

ADVISORY COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD

**ACMSF Avian Influenza Risk Assessment
Update May 2007**

Issue

1. To update the Committee on work carried out by the ACMSF Working Group on Avian Influenza, which has considered the February 2007 outbreak of avian influenza (AI) in Suffolk and reviewed the current ACMSF risk assessment of acquiring avian influenza through the food chain.

Background

2. In December 2005 the ACMSF agreed to establish a Working Group to carry forward conclusions reached by an expert Group of influenza virologists and epidemiologists following review of the 2003 ACMSF Risk Assessment, and to keep a watching brief on developments. In March 2006 the ACMSF Working Group on avian influenza met to review the current ACMSF risk assessment of acquiring avian influenza (AI) through the food chain. The Group met again in May 2007 to review the recent AI outbreak in Suffolk in detail and to consider the current ACMSF risk assessment of acquiring AI through the food chain in light of any new information made available since the March 2006 review.
3. On 3 February 2007 the H5N1 strain of the avian influenza virus was confirmed on a turkey farm in Suffolk. As part of normal disease control measures restriction zones were set up surrounding the infected premises, all birds were culled and cleaning and disinfection was carried out. The Food Standards Agency advice, that avian flu does not pose a food safety risk for UK consumers, remained unchanged.
4. Investigations into the source of the outbreak demonstrated that the virus isolates from Suffolk and recent outbreaks in farmed geese in Hungary were very similar. This raised the prospect that the source of the outbreak in Suffolk might be associated with the trade in poultry meat from Hungary, some of which was processed in the cutting plant adjacent to the farm. The Agency therefore led an investigation into whether illegal meat had entered the UK from a restricted zone in Hungary. The investigation concluded there was no evidence to suggest poultry meat had been imported from an illegal source. The final epidemiological report published by Defra concluded that there is no proven source of the outbreak but the most plausible explanation

remained that infection was introduced to the UK via the importation of turkey meat from Hungary.

5. At this meeting the Group considered the issues surrounding the outbreak of AI in Suffolk in February 2007, including control measures that were put in place and investigations into the source of the outbreak. The Group were also asked to comment on a number of questions raised during the Agency's response to the outbreak:
 - Survivability of the virus in poultry meat
 - Distribution and titre of the virus in all edible, traded tissues of poultry
 - Survivability of the virus in the food processing and handling environment
 - Survival of the virus in dried egg white
 - Risks associated with hunting potentially infected game birds
 - Testing poultry meat for the AI virus.

Outcome

In summary the Group concluded that:

6. Members were not aware of any new published scientific evidence to suggest that the food chain had a role in the acquisition of AI in humans. However new or emerging scientific evidence and publications should be monitored and assessed as appropriate.
7. Initial investigations showed the Suffolk isolate to be identical to the Hungarian goose isolates. This was unusual so a full genomic sequence was carried out which indicated 99.6% homology between the isolates which is within normal strain variability. When viruses pass through a live animal, selection pressure will result in changes in the virus with greater variation than that seen between the Hungarian and Suffolk strains. It is therefore very unlikely that the virus could have been introduced to the turkey flock via a wild bird or other live poultry.
8. Further information on actions taken in Hungary and conclusions of their epidemiological report may help in identifying a source of the UK outbreak. Members also suggested that further environmental sampling of the processing plant, waste bins and serological samples from staff in Suffolk may have aided investigations.
9. The Group concluded that there are still a number of gaps in current knowledge of H5N1 survival in poultry meat, including the effects of pH changes after slaughter, the use of brine, the effect of the scald tank during processing, virus distribution in different tissues and virus survival in the processing environment. Members were informed that some of these issues are being investigated as part of the VLA research programme. It was agreed that these factors are likely to contribute to a small reduction in virus levels in or on meat and therefore add to the risk assessment that AI is a low risk to humans via the food chain.

10. Should another outbreak occur, it is unlikely that Defra will be able to enforce a long term ban on shooting within restricted zones, therefore advice on handling game birds shot in restricted zones needs to be considered. Plucking and evisceration are high risk activities associated with human disease and members expressed concern about these activities continuing in restricted zones whilst an outbreak is ongoing.
11. During the recent outbreak the Agency decision not to recommend screening of poultry meat for AI was questioned. The Agency considered testing was inappropriate as this would not add to consumer protection or provide robust and reliable information on the presence or absence of the AI virus due to the limitations of microbiological testing. Members noted a polymerase chain reaction (PCR) method was available but, while this was validated for clinical samples, it had not been validated for use with poultry meat. Members supported the Agency's approach.
12. No further meetings are planned. However the Working Group will continue to monitor developments on avian influenza and will convene should an assessment of new information be required.

Summary

- There was no new published scientific evidence to suggest that the food chain has a role in the acquisition of AI in humans.
- Although a number of questions have been identified as a result of the recent outbreak, it was agreed that there was no fundamental change to the risk assessment and the February 2007 outbreak posed a low risk to humans via the food chain.
- There were adequate systems in place to protect consumers from the introduction of AI through the food chain.

The Group highlighted the need for more information on international controls and identification of the source of the virus. to help identify any gaps in the risk assessment.

ACMSF Secretariat
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