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HIGHLY PATHOGENIC AVIAN INFLUENZA IN OSTRICHES IN SOUTH AFRICA

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1. SUMMARY

The South African authorities reported an outbreak of Highly Pathogenic Avian Influenza (HPAI) at two ostrich farms located in Eastern Cape, South Africa on 6 August 2004.

There is no risk to UK animal health arising from this outbreak because the imports of specified risk commodities are now banned. The ban will be in effect until 1 January 2005. The risk in the past was assessed on a commodity-to-commodity basis and considered negligible.

The EU and the UK have implemented similar ban on the import of specified commodities during the outbreaks of HPAI in Asia, the United States of America (Texas) and Canada (Frazer Valley) in 2004 and the Netherlands in 2003. These bans appeared to be effective in preventing spread to the UK in these cases.

There is a background risk from migratory birds due to the existing routes of migration of wading and other birds. This risk is difficult to quantify. It is not possible to take action to reduce the level of this type of risk. It is considered that the level of risk was not changed because of this outbreak in South Africa.

The risk of transmission of viable virus in non-commercial, illegally imported meat is low due to the pH change that occurs post-slaughter.

Defra and the European Commission are monitoring closely developments in the region and will re-assess the situation when further information becomes available.

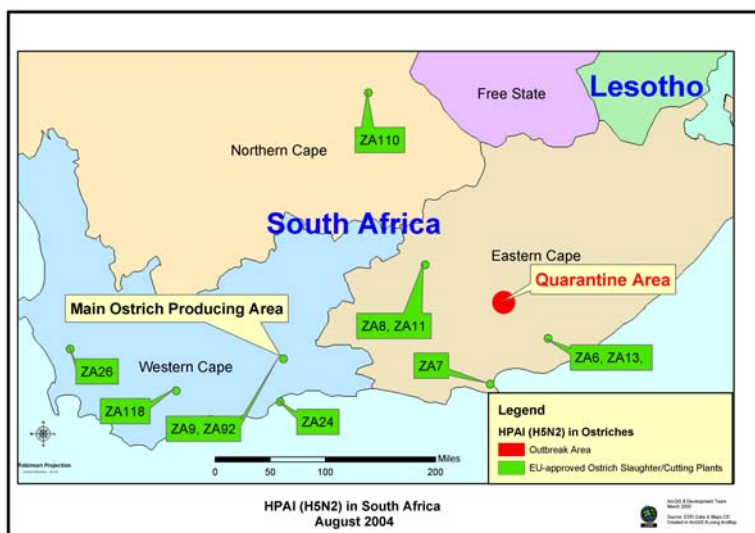
2. HIGHLY PATHOGENIC AVIAN INFLUENZA IN SOUTH AFRICA

2.1. Disease Report

The South African authorities reported an outbreak of avian influenza (H5N2) on two ostrich farms in the Eastern Cape, South Africa (Fig.1), on 6 August 2004.

The disease was suspected on 21 July 2004 and appears to be confined to the affected ostrich farms.

A high level of mortality (over 60%) was observed among infected ostriches.



The authorities reported that a 30km radius quarantine area was set up including movement control. All neighbouring ostrich farms have been quarantined. There are no commercial poultry farms in the area apart from low numbers of backyard poultry. All

ostriches and poultry in the affected area will be subject to slaughter and safe disposal. A voluntary ban on export of poultry (including ostrich) and poultry products has been put in place.

2.2. Avian influenza in ostriches – historic information worldwide

H5N2 type of the virus has never been reported in poultry in South Africa. This is the first confirmation of the infection and clinical manifestation in ostriches with H5N2 in South Africa.

Several strains of avian influenza viruses have been isolated from ostriches in South Africa. H7N1 was isolated in 1991 and 1992; H5N9 in 1994 and H9N2 in 1995. In Zimbabwe, H5N2 was isolated in 1995 (Huchzermeyer, 2002).

Some H7 strains may cause mortality in ostrich chicks. These outbreaks usually occur during periods of unfavourable weather or significant contacts with wild birds (Verwoerd, 2000).

