

*REPORT*

*Heelsum,  
the Netherlands,  
15 & 16 November  
2001*

**EXECUTIVE COMMITTEE**

**of the European  
Commission for the  
Control of  
Foot-and-Mouth  
Disease**

**Sixty-sixth Session**





**EUROPEAN COMMISSION FOR THE CONTROL OF  
FOOT-AND-MOUTH DISEASE**

**REPORT**

**of the**

**Sixty-sixth Session of the Executive Committee**

**Heelsum, the Netherlands  
15 and 16 November 2001**



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## **INTRODUCTION**

The Executive Committee of the European Commission for the Control of Foot-and-Mouth Disease (EUFMD) held its Sixty-sixth Session at Heelsum, the Netherlands, on 15 and 16 November 2001.

### **Members of the Committee present :**

Pf. Werner Zwingmann, Germany (Vice-Chairman)  
Dr Yanko Ivanov, Bulgaria  
Dr Preben Willeberg, Denmark  
Dr Dionisis Panagiotatos, Greece  
Dr Tibor Soós, Hungary

### **Observers :**

#### **Chairman of the Research Group**

Dr Kris De Clercq, CODA-CERVA-VAR, Ukkel, Belgium

#### **WRL**

Dr A.J.M. Garland, Pirbright, UK

#### **EC**

Dr Alf-Eckbert Füssel, SANCO, Food Safety, EC, Brussels, Belgium

#### **OIE**

Dr Jim Pearson, Head Scientific Department, Paris, France

#### **FAO**

Dr Yves Cheneau, Chief, Animal Health Service, AGA, Rome, Italy

#### **France**

Dr Francis Geiger, DGAL, Ecole nationale vétérinaire de Toulouse, Toulouse

#### **The Netherlands**

Dr Frederik H. Pluimers, Chief Veterinary Officer, The Hague  
Dr Aldo Dekker, Project Leader, Laboratory Vesicular Diseases, Institute for Animal Science & Health, Lelystad

#### **Turkey**

Dr Musa Arik, Head of Department, MARA, Ankara

#### **Secretariat**

Dr Yves Leforban, EUFMD, FAO, Rome  
Dr John Ryan, EUFMD (APO until 3 October 2001)  
Ms Egiziana Fragiotta, Administrative Clerk, EUFMD, FAO, Rome

Apologies for absence were received from the Chairman, Dr Sánchez Esteban, and from Drs Marabelli and Celeda.

The meeting was chaired by Professor Zwingmann, Vice Chairman of the Executive Committee. He was assisted by Dr D. Panagiotatos and Dr F.H. Plumiers.

On behalf of the Minister of Agriculture, Dr Frederik Plumiers, Chief Veterinary Officer, welcomed the participants to the Netherlands. He stated that the Dutch Ministry is very pleased that it was agreed to hold the 66<sup>th</sup> Session of the Executive Committee in the Netherlands. He pointed out that the Netherlands experienced an outbreak of FMD in Spring of the current year. As a result of this, FMD is not only high on the Agenda of politicians and farmers, but has also become of importance to the general public. The disease has had a disastrous effect in the farming industry in the affected areas, as well as in other economic activities, such as transport, trade and slaughterhouses. The tourist trade, nature reserves and zoological gardens have also undergone serious losses. He informed the meeting that he will explain how FMD has been eradicated from the Netherlands in his presentation later on. He also commented on how the reaction of the general public and farmers to the recent outbreak will make it difficult to apply the same measures taken to any future outbreak. He considers that it is time for a change, and stated that it will no longer be accepted that a large amount of animals have to be killed and incinerated without proper use. The Ministry is making an effort to start a discussion which will hopefully lead to the most appropriate eradication measures which will avoid the destruction of so many animals. This is also one of the reasons why the Dutch Minister took the initiative to organize jointly with Dr Diouf, the Director-General of FAO, a ministerial meeting in Rome on 6 November to discuss this issue. This will also be discussed during the International Conference on prevention and control of FMD to be held in Brussels on 12 and 13 December. He expressed the Dutch Ministry's satisfaction with the work of the Executive Committee in its attempt to assist countries in their fight against FMD and its introduction into Europe. He concluded by wishing the meeting a fruitful discussion.

The floor was then given to Prof. Zwingmann who individually welcomed each member of the Executive Committee and the representatives from OIE, EC, FAO and WRL. He welcomed the representatives from the host country, Dr Plumiers and Dr Dekker, the observer from Turkey and France, and Dr Ryan from Ireland, and finally, Dr De Clercq, the Chairman of the Research Group. He also welcomed the Secretary and Ms. Joan Raftery's successor, Ms Egiziana Fragiotta who was recently appointed as the Administrative Clerk by FAO. He apologized on behalf of those who were unable to attend, Dr Sanchez Esteban, the Chairman who was unable to travel for health reasons; Dr Marabelli and Dr Celeda.

He reviewed the Agenda and informed the meeting that it includes many important items to be discussed. FMD continues to be a threat to Europe and this will be examined together with the present situation in the UK, and the world situation as a whole.

He concluded by wishing the participants a good meeting and an enjoyable stay in the Netherlands.

### **Item 1 – Adoption of the Agenda**

The following Agenda was proposed to and adopted by the Committee:



## **Item 1. Adoption of the Agenda**

### **Item 2. FMD situation :**

- Update of the FMD situation in the world
- Update from the WRL
- Update of the situation in the UK
- Control of FMD in the Netherlands

### **Item 3. Report on the FMD situation and control Programme in Turkey :**

- Report of Turkey
- Report of the Tripartite Group Meeting of 12 October in Bulgaria

### **Item 4. Activities towards CIS and Central Asia :**

- Activities sponsored by France in Iran and proposal for FMD surveillance in Central Asia
- Report on the FAO/TCP Project for FMD Control in Turkey and Iran (Project TCP/INT/8922)
- Follow-up to the Buffer Zone in Caucasus

### **Item 5. Report on the activities of the Research Group :**

- Report of the Session of the Research Group in Moen Island, Denmark 12-14 September 2001 and other activities (European Pharmacopoeia)

### **Item 6. Financial matters :**

- Report on the EUFMD accounts as at 30 September 2001

### **Item 7. Any other business :**

- Personnel matters
- Follow-up of the proposals from the 34th Session
- Report on the Simulation Exercise held in Brno, 5-7 June 2001
- 67<sup>th</sup> Session of the Commission

### **Item 8. Adoption of the draft report**

- Closing remarks.

