

# **FOOT AND MOUTH DISEASE OUTBREAK**

**IN**

**SOUTH AFRICA  
(RECOGNISED BUFFER ZONE)**

# 1. TERMINOLOGY

For the purpose of this hazard assessment to the UK animal health, the following terminology<sup>1</sup>, presented in alphabetical order, is used:

<b>Terms used as adjectives to qualify likelihood estimate</b>	
Average	The usual amount, extent, rate
Extremely	Outermost, furthest from the centre; situated at either end; the highest or most extreme degree of anything
High	Extending above the normal or average level
Insignificant	Unimportant; trifling
Low	Less than average, coming below the normal level
Negligible	Not worth considering; insignificant
Significant	Noteworthy; important; consequential

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<sup>1</sup> Quoted from: Murray, N. (2002). Import Risk Analysis: Animals and Animal Products. New Zealand Ministry of Agriculture and Forestry, PO Box 2526, Wellington, New Zealand

## 2. REPUBLIC OF SOUTH AFRICA - FMD OUTBREAK IN RECOGNISED BUFFER ZONE

### 2.1 DISEASE REPORT

On 12 August 2003, the Republic of South Africa's authorities informed OIE of clinical diagnosis of FMD in cattle in the north-eastern part of the country. Two outbreaks occurred in the area between Limpopo river and the Kruger National Park (KNP) fence (the Tsikuyu and Bend Mutale areas). The outbreak location is within the FMD recognised buffer zone (Fig. 1, see also Fig 2).

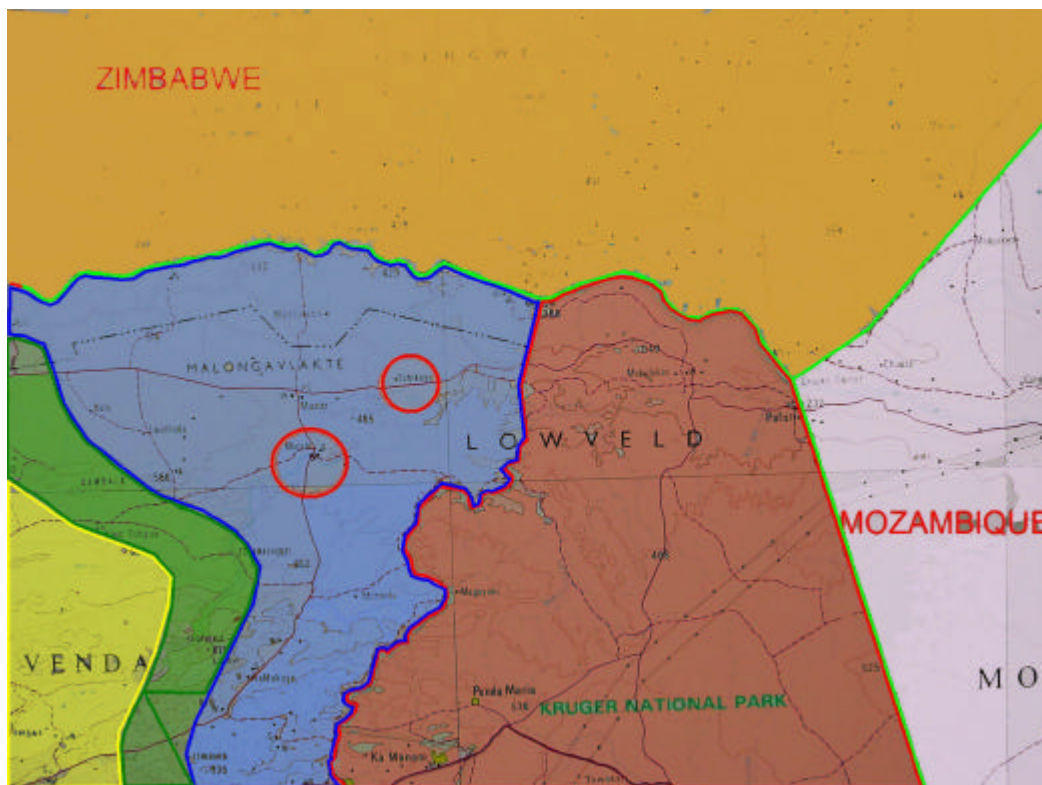


Fig.1. RSA – locations of FMD outbreaks in the recognised FMD buffer zone (2003)

As a part of on-going surveillance, six suspected clinical cases of FMD in cattle were detected on 7 August 2003. The FMD disease virus serotype SAT2 was confirmed by laboratory testing on 9 August 2003. The authorities suspect that contact with buffalo carriers may have triggered an outbreak.