In general, other serotypes of avian influenza viruses (H3N2, H4N2, H4N6, H7N3, H10N4 and H10N7) have also been isolated from ostriches since the first isolations in early to mid 1990s. All avian influenza isolates from ostriches are

considered to be of low virulence for chickens (Alexander, 2000). The H7N1 strain that caused outbreaks in poultry was also isolated from ostriches during the epidemic in Italy in 1999 (Capua *et. al.*, 2002).

There are no reports of possible infection in humans associated with H5N2 type of the virus. To date (various reports cited in Sabirovic *et. al.*, 2004) indicate that mild clinical illness (eye-infection and flu-like symptoms) was reported in two humans involved in dealing with poultry affected by H7N3 in Canada. Other avian influenza types of the virus (H5N1, H7N7, H7N2 and H9N2) have previously been associated with infection in humans in other countries.

3. LEGAL TRADE – CURRENT SITUATION

3.1. Live birds

3.1.1. Breeding and production ratites

EU rules allow for import of live ratites (including ostrich), subject to veterinary certification that includes requirement for statement on avian influenza freedom.

TRACES, the European Commission electronic system for notification of movements of live animals, their products and germplasm (within the European Union and from third countries) shows no records of imports of live ratites after 15 June 2004. This is just under six weeks before 21 July 2004, the date when the disease presence was first suspected in South Africa. Five weeks is nearly twice the maximum incubation period for avian influenza (21 day), as specified by the OIE.

3.1.2. Live poultry

EU rules do not allow for import of live poultry from South Africa.

3.1.3. Captive birds

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

The birds are subject to post-import quarantine that includes three veterinary visits for clinical examination and testing for avian influenza.

TRACES shows one record of import of captive birds (raptors) after 15 June 2004. These imports are within five weeks before 21 July 2004, the date when the disease presence was first suspected in South Africa.

3.1.4. Pet birds

EU rules allow for import of pet birds (i.e. those accompanying their owners) from countries outside EU. These birds are subject to veterinary inspection prior to export and must be found free from clinical signs of infectious and contagious diseases. The birds are also subject to post-import quarantine that includes at least two veterinary visits for clinical examination.

TRACES shows nine records of import of pet birds (including parrots, parakeets, macaws and cockatoos) after 15 June 2004.

3.2. Day-old chicks

3.2.1. Ratites

EU rules allow for import of ratite day-old chicks, subject to veterinary certification that includes requirement for statement on avian influenza freedom. That is, day-old chicks must be hatched in establishment where there was no outbreak of avian influenza within a radius of 35km for at least 30 days. Chicks must be hatched from eggs that originate from flocks located in regions free of avian influenza.

TRACES shows no records of import of day-old ratite chicks after 15 June 2004.

3.2.2. Poultry

EU rules do not permit for import of poultry day-old chicks from South Africa.

3.3. Hatching eggs

3.3.1. Ratites

EU rules permit import of ratite hatching eggs, subject to veterinary certification that includes requirement for statement on avian influenza freedom. That is, the eggs must come from the establishment located in the area where no outbreak of avian influenza has occurred within a radius of 25km for at least 30 days.

TRACES shows no records of import of hatching eggs after 15 June 2004.

3.3.2. Poultry

EU rules do not permit the import of poultry hatching eggs from South Africa.

3.4. Eggs - other

3.4.1. Specific pathogen free eggs

EU rules permit the import of specific pathogen free eggs, subject to veterinary certification that testing for avian influenza has been carried out within 30 days of despatch.

3.4.2. Eggs for human consumption

EU rules do not permit the import of eggs (ratite and poultry) for human consumption from South Africa.

3.4.3. Egg products

EU rules do not permit the import of egg products (ratite and poultry) from South Africa.

3.4.4. Composite products containing eggs

EU rules do not cover imports of composite products containing egg. They are subject to import rules set by the UK. Imports of these products are permitted only if they do not present a risk of transmitting the disease; for example, on the basis of processing conditions which would destroy the virus, and the low proportion of egg in composite products.

