



International Animal Health Division

International Animal Disease Monitoring

Qualitative Risk Assessment



Ref: VITT 1200/HPAI-NORTH KOREA

**REPORTED OUTBREAK OF  
AVIAN INFLUENZA  
IN  
THE DEMOCRATIC PEOPLE'S REPUBLIC OF  
KOREA (NORTH KOREA)**

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# Table of Contents

1	SUMMARY .....	3
1.	INTRODUCTION.....	4
2	TERMINOLOGY.....	4
3	HAZARD IDENTIFICATION.....	4
3.1	REPORTED HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI) IN NORTH KOREA - DISEASE REPORT .....	4
3.2	HPAI IN NORTH KOREA - HISTORIC INFORMATION .....	5
4	RISK ASSESSMENT .....	5
4.1	RELEASE ASSESSMENT – LEGAL TRADE (CURRENT SITUATION).....	5
4.1.1	<i>Imports not permitted</i> .....	5
4.1.2	<i>Permitted imports</i> .....	6
4.1.2.1	Captive and pet birds.....	6
4.1.2.2	Processed game trophies of birds .....	7
4.1.2.3	Processed and unprocessed feathers .....	7
4.1.3	<i>Other possible routes</i> .....	8
4.1.3.1	Arriving passengers & fomites.....	8
4.1.3.2	Illegal trade .....	9
4.1.3.3	Migratory wildfowl .....	10
5	CONCLUSION .....	10
6	REFERENCES.....	11

# 1 SUMMARY

In an official media report on 27 March 2005, the Democratic People's Republic of Korea (North Korea) confirmed an outbreak of avian influenza at a slaughter plant in Pyongyang. All affected poultry was destroyed. There is no information on the virus strain involved.

The likelihood of introducing avian influenza virus to the UK from North Korea via legal trade in permitted commodities before this outbreak is considered negligible because no trade took place within the specified risk period. The likelihood of the disease introduction via these commodities since the outbreak was reported is considered low. Defra has now banned these imports to reduce the likelihood of introducing the disease to negligible. The likelihood of introducing the disease via illegal imports, migratory and wild birds is difficult to quantify (Table 1). The evidence to support this estimate is presented in Section 4 of this document.

**Table 1: Risk pathway and summary of release assessment conclusions**

There is a negligible likelihood of introducing the disease to the UK from North Korea via the specified commodities, the importation of which is not permitted.
There was a negligible likelihood of introducing the disease to the UK from North Korea by legal trade in captive and pet birds before the outbreak. The likelihood of the disease introduction via these commodities since the outbreak is considered low. Therefore, this trade is now banned.
There is a negligible likelihood of introducing the disease to the UK from North Korea by legal trade in processed game trophies of birds. Import of unprocessed game trophies of birds is not allowed.
There was a negligible likelihood of the disease introduction to the UK from North Korea by legal trade in processed and unprocessed feathers. The likelihood of introducing the disease to the UK from imports of unprocessed feathers since the outbreak is considered low. Therefore, this trade is now banned.
There is a negligible likelihood of introducing the disease to the UK from North Korea by arriving passengers or fomites.
There is an undeterminable likelihood of introducing the disease by illegal trade to the UK from any country where the disease is present.
There is an indeterminable likelihood of introducing the disease to the UK by migratory waterfowl.

Defra is closely monitoring developments in North Korea and will re-assess the situation when further information becomes available.

## 1. INTRODUCTION

This qualitative risk analysis was undertaken to assist the process of identifying appropriate Sanitary and Phytosanitary (SPS) measures to manage the risk of importing highly pathogenic avian influenza (HPAI) to the UK by trade in live poultry and their products from the Democratic People's Republic of Korea (North Korea). According to the SPS Agreement, these measures must not be restrictive to trade while maintaining appropriate levels of protection (ALOP).

The UK considers itself free from HPAI. Therefore, the UK ALOP is that permitted imports of risk commodities from the affected countries must present a negligible risk that HPAI will become established in the UK's domestic and wild birds.

## 2 TERMINOLOGY

For the purpose of the release assessment section (Section 4) of this qualitative risk analysis, the following terminology will apply (OIE, 2004):

<b>Term</b>	<b>Definition</b>
<b>Likelihood</b>	Probability; the state or fact of being likely
<b>Likely</b>	Probable; such as well might happen or be true; to be reasonably expected
<b>High</b>	Extending above the normal or average level
<b>Highly</b>	In a higher degree
<b>Low</b>	Less than average; coming below the normal level
<b>Negligible</b>	Not worth considering; insignificant
<b>Remote</b>	Slight, faint
<b>Would</b>	To express probability; past of Will: expressing a wish, ability, capacity, probability or expectation

## 3 HAZARD IDENTIFICATION

### 3.1 Reported Highly Pathogenic Avian Influenza (HPAI) in North Korea - Disease Report

In an official media report on 27 March 2005, the Democratic People's Republic of Korea (North Korea) confirmed an outbreak of avian influenza at a poultry



**Fig.1. AI in North Korea (March 2005)**

slaughterplant in Pyongyang (Fig.1). According to this report, this would be the first known outbreak of avian influenza in North Korea. All affected poultry was destroyed by incineration (Song-wu, 2005).

