

# DISEASE INFORMATION



18 August 2000

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## Contents

Foot and mouth disease in the Republic of Korea: follow-up report	121
Foot and mouth disease in Greece: follow-up report	122
Classical swine fever in the United Kingdom / Great Britain	125
Lumpy skin disease in Mozambique	129
Foot and mouth disease in Argentina: follow-up report	130

### FOOT AND MOUTH DISEASE IN THE REPUBLIC OF KOREA Follow-up report

#### FOLLOW-UP REPORT No. 3

*Text of a fax received on 1 August 2000 from Dr Joo-Ho Lee, Director of Animal Health Division, Ministry of Agriculture and Forestry, Seoul:*

**End of previous report period:** 12 June 2000 (see *Disease Information*, 13 [23], 89, dated 16 June 2000).

**End of this report period:** 1 August 2000.

#### *Date of lifting of movement restrictions*

Outbreak region	Surveillance zone	Protection zone
Chungju city	12 May	10 June
Hongsong county	10 May	7 July
Hwasong county	8 May	7 July
Paju city	19 April	5 June
Poryong county	8 May	14 July
Yongin city	13 May	19 June

#### *Serological testing up to 20 July 2000*

	No. of samples tested	No. of farms sampled
Surveillance zones	5,400	1,558
Protection zones	8,863	2,076
Free areas	3,568	1,148
Total	17,831	4,782

No herds infected with foot and mouth disease (FMD) virus have been found since the last reported outbreak on 15 April 2000.

With this lifting of movement restrictions, no movement restriction area remains.

Extensive clinical and serological surveillance has been conducted in order to review the lifting of movement restrictions.

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Serological surveillance in the protection zones using 3ABC-ELISA showed that 57 farms have animals with antibodies against foot and mouth disease virus. These results have been confirmed by the OIE World Reference Laboratory for foot and mouth disease (Pirbright Laboratory, United Kingdom) and the Foreign Animal Disease Diagnostic Laboratory (USA). These farms were subjected to quarantine and a retesting programme with collection of additional serum and probang samples from the whole herd. Of these suspect farms, 18 are still quarantined and are being tested. Retesting has been completed for the rest of the farms. Quarantine has been lifted for all the retested cattle farms because no FMD virus was found in the probang samples, PCR was negative and the 3ABC titre was lower than the cutoff point. Two goat farms were slaughtered out because further testing would be hindered by the difficulty in probang sampling the goats. Neighbouring farms have also been subjected to a testing programme for possible infection.

*Vaccination status in protection zones up to 20 July 2000*

Outbreak region	First vaccination (No. of animals)	Date of completion	Booster vaccination (No. of animals)	Date of completion
Chungju city	80,476	28 April	71,789	14 July
Hongsong county	496,514	15 May	353,903	in progress
Hwasong county	84,567	22 May	74,061	in progress
Paju city	95,851	23 April	79,106	in progress
Poryong county	23,835	11 June	17,731	in progress
Yongin city	79,504	13 May	43,848	in progress
Total	860,747		640,438	

The vaccinated animals are permanently marked by ear punching (pigs) and branding (cattle, goats and deer).

The vaccinated animals are slaughtered only at designated slaughterhouses.

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**FOOT AND MOUTH DISEASE IN GREECE**  
**Follow-up report**

FOLLOW-UP REPORT No. 3

*Extracts from an e-mail received on 14 August 2000 from Dr Vasilios Stylas, Head, Animal Health Directorate, Ministry of Agriculture, Athens:*

**End of previous report period:** 27 July 2000 (see *Disease Information*, **13** [29], 113, dated 4 August 2000).

**End of this report period:** 11 August 2000.

<A HREF="isa13\_31\_tab.htm">**New outbreaks**</A>

**Additional information on outbreak No. 00/05:**

In the absence of any link with previous outbreaks, No. 00/05 is designated as a primary outbreak. In the light of current epidemiological understanding, however, the most likely scenario of incursion is that the index case in Peplos occurred actually within another bovine beef herd, contiguous to but different from No. 00/05, which was reared right on the Evros river bank and had access by land to Turkey.