3.5. Meat and meat products

3.5.1. Ratite meat

EU rules permit the import of skinned and deboned ratite meat from South Africa. These imports are subject to veterinary certification that includes requirement for statement on avian influenza freedom (including holding of origin and surrounding area, quarantine before slaughter, and slaughterhouse location). Although slaughterhouses are all in one area (Western Cape), there is no regionalisation; hence birds from any part of the country may be slaughtered in these establishments.

HMCE data indicate no imports of ratite meat from South Africa for the period January – May 2004.

3.5.2. Ratite meat products & meat preparations

EU rules do not permit the import of ratite meat products and ratite meat preparations from South Africa. There are no EU approved plants under public health rules.

3.5.3. Poultry meat

EU rules do not permit the import of fresh poultry meat from South Africa.

3.5.4. Poultry meat products & meat preparations

EU rules permit the import of poultry meat products from South Africa. These products must be subjected to heat-treatment to at least 70⁰C. They may be prepared from poultry slaughtered in approved EU establishments outside South Africa and processed in South Africa.

EU rules do not permit the import of poultry meat preparations from South Africa. There are no EU approved poultry slaughterhouses in South Africa.

3.6. Feathers

Processed and unprocessed feathers may be imported, subject to veterinary checks upon import.

3.7. Game trophies of birds

Birds that have undergone a complete taxidermy may be imported and are not subject to any restrictions.

Untreated game trophies of ratites may be imported and are not subject to any restrictions.

3.8. Raw manure, processed manure and processed manure products

3.8.1. Raw manure

EU rules permit the import of unprocessed poultry manure from countries from where import of fresh poultry meat is allowed. South Africa is not on the list of approved countries from which fresh poultry meat may be exported to the EU.

3.8.2. Processed manure and processed manure products

EU rules require that processed manure and processed manure products originate from approved establishments. The manure must be heat-treated to a minimum of 70⁰C for at least 60 minutes. The quality of process is monitored by microbiological sampling.

Imports of processed manure are permitted from any country. The manure must come from approved establishments and be accompanied by a health certificate confirming that suitable treatment to achieve the prescribed microbiological standards has been carried out. However, there are currently no established certificates for importation of these commodities from any country.

3.9. Pigs and pig meat products

There is potential for the spread of some types of avian influenza virus to pig populations. Under EU rules, the importation of pigs and pig meat products are not permitted from South Africa. There are currently no confirmed reports of H5N2 type of the virus infection in pigs in South Africa.

4. ASSESSMENT OF THE RISK TO UK ANIMAL HEALTH

On the basis of information on the outbreak of avian influenza in ostriches provide by the South African authorities so far, the Veterinary Directorate presently considers that with regard to:

4.1. Live birds

4.1.1. Breeding and production ratites

There is no risk from legal trade in breeding and production ratites. There remains the possibility that HPAI could be active in other areas in South Africa. Therefore, the import of these commodities is now suspended until 1 January 2005 as a result of the UK declaration issued on 10 August 2004 and the corresponding EU Decision issued on 10 August 2004.

The risk from legal trade in live ostriches in the past was negligible. No live ostriches were imported during the identified risk period.

4.1.2. Live poultry

There is no risk from legal trade in live poultry because the EU rules prohibit importations.

4.1.3. Captive birds

There is no risk from legal trade in captive birds. There remains the possibility that HPAI could be active in other areas in South Africa. Therefore, import of these commodities is now suspended until 1 January 2005 as a result of the UK declaration issued on 10 August 2004 and the corresponding EU Decision issued on 10 August 2004.

The risk from the importation of one consignment of captive birds during the identified risk period is considered negligible. The volume of imported captive birds from South Africa was low. Captive birds are subject to quarantine; veterinary visits during the quarantine and compulsory testing for avian influenza.

4.1.4. Pet birds

There is no risk from legal trade in pet birds. There remains the possibility that HPAI could be active in other areas in South Africa. Therefore, the import of these commodities is now suspended until 1 January 2005 as a result of the UK declaration issued on 10 August 2004 and the corresponding EU Decision issued on 10 August 2004.

The risk from the importation of nine consignments of pet birds during the identified risk period is considered negligible. These birds are subject to post import quarantine and veterinary visits during the quarantine.