## **Item 2 - FMD situation**

### **Update of the FMD situation in the world**

John Ryan presented maps on the FMD situation in Europe and globally in 2001 (Appendix 1). He highlighted the fact that the worldwide FMD situation had deteriorated significantly during 2001. European countries such as the UK, Ireland, France and the Netherlands that had been free of the disease for long periods of time have had to cope with introductions of virus and the subsequent difficulties of disease eradication. Other countries that were considered to have improved situations with regard to FMD, such as Argentina and Uruguay have experienced the reintroduction of the disease that completely reversed the advances made in recent years and necessitated returning to a policy of mass prophylactic vaccination as a means of controlling FMD.

The Committee noted that the deteriorating FMD situation is a global problem and that there are no quick or easy solutions to the problem. The Committee felt that a two-pronged strategy of improving the situation in endemically infected regions and countries along with improved defences at home was the most appropriate way forward. The Committee felt that while a global approach to FMD control is necessary, the problem was so great and so varied across continents and regions that it could not be reasonably tackled rapidly. He also suggested that regional programmes with appropriate realistic objectives and phases should be established and funded by international organizations. The Committee considered that a reasonable response at the European level was to concentrate on specific achievable targets i.e. to continue to act to prevent the introduction of FMD into Europe and support the neighbouring countries in their effort to better control the disease.

Noting that many of the problems seemed to occur in countries neighbouring China, that internal movements of live animals are increasing in that country due to the accelerated integration of animal production over wide areas, that the FMD situation is not systematically reported at the international level and that there is direct evidence of use of "live" FMD vaccine in China, the Committee concluded that China is one of the key countries for the future control of FMD in the region and world-wide. The recent entry of China to the World Trade Organization and the WTO's latest efforts to free agricultural trade may pose risks for disease spread, but it is also an opportunity to improve relations and transparency and to share information and expertise in FMD control with that country.

The representative from FAO took the floor to explain the context of the FMD Ministerial meeting organized jointly by the Minister of Agriculture of the Netherlands and the Director-General of FAO, on 6 November. He stated that within a global programme for FMD control proposed by this meeting, each region should define its own strategy. He was also of the opinion that the role of China will become increasingly important. FAO is already in contact with the Chinese Veterinary Administration and encouraged disease surveillance in this region. Better conditions have been created for disease reporting subsequent to the membership of China in the WTO, which should be followed by more active exchanges with other international organizations and particularly with OIE.

The Committee reiterated its support for vaccination as an important tool for FMD control in all regions of the world, but questioned whether there was a problem with the correct inactivation of vaccine in certain regions of the world because of the genetic similarity of recent South American and African FMD isolates to FMDV vaccine strains that are exotic to the regions affected.

### **Update from the WRL**

Dr Tony Garland reported on samples received at the WRL during the period 1 September to 14 November 2001. Of 110 samples received, 38 were of serotype O, 4 of type A, and 3 of type Asia 1 while no virus was detected in 65 samples. That report supplemented the meeting report of the OIE FMD and other Epizootic Diseases Commission in Paris on 24 September 2001. This report and the supplementary data are given in Appendices 2 and 3.

### **Update of the situation in the UK**

Dr Tony Garland then briefly summarized the early history of the UK epidemic and described the involvement of the Pirbright Laboratory (Appendix 4). The total number of infected

premises as at 15 November was 2,030 (2,026 in England and 4 in Northern Ireland). 3,940,000 animals in a total of 9,075 premises have been slaughtered of which 3,176,000 were sheep. There had been no outbreaks of FMD since 30 May in Scotland, 12 August in Wales and 30 September in England. Figure 1 shows the epidemic curve as of 11 November 2001.

Details of the number of tissue specimens tested by antigen ELISA and virus isolation in tissue culture for the confirmation of diagnosis were provided. A total of 15,396 tissue specimen had been tested as of 14 November 2001. Of those 1,816 were positive for type O, with approximately 90% typed on original lesion material and 10% after passage in tissue culture. The PCR method was also applied to selected samples.

A dendogram was provided (figure 2) of the neighbour-joining tree depicting the genomic relationships between sequenced samples selected from different geographical locations during the course of the UK epidemic and also including analysis of virus isolates supplied from Ireland, France and the Netherlands; the latter incorporating data from Dr Aldo Dekker of the Lelystad Laboratory. All the isolates belonged to the type O PanAsia family and showed close genomic similarity.

A massive serological serosurvey was in progress. The liquid phase blocking ELISA (LPB ELISA) a Solid-Phase competition ELISA (SPC ELISA) and the Virus Neutralization test (VNT) have all been used for the detection of serum antibody. The LPB ELISA was used as a screening test and the SPC ELISA was the principal test employed for the survey. Ongoing validation of the SPC ELISA showed a specificity of 100% at 50% and 60% inhibition and a sensitivity of 97.5% at 50% and 99.8% at 60% inhibition. The survey was principally based on a statistical sampling protocol designed to give a 95% level of confidence of detecting infection at a prevalence of 5% (95/5).

A total of 2,280,243 ELISA tests had been carried out. Some 1,777,066 animals on 9,968 farms within the 1 to 3 km Protection Zone (PZ) had been sampled and 1,932,382 animals sampled in the 3-10 km Surveillance Zone (SZ) around the FMD outbreaks. One hundred percent of the farms in both zones were sampled. Five laboratories are now engaged in testing sera (including Pirbright) with a total combined capacity of some 200,000 sera per week. The surveys had the objective of tracing the extent of the subclinical infection, of epidemiological investigations, of lifting of disease restriction, of permitting the movement of animals and of monitoring of restocking.

Table 1 (Appendix 4) shows interim results of the serological sampling to date. Positive results had been found in 402/736,598 (0.05%) of sera from 29/9,968 (0.29%) farms in PZ sampling. Corresponding figures of 150/795,803 positive sera (0.02%) from 6/9,233 farms (0.06%) from SZ sampling, while 61/625,107 sera (0.03%) from 1/1,814 farms (0.05%) had been positive in sera taken to permit the movement of animals. The majority of serum samples were derived from sheep and goats.

Maps were also presented showing the progress of the serological survey and the progress of the clearance exercise. The classification of counties according to an analysis of the level of residual FMD risk was also shown. Restrictions had been lifted in all but 4 areas, including parts of Cumbria, Northumberland, Durham and North Yorkshire, where sampling was continuing.