For unspecified reasons this intermediary herd passed on the infection to No. 00/05, without displaying acute clinical symptoms of FMD, and was itself killed as a contact. The fact that No. 00/05 was a permanently housed dairy herd may perhaps explain both the acute clinical course and the

earlier detection (higher sensitivity of improved dairy cattle, daily close inspection and handling, drop in milk yield).

It is interesting to note that 19 days have elapsed without any further reports of suspect cases in Peplos and, in addition, 150 samples have been randomly collected from small ruminants inside the protection zone and tested for antibodies to FMD virus (FMDV) with negative results.

This was a preliminary small-scale screening to test a working hypothesis, which remains outstanding at this point in time, but in no way does it affect or diminish the large-scale serological surveillance planned to demonstrate eradication of FMD in Greece.

***Fundamental changes in disease control policy:***

Contrary to the practices previously applied, during the current FMD epizootic the Greek Authorities have applied large-scale killing and destruction of animals, either on a preventive basis or as potential epidemiological contacts.

This constitutes a major change in disease control and eradication policy and is justified by the following considerations:

- the animal husbandry conditions and practices inside the Evros Delta and along the banks of Evros river, where large numbers of susceptible animals share common grazing grounds and watering troughs, especially after harvesting of the crops;
- the firm determination to eradicate the disease as soon as possible and as close to the border as possible, by shortening the incidence propagation rate and the overall duration of virus circulation and, therefore, reducing the probability of virus fanning out from the border area.

*<A HREF="isa13\_31\_tab2.htm">Number of animals killed and destroyed inside and around FMD outbreaks in the Prefecture of Evros, as at 11 August 2000</A>*

***Spreading and evolution of FMD in Xanthi***

**1. Background**

The last outbreak of FMD in Xanthi was reported on 14 September 1994 and involved serotype O<sub>1</sub>.

Since 1999, the dispatching of live susceptible animals from the Prefecture of Xanthi has been banned due to the occurrence of bluetongue in the adjacent Prefectures of Kavala and Rodopi.

An active epidemiological surveillance programme for bluetongue, established by Commission Decision 2000/350/EC, has been in place in Xanthi since early 2000 and the infected bovine herd (i.e. outbreak 00/09) was acting as one of the sentinel groups regularly monitored for sero-conversion. The date of last sampling for bluetongue was 13 July 2000.

## **2. Summary of events leading to suspicion and confirmation**

On 31 July, the first clinical signs were noticed by the farmer (lameness in two cows).

On 7 August, the farmer noted bleeding ulcers and erosions in the dental pad of 1 cow and, by that date, there had been a 40% drop in milk yield in the farm. The local veterinarian raised the suspicion of FMD, as typical clinical signs of FMD were observed in a high percentage of animals (salivation, lameness, ruptured vesicles on the tongue and dental pad, but no fever).

Samples (epithelium/blood) were collected and dispatched to the FMD Institute, Athens, for laboratory confirmation.

On 8 August, the FMD Institute reported positive serological results on blood samples, and on 9 August the Institute reported isolation and serotyping of FMDV type Asia 1.

## **3. Description of outbreak**

The infected holding was a dairy herd comprising 57 milking cows and 67 calves and heifers aged between 2 weeks and 8 months.

The herd was permanently housed in purpose-built facilities surrounded by corn fields and had no access to outdoor premises.

It was located on the outskirts of Potamia (40° 07' 30" N - 25° 05' 30" E), a village in south-eastern Xanthi, 100 m from the national highway and 9 km from the neighbouring Prefecture of Rodopi.

## **4. Protection and surveillance zones**

Protection and surveillance zones, with a radius of 3 km and 10 km, respectively, have been established around the outbreak.

*<A HREF="isa13\_31\_tab3.htm">Susceptible livestock population in the protection and surveillance zones around outbreak 00/09</A>*

## **5. Preliminary epidemiological considerations**

### **a) Backward tracing - Origin of infection**

Outbreak 00/09 is directly linked with active FMD outbreaks in Ferres, Evros, through movement of personnel and inanimate objects.