## **2.2 TRADE INFORMATION**

### **2.2.1 Meat/meat products**

Returns from Border Inspection Post (BIP) up to the end of April 2003 report eight consignments of meat/meat products from the Republic of South Africa.

Electronic records of live animal consignments entering through BIPs show one import of registered horses and five imports of live birds between 1 May and 12 August 2003.

### **2.2.2 Illegal imports**

On the 12 August 2003, illegal imports database recorded over 400 confiscations of animal products from South Africa during the period from 1 January 2002 to 31 April 2003 including the following relevant products:

- 402 confiscations of meat
- 10 confiscations of dairy products
- 12 confiscations of mixed products

Among the 402 meat confiscations there were 278 confiscations of biltong, 40 confiscations of beef, and 6 seizures of bushmeat. Of the 12 confiscations of the mixed products, 7 confiscations recorded biltong.

## **3 RESTRICTIONS IN PLACE**

### **3.1 Situation in the Republic of South Africa<sup>2</sup>**

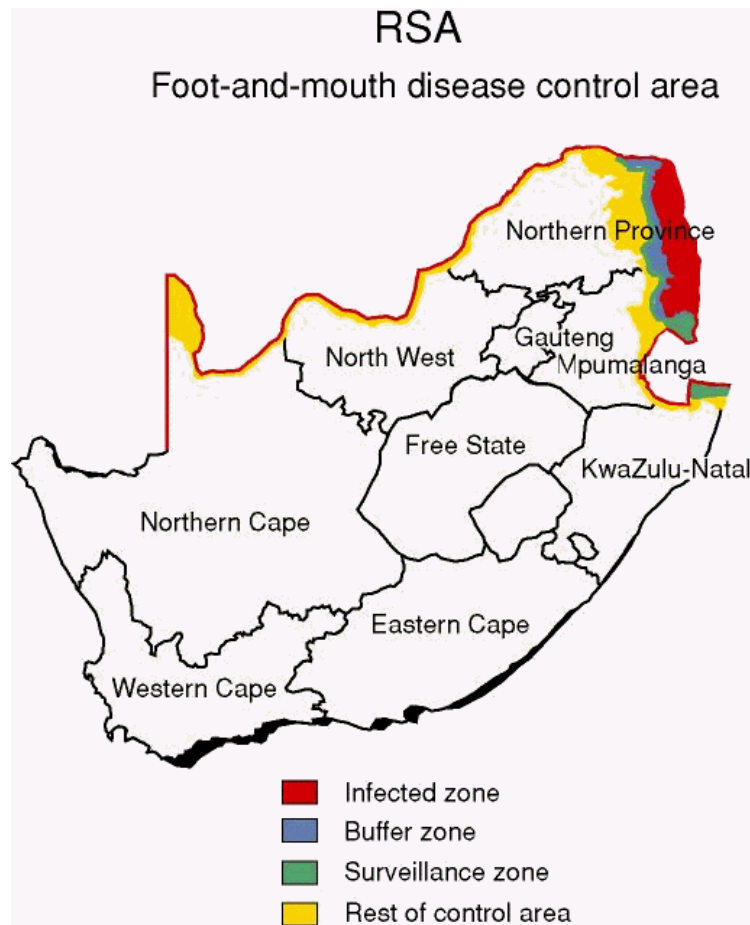
In 1995, the OIE recognised certain areas of the Republic of South Africa as FMD free zones without vaccination due to the successful containment of FMD in domestic livestock outside the FMD control zone. However, this status was lost in September 2000, when the FMD virus serotype O virus was diagnosed for the first time in South Africa. An outbreak occurred in a piggery in KwaZulu-Natal after the illegal feeding of untreated swill.

A few months later (November, 2000), an outbreak of FMD was diagnosed in a feedlot within the free zone (Mpumalanga Province), south of the Kruger National Park (KNP). This time the outbreak was caused by the FMD serotype SAT1 virus. Epidemiological investigations indicated that due to severe floods, the game-proof fence surrounding the KNP was severely damaged that enabled buffalo to come into direct contact with cattle outside the KNP. In February 2001, a further outbreak, this time caused by FMD serotype SAT2 virus was diagnosed within the FMD control zone. Again, it was attributed to buffaloes escaping the KNP and coming into direct contact with cattle.