Dr. Garland also described the restocking protocol as involving a serological test of the sentinel animals before moving onto the farm, four weekly clinical inspections on the partially restocked farm and a final serological test on the sentinel animals at the time of the last clinical inspection. He reported that only one suspect case of recrudescence had occurred with this restocking protocol. Following the meeting he confirmed that retesting had shown that the single, suspect, positive animal detected in the restocking exercise had given negative results on rebleeding, as had all other livestock on the farm.

In response to questions on the costs of the outbreak, Dr. Garland stated that the direct costs have to date been estimated to be £8-9 billion.

The absence of new outbreaks since 30 September, together with the low frequency of detection of positive serum antibody to FMD in serological surveillance, gave cause for cautious optimism concerning the control of the UK FMD epidemic of 2001.

### **Control of FMD in the Netherlands**

Dr. Frederik Plumiers made a presentation (Appendix 5) on the history of the FMD epidemic in the Netherlands in 2001, where 26 outbreaks were recorded. In order to control the epidemic, the Netherlands used suppressive and ring vaccination with a double oil emulsion vaccine (potency >3 PD<sub>50</sub>) in addition to stamping out. All vaccinated animals were subsequently slaughtered.

The Committee congratulated the Netherlands for the quality of their disease crisis response and for their appropriate use of vaccination to control the disease in their particular circumstances. The Committee noted that when used around clearly defined infected areas, emergency ring vaccination can be a very effective tool for stopping the spread of clinical disease.

The Secretary noted that the recent history of FMD outbreaks in Europe (Albania, FYR of Macedonia in 1996) and in North Africa (Algeria in 1999), showed that the spread of the disease has stopped and the number of cases has dropped in the vaccinated areas within 2 weeks of vaccination. Subsequent non-structural protein serology has indicated that the virus continued to circulate sub-clinically at a low level for a very short period of time and was not responsible for further outbreaks in any of the regions of those countries.

The Committee noted with regret that a great deal of mis-information regarding the OIE and EC rules, the performance of vaccine, the safety of products from vaccinated animals and the rationale behind the slaughter policy was circulated in the media and by pressure groups and lobby groups, especially in the UK. This made decision-making on the optimal choice of control methods very difficult for some countries.

Some examples of important points regularly confused in the media are:

- OIE or EC rules do not prohibit vaccination;
- countries can regain their OIE freedom from FMD status after one year if vaccination is used to control the disease;
- meat and milk from vaccinated animals poses no risk to human health;
- vaccination using a safe, appropriate, potent vaccine stops clinical FMD quickly.

The Committee recognizes that the current EC and OIE rules regarding trade strive to minimise the social and economic impact of FMD outbreaks and that full advantage of the existing rules is often not taken.

The Committee also believes that the repercussions of using emergency vaccination are still too strong and that given the recent advances in technologies for the differentiation of vaccinated from infected herds, that new rules need to be put in place to allow a vaccination-to-live-strategy with less repercussions on trade and the national economy.

### **Conclusions**

1. The FMD situation worldwide during 2001, with different serotypes and strains of virus spreading beyond their traditional endemic areas, remains a source of concern for Europe. The risk of introduction to European countries remains high.
2. International trade in live animals (livestock, exotic pets, game species, zoo animals) and of animal products in most regions of the world is increasing (involving countries which did not previously participate in international trade). This remains the primary risk for the spread of FMD, particularly because there is a general neglect of biosecurity issues and their hidden costs to individual enterprises and society as a whole when driving trade liberalization measures forward.
3. Improvements in roads, internal markets and in air and sea transportation increases the risk of disease spread.
4. The deterioration of national Veterinary Services in many countries, due to understaffing, poor salaries and cut-backs in resources, seriously undermines their ability to quickly uncover an exotic disease problem and respond appropriately.
5. China is a critically important country for the global control of FMD and improved notification system in the region would allow greater international cooperation in the control of FMD.
6. There is some nucleotide sequencing evidence, from recent epidemics in South America and Africa, suggesting that improperly inactivated vaccine may be the origin of some outbreaks.
7. The situation in the UK looks promising given that there have been no outbreaks since 30 September 2001 and considering the low numbers of positive sera detected during the serosurveillance of sheep.
8. The Netherlands implemented a new approach in disease control and made good use of existing provisions for emergency vaccination based on a "vaccinate to cull" strategy. They demonstrated that suppressive vaccination used for the first time in Europe can be successful in stopping the disease under particular situations.
9. During recent outbreaks there have been communication failures between the Veterinary Services and individual veterinarians, farmers, farmers representatives, governments, the food industry and the general public. These communication failures have allowed misinformation to flourish, have led to breakdowns in trust between

stakeholders and sub-optimal decision making by politicians under the influence of pressure groups.

10. Developments in technology for the differentiation of vaccinated from infected herds needs to be rapidly integrated into EC and OIE trading rules to allow a “vaccinate to live” strategy with much lower impact on the trading system.

### **Recommendations**

1. Aspects of the structure and culture of the animal production industry involving extensive movements and gathering of animals, driven by economic policies, are inherently dangerous for the spread of contagious disease. Specific attention must be given to biosecurity measures necessary to reduce the risk of disease dissemination, or measures to decrease or ban unnecessary movements.
2. The implementation of these biosecurity measures will require that the National Veterinary Services are funded and staffed to a level commensurate with the workload and responsibilities.
3. All European countries should recognise the persisting risk of FMD and take advantage of the lessons learned by the affected member countries to improve their contingency planning and prevention measures for FMD.
4. Efforts need to be directed towards increasing surveillance, reporting and cooperation in FMD control in certain key countries, especially in Asia.
5. Consultation with and education of all stakeholders must take place in advance of an outbreak of FMD, preferably during the contingency planning process.
6. Rules regarding international trade in animals and animal products should be revised to minimise the penalties associated with emergency vaccination, provided that tests to differentiate vaccinated from infected herds/flocks are fully validated and properly used.

### **Item 3 – Report on the FMD situation and control programme in Turkey**

#### **Report of Turkey**

The representative from Turkey presented a report (Appendix 6) on the situation of FMD over the past ten months (January to October 2001). He stated that the situation is improving but is still serious with the presence of types O, Asia 1 and A which continue to circulate; 83 outbreaks had been reported, 49 due to type O, 32 due to type Asia 1 and 2 due to type A.

No FMD outbreak has been reported since March 1995 in the Thrace region when an outbreak – due to type O - occurred in a goat flock in Tekirdag Province in June 2001. The disease was brought under control by the implementation of strict measures such as quarantine, disinfection, movement bans, control of animal markets and ring vaccination in the region. As a result, the disease did not spread to other locations and all restrictive measures in the outbreaks mentioned have been lifted.