Specifically, on 25 July a relative of the owner visited the holding for the purpose of storing some objects (wood panels) in a storehouse adjacent to the milking facility and just metres from where the animals are reared.

This date coincides with the estimated date of infection. The person who is assumed to be the vehicle of transmission is well known and has connections in Ferres, Evros, where he lived permanently for seven years. He still visits Ferres twice a week on business and this pattern continued during the peak period of the epizootic in Ferres (late July).

The possibility of FMDV being transported from Evros to Xanthi on the wheels of the vehicle is ruled out because the distance is approx. 100 km and between Ferres and Xanthi there are at least three disinfection sites along the highway. That leaves carrying FMDV on his person as the only plausible explanation for the spread of disease.

### **b) Forward tracing - Spread of infection**

In the same village as the infected holding there are two sheep/goat flocks comprising a total of 1,000 animals, but no other bovine holdings. Since May, these sheep flocks have been led

to pasture at a distance of 1 to 2 km from the infected herd and on the opposite side of the village. Until 11 August, there were no signs of disease or reports of problems in the sheep flocks.

Serological screening (15-20%) is being planned for next week. However, due to the geographical isolation and the lack of direct contacts of the infected herd, no preventive stamping out is planned in the vicinity.

According to the epidemiological information available to date, during the ten days prior to suspicion of disease two farmers from the village of Polisitos, Xanthi, visited the infected holding and the owner of the latter holding visited a holding in the village of Pigadia, Xanthi. These are known contacts and have been placed under close surveillance.

#### **6. Disease control and safeguard measures**

Standard measures for the control of FMD, as described in our previous reports, have been initiated in Xanthi since 8 August.

In addition, the Greek Authorities have unilaterally expanded the safeguard measures laid down in Annex I to Commission Decision 2000/486/EC to include the Prefectures of Xanthi and Rodopi, imposing on them the same disease status as Evros until the situation is clarified.

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#### **CLASSICAL SWINE FEVER IN THE UNITED KINGDOM / GREAT BRITAIN**

(*Date of last previously reported outbreak:* August 1987).

##### EMERGENCY REPORT

*Extracts from a fax received on 14 August 2000 from Dr J.M. Scudamore, Chief Veterinary Officer, Ministry of Agriculture, Fisheries and Food (MAFF), London:*

**Report date:** 13 August 2000.

*Table 1.- Confirmed outbreaks of classical swine fever*

Outbreak No.	Location	Confirmation	Primary / secondary	Link	No. of pigs	Type of unit
SF 00/01	Suffolk	8 August 2000	Secondary	SF 00/02	3,300	Rearer
SF 00/02	Suffolk	9 August 2000	Primary		1,685	Breeder
SF 00/03	Essex	9 August 2000	Secondary	SF 00/02	980	Rearer
SF 00/04	Suffolk	12 August 2000	Secondary	SF 00/02	2,600	Rearer
SF 00/05	Norfolk	12 August 2000	Secondary	SF 00/02	870	Rearer

#### ***Initial detection of disease:***

A suspected case of classical swine fever (CSF) in a pig herd was reported to the MAFF's Animal Health Divisional Office (AHDO) at Bury St Edmunds, Suffolk, England, on 4 August 2000. A MAFF Veterinary Officer (VO) visited the premises the same day and, after examining the pigs on site, placed the holding under official movement restrictions (Form A) and took samples for laboratory examination for CSF and African swine fever.

The herd comprised 3,500 weaned pigs accommodated in seven houses. Illness had existed on the farm since 11 July when weaned pigs had been introduced from a breeding/multiplier unit. Since that time infection had spread to four houses and at the time of the VO visit a total of 1,110 pigs were ill or unthrifty and some 200 had died. The clinical signs observed were lethargy, yellow diarrhoea, incoordination, fever and excessive thirst. Skin lesions were also in evidence, ranging from cyanotic patches on ears and abdomen to raised, scabby lesions mainly on the legs. Pigs thereafter became moribund and died. At necropsy, gross changes indicative of chronic pneumonia and chronic peritonitis were observed together with swollen pale kidneys and enlarged, sometimes haemorrhagic, submaxillary lymph nodes.