4.2. Day-old chicks

4.2.1. Ratites

There is no risk from legal trade in ratite day-old chicks. There remains the possibility that HPAI could be active in other areas in South Africa. Therefore, the import of these commodities is now suspended until 1 January 2005 as a result of the UK declaration issued on 10 August 2004 and the corresponding EU Decision issued on 10 August 2004.

The risk from legal trade in day-old ratite chicks in the past is considered negligible. No such imports occurred during the identified risk period.

4.2.2. Poultry

There is no risk from legal trade in day-old poultry chicks because the EU rules prohibit importations.

4.3. Hatching eggs

4.3.1. Ratites

There is no risk from legal trade in ratite hatching eggs. There remains the possibility that HPAI could be active in other areas in South Africa. Therefore, the import of these commodities is now suspended until 1 January 2005 as a result of the UK declaration issued on 10 August 2004 and the corresponding EU Decision issued on 10 August 2004.

The risk from legal trade in ratite hatching eggs in the past is considered negligible. No such imports occurred during the identified risk period.

4.3.2. Poultry

There is no risk from legal trade in day-old poultry chicks because the EU rules prohibit importations.

4.4. Eggs – other

4.4.1. Specific pathogen free eggs

There is a negligible risk because production of specific pathogen free eggs requires specific production conditions and on-going testing for avian influenza. Therefore, it is considered that imports of this type of eggs from South Africa may continue to be permitted.

4.4.2. Table eggs for human consumption

There is no risk because EU rules do not permit the import of eggs for human consumption from South Africa.

4.4.3. Egg products for human consumption

There is no risk because EU rules do not permit the import of egg products from South Africa.

4.4.4. Composite products containing eggs

There is a negligible risk from the import of composite products with egg ingredients. These products are permitted only on the basis that they are subject to processing (heat-treatment) which is considered adequate in destroying the virus. Therefore, it is considered that imports of this type of products from South Africa may continue to be permitted.

4.5. Meat and meat products

4.5.1. Ratite meat

There is no risk from legal trade in these commodities. There remains the possibility that HPAI could be active in other areas in South Africa. Therefore, the import of these commodities is now suspended until 1 January 2005 as a result of the UK declaration on 10 August 2004 and the corresponding EU Decision issued on 10 August 2004.

The risk from legal trade in these commodities in the past is considered negligible. Therefore, the import of these commodities obtained from birds slaughtered before 16 July 2004 is permitted.

4.5.2. Ratite meat products and meat preparations

There is no risk from legal trade in these commodities. The existing ban on import of these commodities under public health rules was re-enforced on animal health grounds as a result of the UK declaration issued on 10 August 2004 and the corresponding EU Decision issued on 10 August 2004.

4.5.3. Poultry meat

There is no risk from legal trade in poultry meat because the EU rules prohibit importations.

4.6. Feathers

There is a low risk from legal trade in unprocessed feathers that may be contaminated with faeces. There remains the possibility that HPAI could be active in other areas in South Africa. Therefore, the import of these commodities is now banned as a result of the UK declaration issued on 10 August 2004.

There is a negligible risk from legal trade in processed feathers. 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 ensuring that no pathogens are transmitted. Therefore, it is considered that the imports of processed feathers from South Africa to the UK may be permitted.

Note: Processed and unprocessed feathers are easily distinguished by physical inspection. All consignments of feathers are subject to a heightened level of veterinary checks at Border Inspection Posts.

4.7. Game trophies of birds

There is a low risk from legal trade in unprocessed game trophies of birds. There is usually a very limited trade in these commodities. There remains the possibility that HPAI could be active in other areas in South Africa. Therefore, the import of these commodities is now banned as a result of the UK declaration issued on 10 August 2004.

There is a negligible risk from legal trade in processed game trophies. Therefore, these commodities may be imported provided that they meet EU rules concerning taxidermy treatment, which ensures the destruction of the HPAI agent.

4.8. Raw manure, processed manure and processed manure products

4.8.1. Raw manure

There is no risk from legal trade – the importation of raw manure is not permitted.

4.8.2. Processed manure and processed manure products

There is a negligible risk from trade in these commodities. EU rules specify requirements for import of these commodities. Processing specified by the EU rules is sufficient to destroy the virus. Therefore, Member States may permit the import based on the EU requirements.