The present situation for vaccine production at the Sap Institute is favourable and the quantity of vaccine is sufficient to cover the needs for the Autumn campaign. Vaccine production for the year 2001 amounted to 24,750,000 doses.

The vaccination programme in Turkey for 2001 is as follows:

- In Thrace and Marmara Sea Region (Edirne, Tekirdag, Kırklareli, Istanbul and Canakkale, Balıkesir, Bursa, Yalova, Kocaeli, Sakarya, Bilecik, Bolu, Duzce provinces): bi-annual vaccination of all ruminants with a trivalent vaccine containing serotypes O<sub>1</sub> Manisa, Asia 1 and A Aydın 98 (Iran96) in Thrace and Marmara region.
- In the other regions of Turkey: bi-annual vaccination of large ruminants with a trivalent vaccine.

The results of serological surveillance following the Autumn vaccination in Thrace Region in 2000 were also presented. The trivalent FMD vaccine (O1 BFS, A22 Iraq and Asia 1) donated by the EU was used for the Autumn vaccination campaign in Thrace. LPB ELISA results indicate a drop in protective titres on day 60, which, to date, could not be explained.

Vaccination coverage in the 2001 Spring campaign was about 60% both in Thrace and in Anatolia. The Autumn vaccination campaign in Thrace and in Anatolia started on 1 October 2001 and should be completed by 15 December. 1.1 million doses of trivalent vaccine (O1 Manisa, A Iran 96, Asia 1) have been provided by EUFMD under the EUFMD-FAO/EC project. The vaccination coverage in Thrace so far has been 51% and 15% in large and small ruminants respectively, but would increase as the campaign progressed.

A molecular epidemiology laboratory has been established at the Sap Institute. The identification system for cattle (ear tag and recording) was started on 10 September 2001. The training programme for the identification system has been completed. The control of animal movement has been reinforced and some articles of the law have been changed to increase the penalties in cases of illegal movement.

### **Report of the Tripartite Group Meeting of 12 October 2001 held in Bulgaria**

The Secretary presented a report on the Tripartite Group meeting (Appendix 7).

The meeting recommended that regional cooperation be reinforced and that an EUFMD mission, including representatives from Greece and Bulgaria, visit Turkish Thrace to assess the situation and the status of the FMD vaccination campaign with the vaccine supplied by EUFMD/EC. The mission should also contribute to defining the reasons for the apparently sub-optimal immune response in the 2000 campaign in Thrace and propose corrective measures. Finally the mission should contribute to the preparation of a TCP project on infectious transboundary disease surveillance in the Balkan Region of Bulgaria, Greece and Turkey.

This proposal has been accepted by Turkey and the organization of the mission, which should take place in the last week of November, is in progress.

One particular activity concerns the series of workshops for national FMD and exotic disease laboratories in the region initiated by Greece in 1998. The next workshop will be held in

Bulgaria in March 2002. It will be devoted to the comparison of 3ABC ELISA results in the region and to ELISA tests for the diagnosis of Bluetongue.

### **Recommendations**

- The Committee supports the conclusions of the Tripartite meeting and particularly the mission to Thrace foreseen at the end of November. The mission will comprise the Secretary of the EUFMD, the EC and one expert from Greece and Bulgaria.
- The Committee encourages the continuation of the workshops for FMD and other exotic diseases between national laboratories in the region.
- Particular attention should be given to the serosurveillance in Thrace to monitor the Autumn vaccination campaign and to look for virus circulation using the 3ABC ELISA.
- The Committee recommended that support continue to be provided by the Commission under the EC/EUFMD Trust fund for serosurveillance in Bulgaria (up to a maximum of \$5000). The use of 3 ABC ELISA is encouraged.

### **Item 4 - Activities towards CIS and Central Asia**

#### **Activities sponsored by France in Iran and proposal for FMD surveillance in Central Asia**

Dr Francis Geiger, from the French Veterinary Services, reported on the cooperation between the French and Iranian Veterinary Authorities over the past 5 years and made a proposal for setting up an FMD surveillance system in Central Asia (Appendix 8).

Since 1996, Dr Geiger has been in charge of a veterinary bilateral cooperation programme between Iran and France. He emphasized the different components of the FMD activities carried out under this programme, such as: a training period in France on epidemiology and diagnosis for Iranian veterinarians; scientific and technical seminars organized in Iran with French experts; trainers/trainees assistance in field diagnostics; and a supply of reagents and diagnostic kits.

He stressed the European interest to better monitor and control FMD at source and presented the advantages for Europe to set up an advanced post of observation for FMD in Central Asia, with location in Iran, which is a crossroads for animal movement from East to the West (to Turkey) and to the Caucasus. This "centre" should work in close cooperation with the Iranian IVO but should remain independent.

The roles of the FMD surveillance "centre" would be:

- to analyze the epidemiological data collected in Iran and in the project's member countries (still to be defined);
- to carry out surveillance of viral strains circulating in the region;
- to establish a sentinel veterinary network in sensitive border areas in Iran;
- to circulate information collected to the countries involved and also to the international organization and to EC.



He proposed to set up a feasibility study with a joint EC/FAO/OIE/French experts mission to take place next January or February and to submit the mission report to an appropriated joint international committee.

The Executive Committee noted with interest this proposal for proactive action to be taken for the surveillance of FMD in Central Asia by establishing a surveillance centre in Iran. The Committee suggested that FAO should play a coordinating role to harmonize the different regional FMD control programmes currently in progress or proposed.

### **Recommendations**

- The EUFMD Commission supports the proposal to organize, in conjunction with the French Veterinary Services, EC and OIE, a mission to assess the feasibility of an FMD surveillance centre for Central Asia in Tehran early next year.
- The report of the mission and a provisional project document should be submitted to appropriate international organizations, including the WRL. Donors should be identified.
- Turkey should be associated to the project especially in the laboratory component so that cooperation initiated between Iran and Turkey through the FAO TCP could be pursued and reinforced for the benefit of the two countries and of Europe.

### **Report on the FAO TCP project for FMD control in Turkey and Iran (project TCP/INT/8922)**

Dr Arik presented the activities carried out between Iran and Turkey. He explained that a second workshop is being held at the Ankara Sap Institute oriented towards Quality Control of FMD Vaccines (both aqueous and oil formulations) and field control of FMD. The project has so far been very beneficial to Turkey and has both reinforced cooperation with IVO in Iran and established new links between FMD institutes.

### **Recommendation**

- Follow-up to the cooperation between Turkey and Iran initiated through the TCP project is encouraged.