#### ***Diagnosis:***

- A. Laboratories where diagnosis was made:** Veterinary Laboratories Agency, Weybridge, for examination for CSF; Institute of Animal Health, Pirbright Laboratory, for examination for African swine fever (to date, the results of all the tests for African swine fever are negative). The virus has been sent to the European Union Reference Laboratory, Hannover, Germany, for additional analysis.
- B. Diagnostic tests used:** fluorescent antibody test; ELISA; RT-PCR; virus isolation; analyses of the virus genome.
- C. Causal agent:** analyses of the virus genome have suggested that the genotype of this isolate is 2.1. This is the same genetic group as was isolated during the CSF epizootic in Belgium, Italy, the Netherlands and Spain in 1997-98.

#### ***Action taken following confirmation of the disease:***

On 8 August, an outbreak of CSF (Ref. SF 00/01) in the United Kingdom was declared, and national and local crisis centres were established to oversee and direct subsequent action to deal with the outbreak.

Three-kilometre protection and 10-km surveillance zones were established around the infected premises and the movement of all pigs within the zones prohibited. All the 3,300 pigs on the holding were killed on 10 August and their carcases destroyed by rendering. Preliminary cleansing and disinfection of the premises were completed on 11 August.

#### ***Subsequent outbreaks:***

Two further suspect cases were reported on 7 August. One was in a herd of rearing pigs. The second was in the breeding herd that had supplied weaned pigs to the other two CSF incidents.

Both herds were immediately placed under official movement restrictions and blood samples sent for laboratory examination. CSF was officially confirmed in both herds on 9 August (Ref. SF 00/02 breeding herd and Ref. SF 00/03 rearing herd).

New 3-km protection zones and 10-km surveillance zones were imposed around both infected premises that day. The pigs from these herds were/are being killed on 11 August (Ref. SF 00/03) and 14 August (Ref. SF 00/02) and their carcases destroyed by rendering. Tracing the movements of pigs, feedingstuffs, vehicles and people onto and off the premises was initiated to identify possible sources and spread of infection.

#### ***Epidemiological and subsequent action:***

The epidemiological enquiry initiated immediately following diagnosis of CSF in the breeding herd (SF 00/02) revealed that infection may have been present on the premises in mid-June. This herd was assumed to have been the source of infection for incidents SF 00/01 and SF 00/03. Conservatively, CSF virus was assumed to have entered the breeding unit (SF 00/02) on 1 May.

All the farms in which CSF had been confirmed were owned by or contracted to one breeding/production company. Pigs were born on breeding units and remained there for approximately three to four weeks before being moved to rearing premises where they remained for a further six to eight weeks. From the rearing units, the pigs moved to fattening units where they remained for a further ten weeks before being slaughtered. The total production cycle lasted 20 to 22 weeks. The company operated an all in/all out system for its rearing and fattening units. Thus pigs born on the breeding unit would still be within the production system and would not be slaughtered until mid-September.

With this information, the following working hypothesis was created as a basis for immediate action, in addition to the movement tracings already initiated:

- a) All rearing and fattening premises which had received pigs born after 1 May on the breeding unit would be traced and placed under official movement restrictions with immediate effect. The pigs on these premises would be clinically inspected and blood sampled to test for evidence of CSF. In addition, all the pigs on the premises that had received pigs born after 1 June would be treated as "dangerous contacts" and would be destroyed. The vast majority were expected to be still on rearing premises.
- b) The four nucleus breeding herds which had supplied breeding pigs to the multiplier breeding herd SF 00/02 from 1 April, would be traced, placed under official movement restrictions, be clinically inspected and blood sampled for evidence of CSF.
- c) The other 47 breeding herds owned by or contracted to the breeding production company would be traced, placed under official movement restrictions, be inspected by a MAFF VO, clinically inspected and blood sampled for evidence of CSF.
- d) The movements of the pig transporter that moved weaned pigs from the breeding premises SF 00/02 would be traced and the premises it visited would be placed under official movement restrictions, be clinically inspected by a MAFF VO and be blood sampled for evidence of CSF.

