: VITT1200/ND-SW

# PIGEON PARAMYXOVIRUS TYPE 1 (NEWCASTLE DISEASE) OUTBREAK

## IN

## SWEDEN

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## Summary

An outbreak of ND was confirmed in a hobby flock comprising of 30 turkeys, 10 laying hens, 1 cock and 40 pigeons. The flock was located in Dalarna region in Sweden. Presence of the disease was suspected on 16 September 2003 and the flock was depopulated on 26 September 2003. The presence of pigeon paramyxovirus type 1 (PPMV-1) was officially confirmed on 24 October 2003.

The initial information indicates that the outbreak was confined to this single flock. There are no reports of the disease outbreak in commercial poultry. Sweden has taken control measures in line with EU rules. UK has not imported live birds, poultry meat and hatching eggs from Sweden during the estimated six weeks risk period prior to 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. This event, however, highlights the existence of a background risk to commercial poultry from feral pigeons and wildfowl as potential carriers of PPMV-1.

# 1. NEWCASTLE DISEASE - SWEDEN

## 1.1 Disease Report

On 24 October 2003, Defra received a notification<sup>1</sup> of an outbreak of Newcastle disease (ND) in Sweden in the Dalarna region. The affected hobby flock comprised of 30 turkeys, 10 laying hens, 1 cock and 40 pigeons.



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

The limited information available on this outbreak indicates that clinical suspicion of the disease (refer to Annex 1) was raised on 16 September 2003. All birds in the flock were destroyed on 26 September 2003. The reference laboratory in the UK confirmed the presence of ND virus with an intracerebral pathogenicity index (ICPI) of 1.25 on 23 October 2003. According to EU rules, this virus pathogenicity means that this outbreak must be reported and controlled as outbreak of Newcastle disease.

## 2. LEGAL TRADE – CURRENT SITUATION

### 2.1 Live birds

The IAHD electronic database indicates no imports of live poultry, other birds or hatching from Sweden. This data is going back six weeks from 16 September 2003, the date when the disease presence was suspected in Sweden. Six weeks is twice the maximum incubation period for ND specified by the OIE.

<sup>1</sup> SANCO-ADNS, (2003). Notification by e-mail of 24 October, 2003

## 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, including the protection and surveillance zones around outbreaks (refer to section 3).

Data from H M Customs and Excise indicate that 171.000kg of poultry meat was imported from Sweden between January and July 2003. These imports were subject to EU rules (refer to 4.2.1)

## 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 chicken. PPMV-1 has possibly originated as a product of multiple chicken to pigeon transmissions<sup>2</sup>. A summary of literature data<sup>3</sup> indicated that the virus was isolated for the first time from pigeons in Middle East in 1978 from where it rapidly spread across 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 chicken in UK.

The virus was 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 have reduced virulence in chicken. In the past, ND-like disease in pigeons was often subsequent to outbreaks in chicken. Vaccination of commercial pigeons against PMV-1 is used as a prophylactic measure to control the infection. It has been suggested that there is possible PPMV-1 strain circulation among racing and show pigeons<sup>2</sup>.

## 3. NEWCASTLE DISEASE RESTRICTIONS IN PLACE

### 3.1 Situation in Sweden

In February 2001, the Swedish national surveillance programme for ND detected the presence of antibodies for ND virus in a grandparent flock for

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<sup>2</sup> 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.

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

broiler production. During this isolated episode, an ND virus with ICPI of 1.2 was isolated. No further incidents were reported subsequently<sup>4</sup>.

Sweden prohibits the use of vaccination against ND. Following the confirmation of ND on 23 October 2003, the Swedish authorities have applied ND control measures (a 3km protection zone, within a 10km surveillance zone) required under national and European legislation. These measures include transport restrictions for live poultry, hatching eggs, fresh poultry meat, consumption eggs, and poultry litter/manure within the zones. EC considers that the received information does not indicate any disease spread from the affecting holding. The European Commission has concluded that the information received from Sweden does not require the adoption of additional measures at the Community level<sup>5</sup>.

## **3.2 European legislation - ND**

### **3.2.1 Summary**

EU rules (refer to Annex 2) prevent trade in poultry and other commercial or pet birds from areas under restriction or in meat derived from such birds. Poultrymeat products can be traded only if they are first subjected to treatment sufficient to destroy the virus. Table eggs can be traded from holdings not under suspicion of being infected, subject to normal community hygiene rules. These present a low risk of spreading the disease.