There is no information on the virus strain involved. This outbreak has not yet been officially notified to the OIE.

The Food and Agriculture Organisation (FAO) has sent experts to North Korea to obtain further information (FAO, 2005).

### **3.2 HPAI in North Korea - historic information**

Before this outbreak, North Korea considered itself free from HPAI. Following the HPAI outbreaks in Asia, North Korea has tightened quarantine checks at its airports, seaports and border areas.

## **4 RISK ASSESSMENT**

This risk assessment is carried out on the basis of the official report from the North Korean government.

### **4.1 Release assessment – Legal trade (current situation)**

#### **4.1.1 Imports not permitted**

#### ***Conclusion:***

***There is a negligible likelihood of introducing the disease to the UK from North Korea via the specified commodities, the importation of which is not permitted.***

#### ***Key factors:***

*The EU and the UK do not allow import of the following commodities from North Korea:*

- *Specific pathogen free eggs;*
- *Eggs for human consumption;*
- *Egg products;*

- *Poultry meat and meat preparations;*
- *Poultry meat products;*
- *Raw pet food or feed material;*
- *Raw poultry manure, processed poultry manure and processed poultry manure products;*
- *Unprocessed game trophies of birds;*
- *Live pigs and pig meat products.*

#### **4.1.2 Permitted imports**

##### **4.1.2.1 Captive and pet birds**

#### **Conclusion:**

***There was a negligible likelihood of introducing the disease to the UK from North Korea by legal trade in captive and pet birds before the outbreak. The likelihood of the disease introduction via these commodities since the outbreak is considered low. Therefore, this trade is now banned.***

#### **Key factors:**

- *There have been no imports of captive or pet birds into the UK quarantine during at least the past six weeks (estimated risk period);*
- *Defra records indicate that this trade has not taken place since the late 1990s.*

#### **Supporting evidence**

EU rules allow for import of captive birds from all countries that are members of the World Organisation for Animal Health (OIE). This trade is subject to veterinary certification which includes the requirement for statement of avian influenza freedom. That is: the disease must be notifiable; the birds must not come from areas subject to restrictions for highly pathogenic avian influenza; the holding of origin must be free from AI within a radius of 10km for at least 30 days.

Pet birds (i.e. those accompanying their owners) may be imported from countries outside the EU. These birds must be subject to veterinary inspection prior to export and found free from clinical signs of infectious and contagious diseases. They must come from premises on which there no case of highly pathogenic avian influenza has been confirmed in the 42 days before they left. The birds are also subject to post-import quarantine that includes at least two veterinary visits for clinical examination.

TRACES, (the European Commission electronic system for notification of movements of live animals, their products and germplasm - within the EU and from third countries) shows no direct imports of captive or pet birds from North Korea to the UK within the period starting six weeks before 27 March 2005, the

date when this outbreak was first reported. This period is twice the time of the maximum incubation period for HPAI, as specified by the OIE.

#### 4.1.2.2 Processed game trophies of birds

**Conclusion:**

***There is a negligible likelihood of introducing the disease to the UK from North Korea by legal trade in processed game trophies of birds. Import of unprocessed game trophies of birds is not allowed.***

**Key factors:**

- *Game trophies of birds may only be imported if they have been subjected to complete taxidermy treatment;*
- *Imports of unprocessed game trophies of birds from North Korea are not permitted.*

#### Supporting evidence

EU rules allow the importation from any country of game trophies that have undergone a complete taxidermy treatment to ensure their preservation at ambient temperature. This process is sufficient to destroy the HPAI pathogen. These can be imported without restrictions.

Unprocessed game trophies of birds may only be imported from countries that are authorised to export fresh meat of the species concerned. North Korea is not on the list of countries permitted to export fresh poultry meat to the EU. Therefore, imports of unprocessed game trophies from North Korea are not permitted.

#### 4.1.2.3 Processed and unprocessed feathers

**Conclusion:**

***There was a negligible likelihood of introducing the disease to the UK from North Korea by legal trade in processed and unprocessed feathers before the outbreak. The likelihood of the disease introduction to the UK from imports of unprocessed feathers since the outbreak is considered low. Therefore, this trade is now banned.***

**Key factors:**

- *Imports of processed feathers are permitted subject to veterinary checks to ensure that they have been processed so as to effectively destroy pathogens;*
- *Contamination of unprocessed feathers with the virus cannot be excluded.*

## Supporting evidence

EU rules allow for processed feathers to be imported from any country, subject to veterinary checks upon import. Processed feathers must be accompanied by a commercial document stating that the processed feathers, or parts thereof, have been treated with a steam current or by some other method sufficient to ensure that no pathogens are transmitted.

EU rules allow for unprocessed feathers to be imported from any country unless the country is under restriction because of a disease outbreak. The feathers must be obtained from poultry slaughtered in a slaughterhouse having undergone ante-mortem inspection and found to be free of the disease provided they are fully packaged and dry; presented to a Border Inspection Post (BIP) and channelled directly to a technical or an intermediate plant in the UK (Defra, 2004) for further processing.