***Position at 13 August 2000:***

*Table 2.- Number of pig herds within the protection and surveillance zones*

Outbreak No.	Protection zone*	Surveillance zone
SF 00/01	6	150
SF 00/02	23	346
SF 00/03	8	116
SF 00/04	22	312
SF 00/05	19	409

\* All premises in the protection zones have been placed under official control.

**Rearing and fattening premises linked to CSF outbreak SF 00/02:**

Seven rearing premises were found to have pigs born after 1 June from outbreak SF 00/02. All were placed under official movement restrictions.

- a) Two premises had been depopulated and the premises restocked following cleansing and disinfection. The holdings are under official movement restrictions (Form B) and the pigs will be serologically tested for evidence of CSF after three weeks. The fattening units to which the suspect pigs had been moved will be restricted and tested for CSF.
- b) All the pigs on the remaining five premises (SFR 00/07, 00/08, 00/11, 00/12 and 00/14) have been destroyed and their carcasses disposed of by rendering. CSF infection has been confirmed on four premises (outbreaks SF 00/01, 00/03, 00/04 and 00/05). Results of laboratory testing are awaited for SFR 00/12. So far these are not positive.

<A HREF="[isa13\\_31\\_tab4.htm](#)">*Table 3.- Number of premises currently under restriction as suspect CSF holdings (premises placed under restriction and awaiting the outcome of laboratory tests)*</A>

Four rearing premises were traced which had received pigs from outbreak SF 00/02 born after 1 May. All were placed under official movement restrictions. Two premises had been depopulated since receiving rearing pigs from SF 00/02. These have been placed under movement restrictions and the pigs currently on the holding will be tested for CSF in three weeks time. The other two premises have been placed under official movement restrictions and are being tested for CSF.

Eight fattening premises were traced and found to have suspect pigs from outbreak SF 00/02. These have been placed under official movement restrictions and are being tested for CSF.

Primary breeding herds that supplied outbreak SF 00/02:

Four primary breeding herds were found to have supplied breeding stock to SF 00/02 after 1 May. All have been traced and inspected by a MAFF VO. There was no evidence of clinical illness on any of the farms. All four have been placed under official movement restrictions (Form B) and blood samples taken to test for evidence of CSF.

Other breeding herds owned by the production/breeding company:

The breeding/production company in whose herds CSF has been confirmed, owns 48 breeding farms, 42 of which are in East Anglia. Eighteen have been officially inspected, placed under movement restrictions and blood samples taken for serological evidence of CSF. It is hoped to complete official inspections and blood sampling in the remaining 29 herds by 18 August.

Other suspect CSF incidents:

Of the 15 suspect CSF incidents reported to date (see Table 3), 12 have occurred in rearing or fattening premises supplied by the primary case (SF 00/02) after 1 June.

Three other suspect cases are being officially investigated. One is in a breeding herd in Suffolk and two are in fattening herds in Staffordshire. The breeding/production company at the centre of this epizootic owns the latter two herds.

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### **LUMPY SKIN DISEASE IN MOZAMBIQUE**

EMERGENCY REPORT

*Text of an e-mail received on 15 August 2000 from Dr Francisco Gomes Pinto, Head of the Animal Health Department, Ministry of Agriculture, Maputo:*

**Report date:** 10 August 2000.

**Nature of diagnosis:** clinical and laboratory.

**Date of initial detection of animal health incident:** 14 July 2000.

**Estimated date of first infection:** 1 July 2000.

**Outbreaks:**

Location	No. of outbreaks
Gaza province, 25° 01' 30" S - 33° 05' 15" E	1
Nampula province, 16° 10' S - 39° 05' E	1