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<sup>2</sup> Bruckner *et.al.*, (2002). Foot and mouth disease: the experience of South Africa. OIE Scientific and Technical Review, 21(3), 751-764.

According to the South African authorities<sup>3</sup> various level of control measures are deployed in infected area (red), buffer area (blue), surveillance area (green), and the rest of controlled area (amber).



**Fig.2. RSA – FMD disease controlled areas**

In summary:

- a) **Infected zone** – FMD is endemic in the National Kruger Park where the primary source of infection is buffalo. Game-proof fences were erected to prevent contact between buffalos and cattle,
- b) **Buffer zone** - An area immediately adjacent to KNP. All cattle vaccinated bi-annually using trivalent SAT1, SAT2, and SAT3 vaccine,
- c) **Surveillance zone** - Situated west of the buffer zone. All cattle and small ruminants subject to on-going surveillance,
- d) **Rest of control area** - Inspection every 28 days, plus specified movements subject to permit controls in designated parts in Northern province.

<sup>3</sup> National Department of Agriculture Veterinary Services (2003): RSA Foot and mouth disease controlled areas. Retrieved 14 August 2003 from World Wide Web: [http://www.nda.agric.za/vetweb/Animal%20Disease/AD\\_F\\_and\\_M\\_Disease\\_Control\\_Ar.htm](http://www.nda.agric.za/vetweb/Animal%20Disease/AD_F_and_M_Disease_Control_Ar.htm)

All outbreaks that occurred during 2000/2001 were successfully contained and the OIE reinstated the South Africa's FMD zone freedom without vaccination in May 2002.

### **3.3.2 European Legislation**

Import of live animals (except registered horses) from South Africa is not permitted. Special imports of exotic animals are considered on a case by case basis.

Subject to appropriate health certification, EU rules allow for imports of:

- Fresh meat from domestic horses and other equidae,
- Fresh meat from domestic ruminants originating from officially recognised FMD free zones without vaccination. Meat must be deboned and subjected to proper maturation to ensure that a pH of less than 6, which kills the FMD virus, is achieved.
- Meat products that must be certified as having being subjected to treatment which will destroy the FMD virus,
- 'Biltong type' products that must be subjected to a treatment to achieve:
  - $a_w$  value of not more than 0.93,
  - pH value of not more than 6.0

Personal imports of animal products are not allowed from any Third Country.

## **4 HAZARD ASSESSMENT FOR THE UK**

### **4.1 RSA: FMD outbreak (recognized buffer zone)**

The last outbreak of FMD serotype SAT2 virus occurred in the Mhala district of Limpopo province in February 2001.

Given that the current outbreak of FMD occurred in the recognised buffer zone of the Republic of South Africa, the Veterinary Directorate consider at the present that with regard to:

#### **4.1.1 Trade in live animals**

- The risk is negligible, as trade in live animals, except registered horses, is not permitted.

#### **4.1.2 Trade in meat and meat products**

- The risk is negligible as the EU allows trade only from FMD free areas without vaccination and:
  - fresh meat is required to be deboned and matured;
  - meat products and biltong are required to be treated to destroy FMD virus.

#### 4.1.3 Illegal imports

- The risk from illegal imports from South Africa remains unchanged, as the area is known to be subject to control measures.

## 5. CONCLUSION

The initial information indicates that the outbreaks appear to be confined to a small area which is separated by the surveillance area from the areas recognized to be free of FMD.

Given that the outbreaks occurred in the buffer area where vaccination regime is intensive (i.e. vaccination of all cattle twice a year), epidemiological investigation, among other issues would probably have to include investigation into the vaccination programme regarding potency and safety of vaccine, storage and distribution, and use of vaccine according to established protocols.

The Veterinary Directorate continue to monitor the situation and will re-assess the hazard in light of new information to come.

Based on the above information, the Veterinary Directorate is of the view that at the present time this outbreak poses an unchanged risk to the health of the UK National livestock.