### **Follow-up to the Buffer Zone in Caucasus**

The Secretary reminded the Committee of the activities carried out by the Commission in the Caucasus through the Letters of Agreement signed between ARRIAH and FAO in 1999 and 2000. Two FAO/EC/OIE missions visited the countries in the region respectively in March 1999 and July 2000.

The mission carried out in 2000 concluded that despite the efforts on the part of ARRIAH, the results of the project were sub-optimal, especially regarding the surveillance, diagnosis and reporting of the disease. This situation was mainly related to the weakness of the National Veterinary Services and crucial lack of resources. Following the mission report the EUFMD and its Executive Committee proposed to suspend support to the Buffer Zone programme in the region until the recommendations of the mission are implemented.

A new request for resuming support to the Buffer Zone in Caucasus has been addressed to EUFMD by ARRIAH, Armenia and the CIS Intergovernmental Council for Collaboration in

the field of Veterinary Medicine. The Secretary asked the Committee to consider this request. After a long discussion on the subject, the following was recommended:

- EUFMD should continue to pay attention to the situation in the region and keep close contact with ARRIAH, Vladimir and with the Caucasus countries which are members of FAO.
- A joint meeting should be held between the international organizations: FAO/EUFMD, EC, OIE in early February 2002 to evaluate the situation and study the type of support to be provided. This meeting should be followed by a tripartite meeting with the participation of the countries concerned.

#### **Item 5 - Report on the activities of the Research Group**

##### **Report of the Session of the Research Group in Moen Island, Denmark, 12-14 September 2001 and other activities (European Pharmacopoeia)**

Dr Kris De Clercq reported on the Session of the Research Group which was held on the Island of Moen, Denmark from 12 to 14 September 2001 (Appendix 9). The following recommendations were made:

#### **Recommendations**

- Reference reagents for antibody detection and virus detection should be made for all FMDV strains representing a high risk to Europe. Reference sera for antibody detection should be from vaccinated and infected animals. This should be done through a project involving a network of laboratories. The established reference reagents should then be included in the Collaborative Laboratory studies.
- The Collaborative Laboratory studies carried out so far by the EUFMD should be given high priority and organized jointly by EUFMD, EU and OIE.
- The details for the creation of a test reagent bank has to be worked out as a matter of urgency.
- EUFMD should play a key role in information exchange between laboratories, especially during a crisis period.
- Sampling schemes should be proposed for surveys determining a certain prevalence of infection and a separate one for declaring freedom from infection.
- Serosurveillance based on NSP-ELISA in Turkey and Bulgaria is encouraged.
- A detailed study on trade flows in animals/animal products and movement of people should be performed for further risk analysis by the EUFMD.
- The Research Group should be involved in the amendments made to the FMD vaccine monograph made by the Eur. Pharm. and in the establishment of the guidelines made by EMEA.

- Countries are encouraged to replace the LPBE by the SPCE and to use NSP-ELISA whenever appropriate, taking into account the limitations of each test.
- Tests have to be developed and validated to evaluate the degree of vaccine purification which will provide assurance of the absence of anti-NSP antibodies after vaccination. Criteria based on these tests have to be included in the Eur. Pharm.

*The conclusions and recommendations of the Research Group were endorsed by the Committee.*

## **Item 6 - Financial matters**

### **Report on the EUFMD accounts as at 30 September 2001**

Dr Yves Leforban presented the accounts of the Commission as at 30 September 2001 (Appendix 10). He was able to explain in detail each item of expenditure due to the new financial system now in operation in the FAO.

With regards to the outstanding contributions from member countries, Dr Leforban informed the meeting that only six countries have arrears. However, Bulgaria gave evidence of the payment made recently to settle its dues and Italy has now paid a large part of its arrears. The CVOs of the remaining countries have been approached and the matter will be followed up.

He also stated that the request for membership of the Federal Republic of Yugoslavia to the EUFMD is under consideration by FAO. Instructions will be given in due course by FAO to the Secretariat of the Commission on the way that the UN organizations will treat the arrears of the former Yugoslavia.

*The meeting approved the financial statements presented and had no further questions in this regard.*

He then reported on the EC/FAO agreement/project which was signed in August 2001. At the beginning of September a contribution of Euro 850,000 (equivalent to \$773 596) was received to bring the account up to \$ 1 million. Part of the funding has been used to cover the costs of duty travel for the EU participants to the RG meeting and the Brno Workshop. With regards to the 6% support costs, FAO had the intention to charge this percentage also to vaccines, however, this was contested by the Secretariat of the Commission and a waiver was granted for the time being.

## **Item 7 - Any other business**

### **Personnel matters**

Dr Yves Cheneau informed the meeting of Ms Egiziana Fragiotta's appointment, which was announced officially only a few days prior to the meeting, as the Administrative Clerk to the Commission.

*Her appointment was endorsed by the meeting.*

He announced that Dr Yves Leforban would be leaving his position as Secretary of the EUFMD in 2002 and then explained how the selection process will take place to appoint his successor. This will have to follow the usual procedures for recruitment implemented by FAO, which, he stressed, have been adopted by the member countries. The English version of the Vacancy Announcement for the position of Secretary to the EUFMD, has been prepared and it is presently being translated into French and Spanish. All members were provided with a copy of an advance version.

*The Committee endorsed the draft Vacancy Announcement.*

According to the Constitution of the EUFMD, the Secretary is appointed by the Director-General of FAO. However, the Executive Committee, in particular the Chairman and the two Vice-Chairmen, will be fully involved in the selection process. The whole procedure may not be completed before Yves Leforban vacates the position. However, continuity of the activities of the Commission will be assured, and a consultant will be recruited if considered necessary.

Professor Zwingmann requested that the Executive Committee members be kept informed of the progress being made, possibly at the Executive Committee meeting, tentatively scheduled to be held in Budapest in April 2002. Dr Cheneau assured the meeting of providing all pertinent details when necessary. He encouraged all present to assist with the dissemination of the Vacancy Announcement upon its issuance.

Dr Yves Leforban took the floor to confirm his departure. He reiterated that he is leaving for personal reasons. He stressed that he has enjoyed working with the Commission and will continue to fulfill his duties until the end of his term with FAO. He intends to return to the Ministry in France, his actual departure date has not yet been fixed. He also indicated that he will do his best to ensure harmonious transition with the new Secretary. He particularly appreciated the cooperation with OIE and EC and his feeling is that the Commission should continue to work closely with them.

Professor Zwingmann, in his capacity as Chairman, congratulated Dr Leforban on the excellent work he has carried out as Secretary of the Commission.