**Description of affected population:** local Nguni and Brahman cattle.

**Total number of animals in the outbreaks:**

species	susceptible	cases	deaths	destroyed	slaughtered
bov	1,131	19	1	0	1

**Diagnosis:**

A. **Laboratory where diagnosis was made:** National Veterinary Research Institute (INIVE).

B. **Diagnostic tests used:** histopathology (Gaza outbreak).

**Epidemiology:**

A. **Source of agent / origin of infection:** local.

B. **Mode of spread:** vectors.

**Control measures during reporting period:** quarantine; vaccination (Nampula outbreak).

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## FOOT AND MOUTH DISEASE IN ARGENTINA Follow-up report

### FOLLOW-UP REPORT No. 1

*Translation of the summary of an e-mail received on 16 August 2000 from Dr Oscar Alejandro Bruni, President of the National Service of Agrifood Health and Quality (SENASA), Secretariat for Agriculture, Livestock, Fisheries and Food, Buenos Aires:*

**End of previous report period:** 8 August 2000 (see *Disease Information*, 13 [30], 117, dated 11 August 2000).

**End of this report period:** 14 August 2000.

#### ***Diagnostic tests and causal agent:***

Prior to slaughter, samples (serum and oesophageal-pharyngeal liquid) were taken from the animals that had entered the country illegally.

The result of serological testing were as follows:

- VIAA<sup>(1)</sup>: four reactors.
- EITB<sup>(2)</sup>: confirmation of the reaction in these four animals.
- Probang test (technique used to isolate animals carrying the foot and mouth disease [FMD] virus): in one of the samples a cytopathic effect was observed during the third passage in BHK-clone 21 cells.

The suspended cellular particles were examined using the following techniques:

- Typing and subtyping using the ELISA technique (Pan American Foot and Mouth Disease Centre – CPFA): FMD virus type A.

This was corroborated using:

- Typing and sub-typing by 50% complement fixation: strong evidence of FMD virus type A<sub>24</sub>.
- Characterisation of the immunogenic profile with panels of monoclonal antibodies developed against all of the South American strains of FMD virus and mono-specific hyper immune sera: compatible with the A<sub>24</sub> virus.
- Sequencing of genomic RNA is under way.

**Comment:** No field strain compatible with A<sub>24</sub> has ever been isolated or diagnosed in Argentina, and it can therefore be unequivocally deduced that it is exotic in nature.

#### ***Control measures:***

To date, due to adverse weather conditions, only 842 animals in the communally owned establishment in the Province of Formosa have been destroyed out of a total of 1,308 animals on this property, belonging to 22 different livestock owners.

Continuing the tasks of isolation, prophylaxis and disinfection, a total of 1,546 bovines were destroyed in the establishment in the Province of Corrientes and 709 bovines in the establishment of Entre Ríos, thereby covering all of the susceptible animals in these establishments and the cattle that were introduced.

At no time were any clinical signs of FMD identified during the health inspections and implementation of the sanitary measures.

The destinations of the 12 consignments out of the total of 13 consignments that left the communally-owned property and surrounding area were as follows: Corrientes (3 consignments totalling 34 bovines); Santa Fe (5 consignments totalling 173 bovines), Chaco (3 consignments totalling 80 bovines) and Santiago del Estero (1 consignment of 100 bovines). All 387 of these bovines tested negative to all of the serological tests. They have all been placed in quarantine prior to undergoing a new battery of diagnostic tests. Disinfection and quarantine measures have been applied in all of these establishments on a preventive basis.

In the rest of the country, in order to sample and monitor all of the herds that have left the surveillance zone, movement restrictions have been placed on cattle due to be sent to winter accomodation, with effect from 11 August. In compliance with the sanitary measures, the only movements currently authorised are to the abattoir, for immediate slaughter.

In the surveillance zone intensive livestock controls are being continued. Serological monitoring is in progress in the region and in the remainder of the country.

- (1) VIAA: virus infection associated antigen.  
(2) EITB: electroimmunotransfer blot.

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