

Possible transmission of H5N1 avian influenza virus from imported Hungarian turkey meat to the UK

1. Introduction

- 1.1. This report has been prepared by the Food Standards Agency (FSA), the Meat Hygiene Service (MHS), Health Protection Agency (HPA) and Defra.
- 1.2. This report considers issues arising from the working hypothesis that HPAI H5N1 infection reported at Upper Holton Farm, Suffolk on 1 February 2007 was introduced via turkey meat and products imported from Hungary, or via activities associated with the importation.
- 1.3. In close proximity to the turkey rearing farm at Upper Holton is a turkey slaughterhouse and cutting plant. The cutting plant received turkey meat from two Hungarian slaughter and processing premises. A key element in the investigation was to determine from where these premises sourced their turkeys and whether at the time of their transport to the slaughterhouse the farm of origin was under any form of restriction because of Avian Influenza.

2. The Evidence

- 2.1. An investigation involving FSA Officials, FSA Investigations Officers and MHS officials into whether any illegal activity in respect of imported turkey began on 8 February. The investigation examined:
 - 2.1.1. details of all consignments received at the Holton premises during January 2007 including details of the farms supplying the two slaughterhouses in Hungary (data provided by Bernard Matthews Ltd).
 - 2.1.2. Information from the Hungarian authorities providing details of the sources of the turkey meat including the farms involved.
- 2.2. The investigation had access to the text of a statement from the Hungarian authorities to the European Commission dated 12 February which attested that all the meat consigned to the UK originated from farms that lie outside of the restrictions zones in Hungary.¹

¹ EU Commissions officials were told by the Hungarian veterinary authorities that they 'have checked all incoming animals into both slaughterhouses (Saga in Sarvar in NW Hungary, and Gallfood in Kecskemet which is 50 KM OUTSIDE the restricted avian flu zone). No animals came to either slaughterhouse from the restricted zone around the avian flu outbreak in South East Hungary since November 2006'. They also stated that 'they have no further suspicions of avian flu in Hungary.'

2.3. The information from the Hungarian authorities was evaluated on 14.2.07.

2.4. In parallel to the above investigation, HPA conducted an investigation to assess the risk to public health from other pathways.

3. Known facts

3.1. *Virology results currently available.* Virological investigations in response to this outbreak to date have included samples from all sheds on the infected premises. This indicated the presence of H5N1 infection in turkeys from the shed from which suspect disease was reported (shed 10), where there was acute disease and mortality, and from apparently healthy turkeys in three other sheds (sheds 12, 15 & 22). No clinical signs were observed in the birds in these three other sheds up to the point of slaughter. The absence of clinical signs indicates that birds can be infected but appear healthy during the incubation phase of the disease.

3.2. *Comparison of the virus seen in the UK and the Hungarian outbreak.* Work on sequencing the UK outbreak virus strain has shown that the molecular genetic results on the virus isolates from Suffolk and two isolates from outbreaks in geese in Hungary which were identified on 19 and 25 January 2007 suggest that they are virtually identical, and that therefore there is a direct link between the two outbreaks, or a common source for both. The results of the preliminary epidemiological and ornithological investigations support this hypothesis.

3.3. *Extent of infection in the UK.* In addition to investigations on the infected premises, active surveillance of poultry premises is in progress throughout the protection and surveillance zones along with heightened vigilance in the rest of the UK. This surveillance programme of wild birds, which started this season in October 2006, continues, and has been enhanced in the locality of the Suffolk outbreak. There is no evidence to suggest there is currently HPAI H5N1 infection in farmed or wild birds in the UK.

3.4. *Risk period.* Epidemiological investigations indicate that the introduction of infection to the first affected birds on the Suffolk premises most likely occurred between 22 and 25 January 2007. The house in which the birds were kept was fumigated on 5 December; avian influenza virus is destroyed by fumigation so it is very unlikely that virus was present in the house at the end of the fumigation process. In summary the period of highest risk for transfer of infection into the house is between 5 December and 25 January, with dates later in this period (closer to the period 22 - 25 January) having higher likelihood. For the purposes of this investigation a conservative risk period of the whole of January 2007 was selected.