Dr Leforban then commended Dr John Ryan, who left his post as Associate Professional Officer (APO) at FAO on 3 October 2001, for his contribution to the Commission, especially in regards to information technology, his input in the risk analysis workshop and the TCP Iran/Turkey project. He was very active during his 3 years with FAO and the meeting wished him a successful future.

Whilst on the subject of APOs, Dr Leforban informed the meeting that Spain has offered to provide an APO to the Commission by the end of the current year. The selection by Spain is in progress at present. The CVO of Ireland has also informed the Secretariat that they are interested to replace Dr Ryan, which means that the Commission may have two APOs. If this is the case, it was suggested that one of the APOs could concentrate on the general activities of the Commission, whilst the other will work at a more global level and on information technology. The idea is to build up and expand the database on FMD, which has already been started by John Ryan in conjunction with AGAH/FAO FMD programme. The addition of two APOs to the Secretariat of the Commission would be an asset.

### **Follow-up of the proposals from the 34th Session**

The Secretary informed the Committee on the progress made in the implementation of the recommendations from the 34<sup>th</sup> Session:

- The modification of the OIE/FMD chapter is in progress by the OIE/FMD and other Epizootics Commission to include the term “FMD infection” instead of simply “FMD”. The guideline for surveillance is also under preparation by OIE. The Secretary has been closely involved in the discussion on the subject within the OIE/FMD and other Epizootics Commission.
- Support to Thrace for FMD vaccination and for serosurveillance using 3ABC ELISA has been provided.
- The questionnaires on the destruction of carcasses and on contingency planning received by the Secretariat at the time of the 34<sup>th</sup> Session are still to be analyzed. The guidelines for emergency vaccination as requested by the Committee are also to be prepared.

### **Report on the Simulation Exercise held in Brno, 5-7 June 2001**

Dr John Ryan made a presentation prepared by Dr Leos Celeda, who was unable to attend, on the Simulation Exercise held in Brno, Czech Republic (Appendix 11). This workshop involved 15 countries of central Europe and the Baltic countries. European experts from five EU countries contributed to the Workshop which was very successful.

The Committee congratulated Dr Celeda and the Czech Government and the European experts who agreed to participate, for having organized and taken part in this workshop which proved to be very successful and useful for the EUFMD member countries of Eastern Europe.

### **67<sup>th</sup> Session of the Executive Committee of the Commission**

Dr Tibor Soós stated that the Hungarian Government wished to host the 67<sup>th</sup> session of the Executive Committee in Hungary. The venue is still to be decided, however, he suggested that it be held in Budapest to facilitate transport to and from the airport. He asked the Committee members to provide him with any alternatives if they so wish. The suggested dates are 25 and 26 April 2002.

### **Item 8 - Adoption of the draft report**

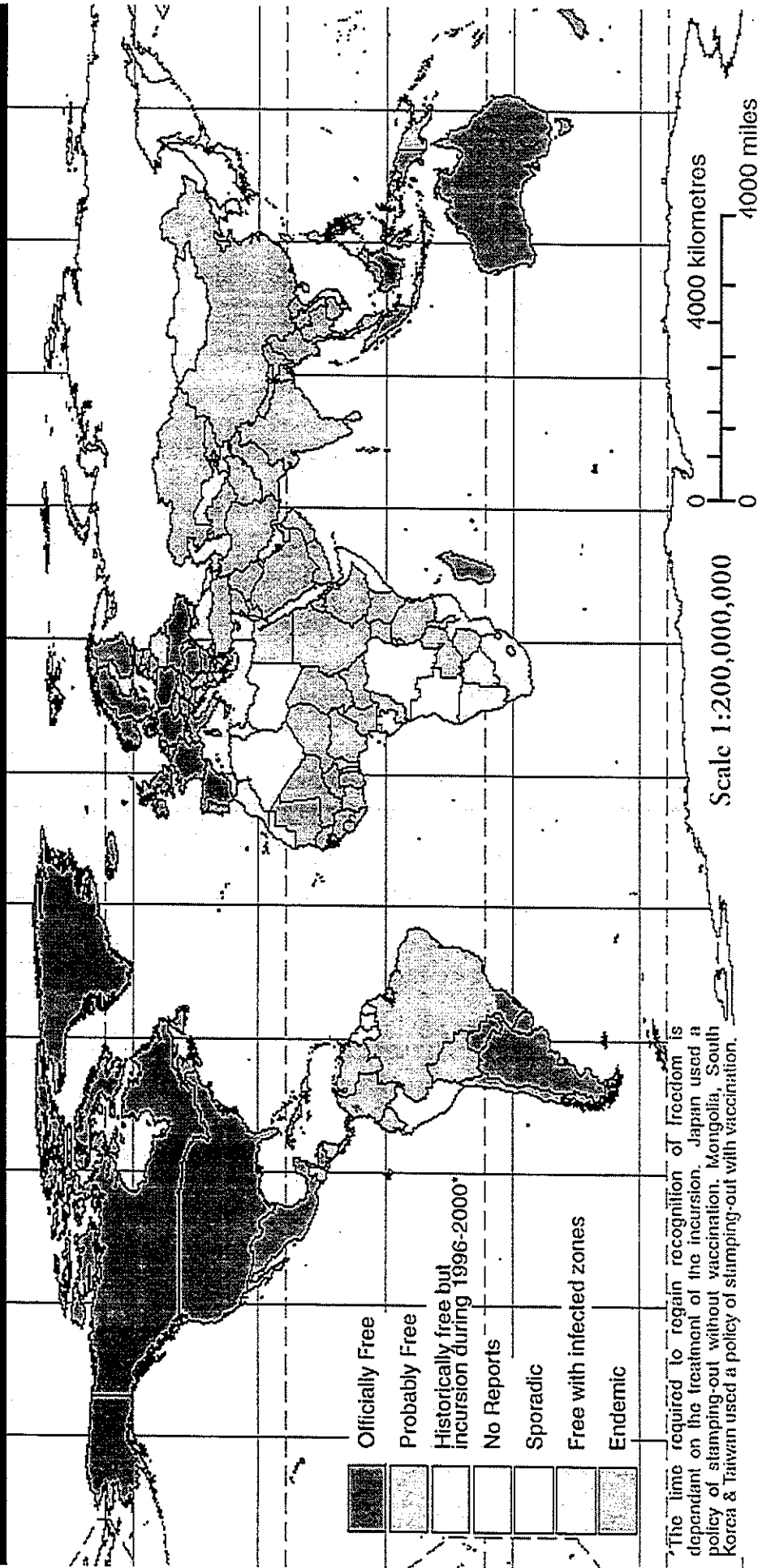
The draft report was adopted, subject to the agreed modifications by the meeting.