Richard Cawthorne  
Deputy Chief Veterinary Officer (15/08/03)

## 5. A CHECK SHEET<sup>4</sup>

Ref: \_\_\_\_\_

### A. Authors

Primary	Secondary	Others (insert as appropriate)
M. Sabirovic	L. Raw	

### B. Internal Peer Review

Name	Date	Changes required	Changes enclosed

### C. Approved for release

Name	Date	Notification type & place

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<sup>4</sup> M. Sabirovic (2003) – modified from: Murray, N. (2002)

## **Annex 1**

# **Foot and Mouth Disease**

### **1. The nature of the disease**

#### **What is it?**

Foot and Mouth Disease (FMD) is a highly infectious viral disease in which fever is followed by the development of vesicles or blisters - chiefly in the mouth or on the feet. There are 7 main types of virus, which produce similar symptoms and which can only be differentiated in the laboratory.

#### **How is it spread?**

FMD can spread by direct or indirect contact with infected animals. Infected animals begin by excreting the virus a few days before signs of the disease develop. Pigs in particular produce large numbers of virus particles.

The disease is spread mechanically by the movement of animals, persons, vehicles and other things, which have been contaminated by the virus. Airborne spread of the disease can also take place. The prevailing meteorological conditions and local topography determine the distance that the disease can travel and this may be considerable. For example, circumstantial evidence strongly suggests that the outbreak on the Isle of Wight in 1981 resulted from the airborne spread of the virus from Brittany in northern France.

Meat from the carcass of animals infected with FMD at the time of slaughter can transmit the virus. In the past outbreaks of the disease have been linked with the importation of infected meat and meat products.

#### **Worldwide spread**

FMD is endemic in parts of Asia, Africa, the Middle East and South America, with sporadic outbreaks in disease-free areas.

#### **Can people contract the disease?**

Advice from the Department of Health is that it is very rare. There has only been one recorded case of FMD in a human being in Great Britain in 1966. The general effects of the disease in that case were similar to influenza with some blisters. It is a mild short lived, self-limiting disease. There is however a human condition called Hand, Foot and Mouth disease, which is unrelated. It will not affect animals. If you are concerned you should contact your GP.

#### **Which animals are susceptible?**

Cattle, sheep, pigs and goats are susceptible and some wild animals such as hedgehogs, coypu, rats, deer, camels, and zoo animals including elephants.

#### **What are the signs?**

Vesicles (blisters) in the mouth or on the feet and other signs which vary somewhat but may be:

**CATTLE** - Fever, dullness, off feed, shivering, reduced milk yield and sore teats in milking stock, slivering, tenderness of feet or lameness.

**SHEEP AND GOATS** - Fever, lameness, stiff legged walk, off colour, tendency to lie down, increased lamb mortality.

**PIGS** - Fever, lameness, dullness, off feed.

### **What kinds of virus are there?**

There are 7 main types: O, A, C, SAT.1, SAT.2, SAT.3, and Asia 1. Within each type there are many sub-types, e.g. O1 and A22. The average incubation period is 3-8 days but it can be shorter or may extend to 14 days or longer. It has been confirmed that the virus responsible for the present outbreak is the highly virulent pan-Asiatic O type. When animals recover from infection by one type of virus they have little or no protection against attacks by any one of the others.

### **How is the virus destroyed?**

It can be destroyed by heat, low humidity, or certain disinfectants, but it may remain active for a varying time in a suitable medium such as the frozen or chilled carcase of an infected animal and on contaminated objects.

### **What are the effects of FMD?**

The disease is rarely fatal, except in the case of very young animals, which may die without showing any symptoms.

Affected animals lose condition and secondary bacterial infections may prolong convalescence. The most serious effects of the disease however are seen in dairy cattle. Loss of milk yield, abortion, sterility, chronic mastitis, and chronic lameness are commonplace.

### **Can FMD be cured?**

There is no cure. It usually runs its course in 2 or 3 weeks after which the great majority of animals recover naturally. The justification of the slaughter policy is that widespread disease throughout the country would be economically disastrous due to the effects already noted above.

## **2. Disease Control Measures**

### **How is the disease controlled?**

The preferred method of control is a policy of slaughter of infected animals and those animals exposed to infection. Movement restrictions are also put into place to help to contain the disease.

The European Union has a policy of non-vaccination except in extreme circumstances. This is because there are trade implications to vaccinating which would make this option unacceptable. However EU countries including the UK have access to an international bank of FMD vaccine.