## **4. ASSESSMENT OF THE RISK TO THE UK**

On the basis of current information on the outbreak of ND in Sweden, 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 Sweden 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.

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<sup>4</sup> OIE, (2002). OIE World Animal Health in 2001. Part 1. Reports on the Animal Health Status and Disease Control Methods and Tables on Incidence of List A Diseases. Paris, 2002

<sup>5</sup> European Commission, (2003). Health & Consumer Protection Directorate-General, Brussels, SANCO/E2/BVG/ck(03)D5/522316, NCD-SE 001, Monday, 27 October, 2003.

### 4.1.3 Hatching eggs

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

### 4.2 Feral pigeons and wildfowl

- It is highly unlikely that feral pigeons from Sweden would pose a risk to UK birds. The risk of the introduction of the Sweden 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 existing (and unmanageable) background risk posed by the UK feral pigeon and wildfowl populations, and wild birds migrating to, or through, the UK.

### 4.3 Illegal trade

- Illegal movements of poultry meat/meat products may pose a background risk for the introduction of the disease from infected countries worldwide. Although this type of risk is difficult to quantify, it appears that the risk remains unchanged by this limited outbreak given the history of sporadic outbreaks of ND in EU.

## 5. CONCLUSION

The initial information indicates that the outbreak was confined to a single hobby poultry flock. There are no reports of disease outbreaks in commercial poultry. Sweden has taken control measures in line with EU rules during investigation of the suspected case and following confirmation of the disease.

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

Sweden has applied EU controls in the protection and surveillance zone around the infected holding. This outbreak poses a negligible risk to the UK animal health. However, this outbreak highlights the existence of a background risk to commercial poultry posed by feral pigeons and wildfowl, and migrating 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.

## **Annex 2. ND – Detailed EU rules**

The Council Directive (92/66) defines control measures against ND in poultry, racing pigeons and other birds in captivity. It does not apply if ND is detected in wild birds.

### **1. Initial investigation**

Following a suspicion of ND, an affected holding is quarantined and movement of poultry, poultry meat, animal feed and litter/manure from the affected holding is prohibited. During this phase, transport of eggs destined for further processing in an approved establishment may be allowed. These measures remain in place until the disease is either ruled out or confirmed.

### **2. ND confirmation**

If ND is confirmed, the following measures apply:

#### **2.1 Protection zone**

A Protection zone must be established around the infected holding. This zone has a minimum radius of 3km.

##### **2.1.1 Affected holding**

All birds on the affected holding must be killed and destroyed. The meat of slaughtered poultry during the presumed incubation period must be traced and destroyed. The same applies to hatching eggs and table eggs. Poultry that have already been hatched are subject to official surveillance. Table eggs may be exempted from destruction if proper disinfection was carried out. Any waste is subject to traceability and appropriate treatment to destroy the virus. If that is not possible, such waste is destroyed. Cleaning and disinfection of the holding, equipment and transport vehicles must be thoroughly carried out. Any neighbouring and other identified traceforward holdings may be subject to the above measures.

However, if the virus has an intracerebral pathogenicity index (ICPI) of  $>0.7$  and  $<1.2$ , the holding may be exempted from above measures. In these cases, the affected holding is placed under official surveillance for 30 days, and remains quarantined with restrictions imposed on all movements. Appropriate cleaning and disinfection is required. Poultry may be sent to slaughter, however they must be kept and slaughtered separately. Meat of such poultry is given a special health mark and must be subjected to a specified heat treatment, or sold only on the national market.

## **2.2 Surveillance zone**

The surveillance zone that surrounds a protection zone must be established taking into account geographical, administrative, ecological and epidemiological factors relevant to ND. This zone includes the protection zone and has a radius of at least 10km from the affected holdings.

All poultry holdings within surveillance zone must be subjected to clinical examination and laboratory testing. Movement restrictions must apply to poultry handlers, poultry, poultry meat, hatching eggs, litter/manure, and transport vehicles. Poultry may be sent directly to slaughter at an approved establishment. This poultry meat is subject to a special health mark and must be subjected to a specified heat treatment, or sold only on the national market. Cleaning and disinfection activities must be carried out under official supervision. Fairs, markets, shows or other gatherings of poultry and other birds are prohibited.

Vaccination of poultry and commercial pigeons is subject to authorisation of the competent authority.