### **Closing remarks**

Professor Zwingmann thanked everybody for their contributions and for having worked so hard throughout the meeting.

# FMD situation 2000-2001

*Foot & Mouth Disease - Status based on recorded outbreaks 1996-2000 & current OIE classification*

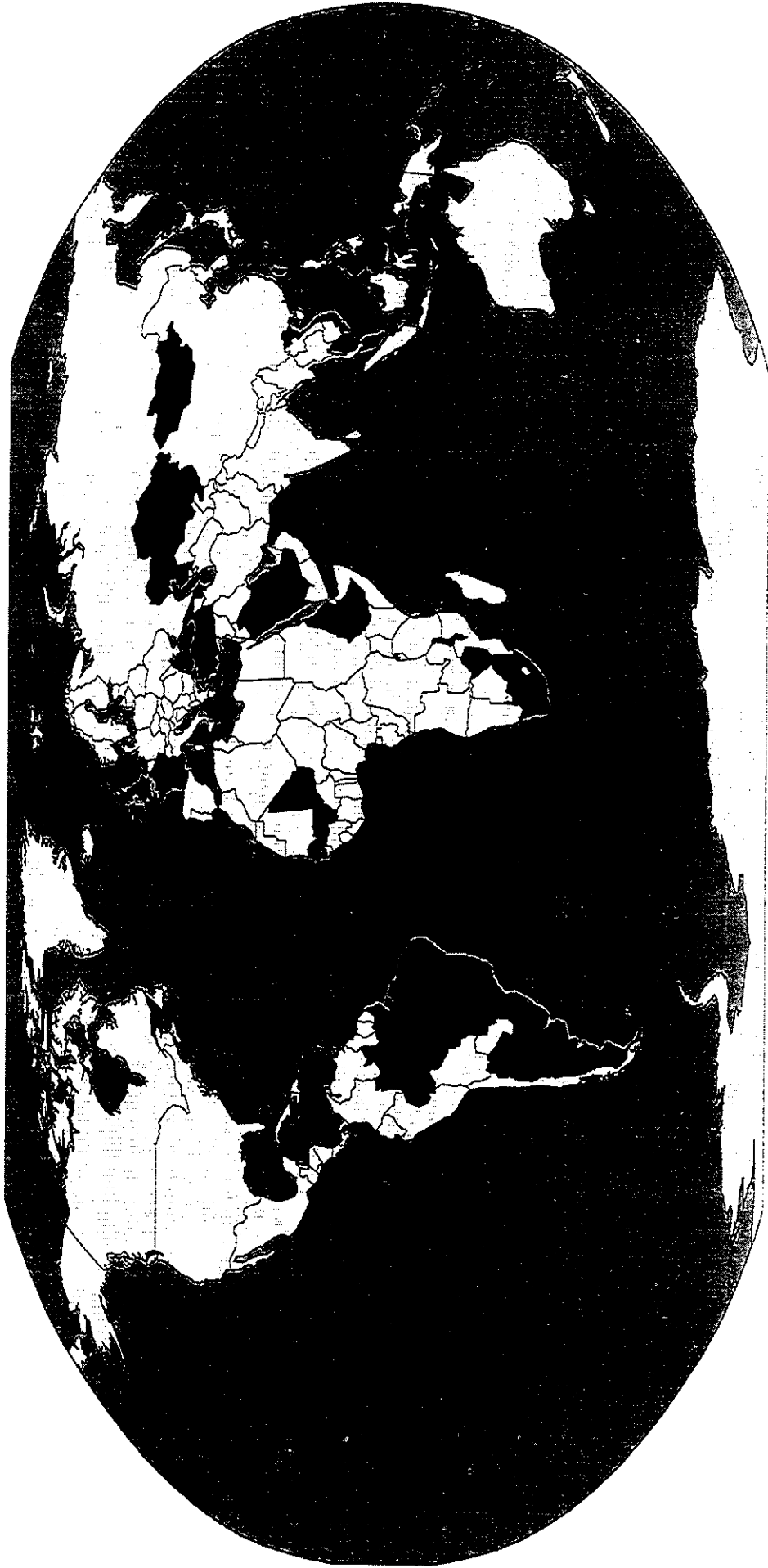


- Officially Free
- Probably Free
- Historically free but incursion during 1996-2000\*
- No Reports
- Sporadic
- Free with infected zones
- Endemic

\*The time required to regain recognition of freedom is dependant on the treatment of the incursion. Japan used a policy of stamping-out without vaccination. Mongolia, South Korea & Taiwan used a policy of stamping-out with vaccination.