4. Meat imported to the Bernard Mathews Factory at Holton from Hungary since 1 January 2007

4.1. *Source of the meat.* The only products imported from Hungary by Bernard Mathews Ltd Foods to the Holton premises during the risk period are turkey breasts (skin-on or skinless). The products came from two turkey slaughterhouses in Hungary:

Saga Foods Zrt.
9600 Sarvar
Soproni u. 15
Hungary

Gallfood Pulykafeldogozo es
Ertekesito Kft
Kecskemet
Cegledi ut 11
Hungary

Approval No. HU – 109

Approval No. HU – 106

4.2. The total throughput for the cutting plant at Holton between 1 January and 2 February 2007 from all sources was 4,656,027 kg. Included in this total were 11 consignments from Gallfood to Bernard Matthews totalling 82,400 kg and 13 consignments from Saga Foods totalling 174,000 kg.

4.3. This means that 5.5% of the throughput of cutting and further processing premises at Holton from 1 January 2007 was derived from Hungary. A breakdown of the consignments of turkey meat received by the Holton plant from the two plants in Hungary is set out in the Annex.

4.4. *Processing of Hungarian turkey meat.* Hungarian turkey meat product is received at the Holton premises in palletised shrink-wrapped boxes or lined dolavs. It is then removed from its transport packaging in a chilled area and processed. Processing is limited to trimming of the breast meat in order to achieve the desired weight specification. Any off-cuts go for further processing and may be mixed with UK turkey meat into other products such as turkey rolls. The amounts of animal by-product produced by this type of processing is minimal.

4.5. . A voluntary agreement to hold further shipment of this meat from either cold store was reached with Bernard Matthews Ltd pending further information from Hungary (referred to in paragraph 2).

4.6. *Hygiene Standards.* Poultry slaughterhouses and cutting plants are subject to veterinary control under EU legislation relating to animal health, welfare and public health. In slaughterhouses, the Official Veterinarian undertakes or supervises inspections of birds and carcasses on a permanent basis, while in both slaughterhouses and cutting plants the Official Veterinarian audits the food business operator's procedures on a risk-based frequency. The delivery of official controls in plants is also subject to internal audit by the MHS.

- 4.7. Audit categories are published on the FSA website (www.food.gov.uk). The Bernard Matthew Ltd cutting plant and slaughterhouse on the Holton site were audited in November and December 2006 respectively and were both placed in the second highest audit category (Cat III - audits at 5 monthly intervals).
- 4.8. MHS records of enforcement activity from January 2006 to date record a number of instances where verbal advice to the food business operator about deficiencies and non-compliance was given. In each case the deficiency was addressed and no further enforcement action was taken.

5. Risk analyses

5.1. Risk to the food chain

- 5.1.1. The working hypothesis (paragraph 1.2) raised the possibility that turkey meat infected with the HPAI virus entered the UK food chain. FSA officials have considered the evidence provided by Bernard Matthews Ltd and the information provided by the Hungarian Authorities as set out in paragraph 2 and have concluded that these data corroborate each other.
- 5.1.2. This evidence taken as a whole i.e. the data provided by Bernard Matthews Ltd and information supplied by the Hungarian authorities as described in paragraph 2 shows that no product was received at the Holton premises during the risk period (see paragraph 3.4) from poultry that originated from farms within the Hungarian restricted areas.

5.2. Other risk pathways

- 5.2.1. The HPA has identified three other potential risk pathways:
- 5.2.1.1. Exposure of food processing workers to infected raw poultry meat
 - 5.2.1.2. Risk to other workers on the site
 - 5.2.1.3. Risk of spread of infected material off the site
- 5.2.2. In respect of the first risk pathway above, a risk assessment has been carried out concerning the potential exposure of the workers in the processing plant if they had handled infected meat. The scientific evidence suggests that even if contaminated meat had been present at the plant the risk to the workforce is very low indeed. This conclusion is based on the following observations:
- 5.2.2.1. In SE Asia and other regions of the world associated with human H5N1 infections, practices associated with acquisition of confirmed infection are close contact with live, dying or