TRACES shows no imports of processed or unprocessed feathers from North Korea during the specified risk period.

Imports of unprocessed feathers from North Korea are currently banned due to the outbreak.

### 4.1.3 Other possible routes

#### 4.1.3.1 Arriving passengers & fomites

#### **Conclusion:**

***There is a negligible likelihood of introducing the disease to the UK from North Korea by arriving passengers or fomites.***

#### **Key factors:**

- *There is no disease reported in humans in North Korea;*
- *It would be highly unlikely that passengers with heavily contaminated clothing and/or shoes would board a plane.*

## Supporting evidence

There are no official reports of the disease in humans in North Korea.

The virus can remain viable for long periods in faecal material. Inhalation and ingestion is considered the main route of transmission from bird to bird, and between birds and mammals. There is potential for the virus to spread via faecal contamination of clothing and shoes.

Due to the distance of the UK from North Korea, most people will travel by air which should ensure that heavy contamination of clothing and shoes is unlikely. The volume of passengers appears to be very low and the majority of these are people unlikely to have come into close contact with agriculture or to return to the UK contaminated with poultry faeces.

The heightened awareness due to the level of publicity about the HPAI outbreaks in south-east Asian countries, together with Defra and industry advice to poultry farmers on disease and biosecurity, should ensure that anyone associated with poultry, and who has travelled to the region, will be unlikely to break normal biosecurity arrangements at poultry farms or put their stock at risk. Thus the risk of transmission of the infection to the UK by this route is considered to be negligible.

#### 4.1.3.2 Illegal trade

##### **Conclusion:**

***There is an undeterminable likelihood of introducing the disease by illegal trade to the UK from any country where the disease is present.***

##### **Key factors:**

- *Illegal movements of live poultry, poultry meat/meat products may pose a risk of the introduction of the disease from any infected countries worldwide;*
- *The likelihood of HPAI introduction via illegal trade is difficult to estimate.*

##### **Supporting evidence**

We cannot rule out the possibility that fresh poultry meat may be imported illegally to the UK from any country and may contain HPAI virus. However, cooking of poultry meat for human consumption destroys the virus.

As with all disease agents, illegal imports from infected countries worldwide give rise to a constant, background risk of infection, subject to the survival of the infectious agent in the illegally imported product.

Large scale meat illegal imports of poultry meat have not been recorded, but such activity is possible e.g. using false documentation. The traditional trade from Asia is reported to be for manufacture (pies and ready meals etc.) rather than fresh meat. The level of awareness of responsible businesses is high and they will be unlikely to buy illegal or doubtful imports.

Illegal imports of eggs for human consumption have not been reported from Asia. The available scientific evidence indicates that transmission of avian influenza does not occur through egg contents, but contamination of egg shells with faeces

may occur. However, eggs for consumption are expected to be physically clean, and should therefore pose a negligible risk of transmission of HPAI.

#### 4.1.3.3 Migratory wildfowl

##### **Conclusion:**

***There is an indeterminable likelihood of introducing the disease to the UK by migratory waterfowl.***

##### **Key factors:**

- *Avian influenza viruses have a worldwide distribution and a wide host range;*
- *Migratory waterfowl are often considered to be the most likely source of infection for domestic poultry.*

##### **Supporting evidence**

There is an on-going background risk of the introduction of avian influenza by migrating birds, especially waterfowl. Low pathogenic strains of avian influenza may be endemic, as in some bird populations in Europe. These strains may mutate spontaneously to high pathogenicity. This risk is low, but not negligible due to the large populations of migratory waterfowl and wild birds that over-winter in the UK. It is not possible to take action to reduce this risk, and it remains unchanged by this outbreak.

It is important to note that according to the British Trust for Ornithology Bird Migration Atlas, there is no direct migration of birds to Europe from the affected region in Asia. Thus the likelihood of introducing the disease by direct migration from the current outbreaks in Asia is negligible.

Defra continues to reiterate advice to industry and poultry farmers on disease and biosecurity and preventing contact between domestic poultry and migratory or wild birds.

## **5 CONCLUSION**

The likelihood of introducing the disease to the UK before the reported outbreak of AI in North Korea is considered negligible because no trade permitted commodities took place during at least the specified risk period. The likelihood of introducing the disease to the UK via these commodities since the outbreak of AI in North Korea is considered low. Therefore, imports of these commodities are now banned.

Our level of preparedness was raised by the recent outbreaks of HPAI, particularly in Asia in 2004 and 2005. Similar measures to those currently put in place were effective in reducing the likelihood of the disease introduction to the UK in these cases.

There is a background risk of introducing avian influenza to the UK by migratory birds. This risk is difficult to quantify. However, it is considered that this risk remains unchanged due to the current outbreak in North Korea.

The risk of transmission of viable virus in non-commercial meat, illegally imported from North Korea is difficult to quantify. However, it is highly likely that cooking of poultry meat for human consumption would be effective in destroying the virus.

Defra is closely monitoring developments in the region.

## **6 REFERENCES**

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