4.9. Pigs and pig meat products

There is no risk from legal trade – the importation of pigs and pig meat products is not permitted under EU rules.

4.10. Other possible pathways

4.10.1. Arriving passengers

The risk appears to be negligible at this time. There are no confirmed cases of disease in humans amongst individuals with close contacts with affected ostrich farms.

4.10.2. Fomites

Thus the risk of transmission of the infection to the UK by this route is considered to be negligible.

The virus can remain viable for long periods in faecal material. Although inhalation and ingestion are considered the main route of transmission from bird to bird, and between birds and mammals, there is the potential for spread of virus via faecal contamination on clothing and shoes. Due to the distance of the UK from South Africa, the majority of the movement of people is likely to be by air-travel. Due to the nature of this travel, heavy contamination of clothing and shoes is unlikely. Although the volume of passengers is high, the majority of these are either tourists or business people. They would be unlikely to have come into close contact with agriculture or to return to the UK contaminated with ostrich faeces. On-going Defra and industry advice to poultry farmers on disease and biosecurity, should ensure that anyone associated with ostriches and has travelled to the region, will be unlikely to break normal biosecurity arrangements at poultry farms or put their stock at risk.

4.11. Illegal imports

4.11.1. Illegal personal imports

The risk associated with the illegal personal import of ostrich or poultry meat appears to be negligible. The post-mortem pH change should be sufficient to inactivate the virus. According to Sales and Mellet (1996) the mean pH values of ostrich meat are between pH 5.8 and pH 6.2. The virus is inactivated by acid pH (OIE, 2004).

Attempts to illegally import meat as personal imports have been recorded from many African countries, including South Africa. 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 infectious agent in the illegally imported product. Refrigeration, which may reduce the effectiveness of this inactivation, is unlikely in illegally imported meat and makes detection by enforcement authorities more likely.

4.11.2. Illegal commercial imports

Large-scale commercial illegal imports of ostrich meat have not been recorded, but such activity may be possible e.g. using false documentation.

Meat in storage or in transit must be certified to gain entry to the EU. It is unlikely that the South African authorities would certify meat which should not be exported. It is possible that documents could be forged, but there are thorough documentary checks and heightened awareness at EU Border Inspection Posts (BIPs). The information on these consignments must also be entered in TRACES.

The traditional illegal import from South Africa is reported to be biltong [salted, spiced, acid (often vinegar) treated and air-dried beef, or venison or sometimes ostrich meat]. This product is considered to be a delicacy and is used mainly as a traditional snack. Normally, there is no waste generated from consumption of this product.

4.11.3. Illegal importation of eggs

Illegal imports of eggs have not been reported from South Africa. 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.

4.12. Background risk associated with migrating birds

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.

“An estimated 500 million birds migrate from Europe to sub-Saharan Africa, many of them flying the last 2,600 km non-stop across the Mediterranean Sea and the vast Sahara Desert” (Earthwatch Institute, 2004, p.1). Many migratory birds, particularly wading birds, do not breed in the United Kingdom, “but still use it as a stop over during migration. Birds such as Knot, Curlew Sandpiper and Little Stint that breed in the high Arctic and winter in South Africa stop over in Britain en route to take advantage of the rich food source to be found in our estuaries and marshes” (Portugal, 2004, p.1)

It is considered that the risk from migrating birds remains unchanged by this outbreak in South Africa.

5. CONCLUSION

The additional risk to UK animal health arising from this outbreak in South Africa is low. Therefore, the imports of specified risk commodities are now banned.

Our level of preparedness was raised by the recent outbreaks of HPAI in Asia, the United States of America (Texas) and Canada (Frazer Valley) in 2004 and the Netherlands in 2003. Similar measures to those currently put in place were effective in preventing spread of the disease to the UK in these cases.

There is a background risk of the disease introduction by migratory birds. This risk is difficult to quantify. However, it is considered that this risk remains unchanged due to the current outbreak.

The risk of transmission of viable virus in non-commercial, illegally imported meat is low due to the pH change that occurs post-slaughter.

Defra and the European Commission are monitoring closely developments in the region.

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