- dead poultry (whole birds) themselves infected with H5N1, and in particular slaughter (including evisceration) and de-feathering;
- 5.2.2.2. Cuts of turkey meat consigned from Hungary to the Holton premises consist of skeletal muscle and skin. Skeletal muscle from an infected bird will contain very much lower titres of H5N1 virus than from the organs, probably in the region of a 100-1,000 fold reduction (Iain Brown, VLA: personal communication).
 - 5.2.2.3. Any virus load would decrease further over the time taken to transport the carcasses from Hungary to the UK.
 - 5.2.2.4. No human H5N1 infections have been reported from Hungary where these birds were slaughtered, de-feathered and eviscerated.
 - 5.2.2.5. Current evidence is that the carcasses from Hungary can be traced to areas which are well outside of the EU restricted zone in force in that Member State.
- 5.2.3. In respect to the other workers on the site, as they have no direct contact with poultry meat, their personal risk would be even lower than for the processing plant workers, and they can, therefore, be assumed not to be at risk.
- 5.2.4. There is a further potential risk of spread relating to the effluent from the site. This effluent goes into a dissolving air flotation treatment plant and is discharged into the River Wang. The Environment Agency was tasked earlier in this incident to carry out a risk assessment on this. It has been confirmed that the effluent is contained and proposals made for its remediation.
- 5.2.5. In respect of the risk of spread of infected material off-site, potential pathways of spread including the management of effluents from the processing site have been identified.
- 5.2.6. The management of the effluent from the abattoir and the food processing units was investigated by the Environment Agency, Defra and the Health Protection Agency early in this incident. The effluent is treated by filtration, settlement and processing in a dissolving air flotation treatment plant before eventual discharge into the River Wang.
- 5.2.7. Contaminated settlement products from the culling of the infected premises were contained and will be treated to prevent any risk to the public or wild fowl.

6. Conclusions

- 6.1. *Likelihood of hypothesis* Virological evidence strongly suggests an association with the outbreak reported in geese in Hungary in January

2007. Circumstantial epidemiological evidence suggests the most likely route is in, or associated with, the transport of turkey meat from Hungary to the UK.

6.2. *Likelihood that the meat came from the Hungarian restricted areas.* From the evidence available (see para 2) it is concluded that no product was received at the Holton premises during the risk period from turkeys that originated from farms within the Hungarian restricted areas.

6.3. *Risk to public health: food chain.* This outbreak of H5N1 avian influenza and the change to the working hypothesis about the source does not alter the Food Standards Agency's advice that poultry meat remains safe to eat.

6.3.1. The FSA has re-visited its risk assessment and is still of the opinion that there is no food safety issue. There are, therefore, no consumer safety grounds, on the evidence currently available, to justify a product recall. However, if it came to light that meat had been illegally imported steps would be taken to ensure that it was withdrawn. This action would be taken because of the illegality of the product and not because there would be a food safety risk. See www.food.gov.uk

6.4. *Risk to public health: occupational exposure.* The risk that may have arisen to food processing workers and other personnel working in around the Holton premises has been assessed by the HPA Agency as being very low for reasons stated in section 4.2 above.

6.5. *Risk to public health / environment by other routes.* The risk that may have arisen to by other routes has been assessed by the HPA as being very low for reasons stated in section 4.2 above.

Food Standards Agency
Health Protection Agency
Meat Hygiene Service
Defra

15 February 2007

Turkey meat from Gallfood

Received	Processed	Kg
06/01/2007	07/01/2007	6135
06/01/2007	10/01/2007	1065
08/01/2007	09/01/2007	1335
08/01/2007	08/01/2007	8665
13/01/2007	18/01/2007	1300
13/01/2007	14/01/2007	8700
15/01/2007	16/01/2007	2310
15/01/2007	16/01/2007	15690
27/01/2007	27/01/2007	8400
29/01/2007	30/01/2007	17400
02/02/2007	04/02/2007	11400
TOTAL		82400

Turkey meat from Saga Food

Received	Processed	Kg
06/01/2007	07/1/2007	19200
07/01/2007	07/01/2007	9600
08/01/2007	09/01/2007	9600
12/01/2007	14/01/2007	19800
14/01/2007	19/01/2007	9600
14/01/2007	16/01/2007	9600
18/01/2007	19/01/2007	9600
18/01/2007	19/01/2007	19800
23/01/2007	27/01/2007	9600
23/01/2007	29/01/2007	19200
27/01/2007	04/02/2007	9600
29/01/2007	04/02/2007	9600
30/01/2007	04/02/2007	3799
02/02/2007	04/02/2007	15401
TOTAL		174000