Spatial Information Research Centre, University of Otago 2000

# **FMD outbreaks 2001**



**All serotypes as officially reported to OIE, WRL, FAO**

# **FMD Type O outbreaks 2001**



**FMD Type O as officially reported to OIE, WRL, FAO**

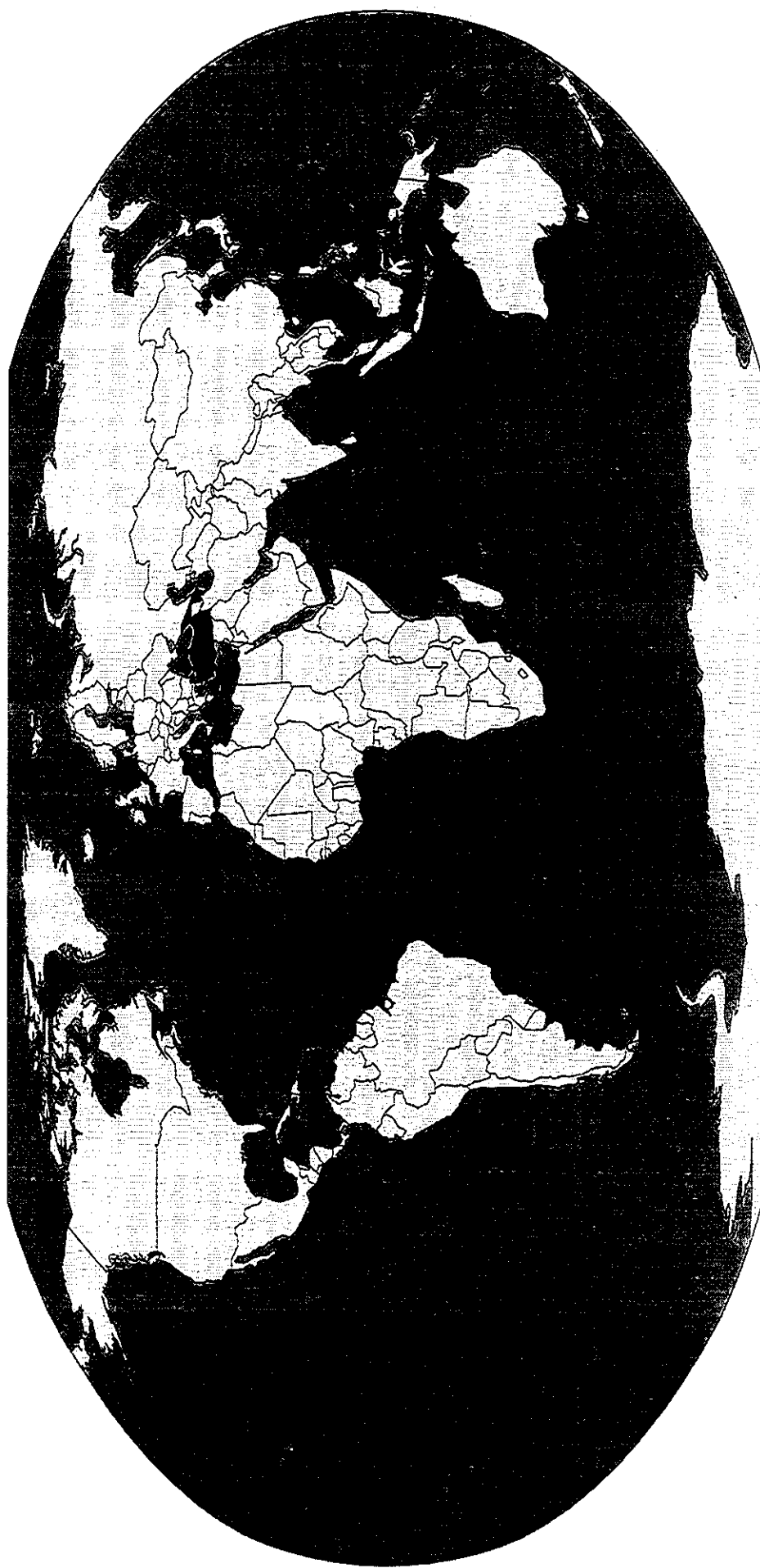


# **FMD Type A outbreaks 2001**



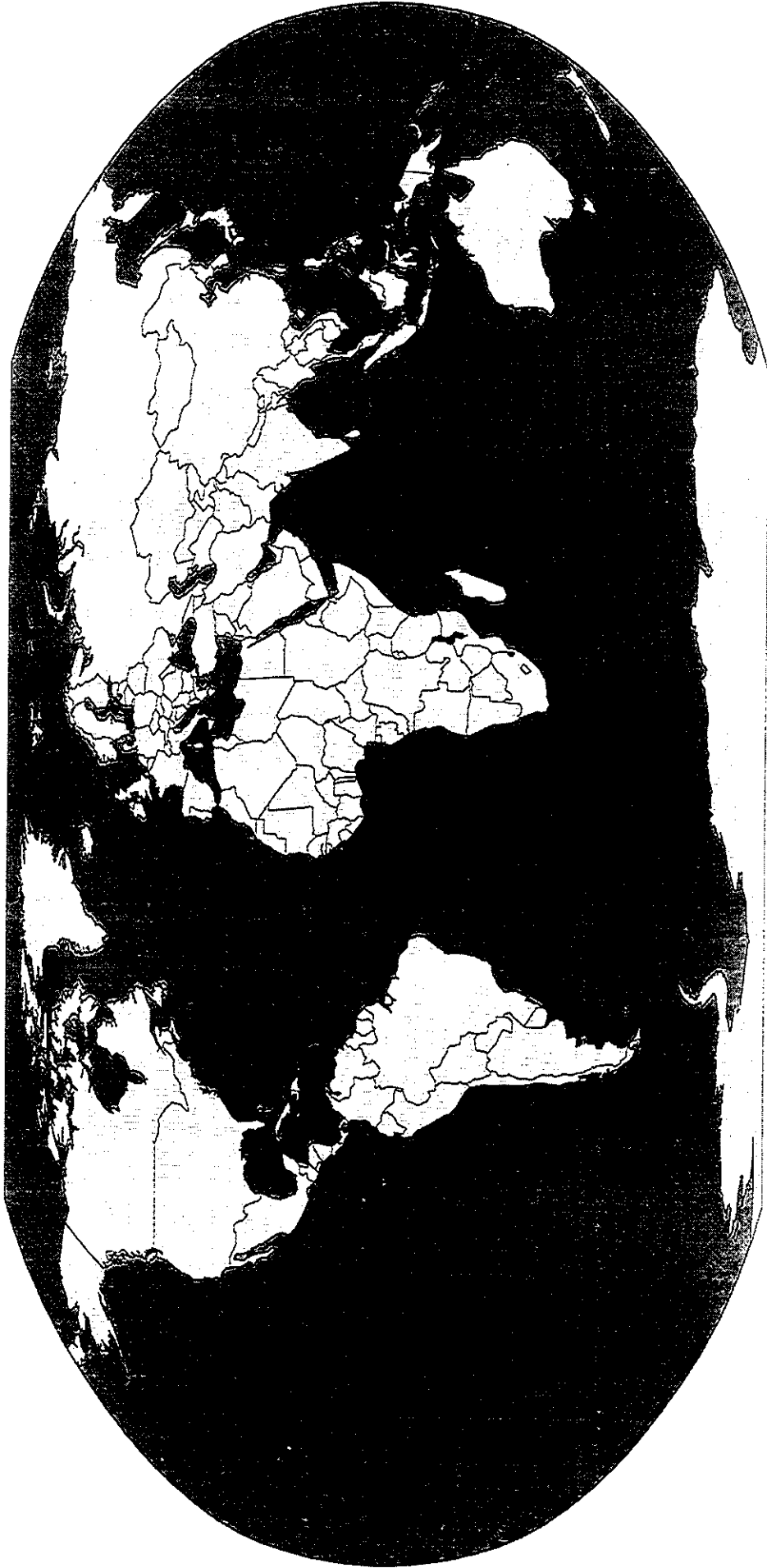
**FMD Type A as officially reported to OIE, WRL, FAO**

# **FMD Type Asia 1 outbreaks 2001**



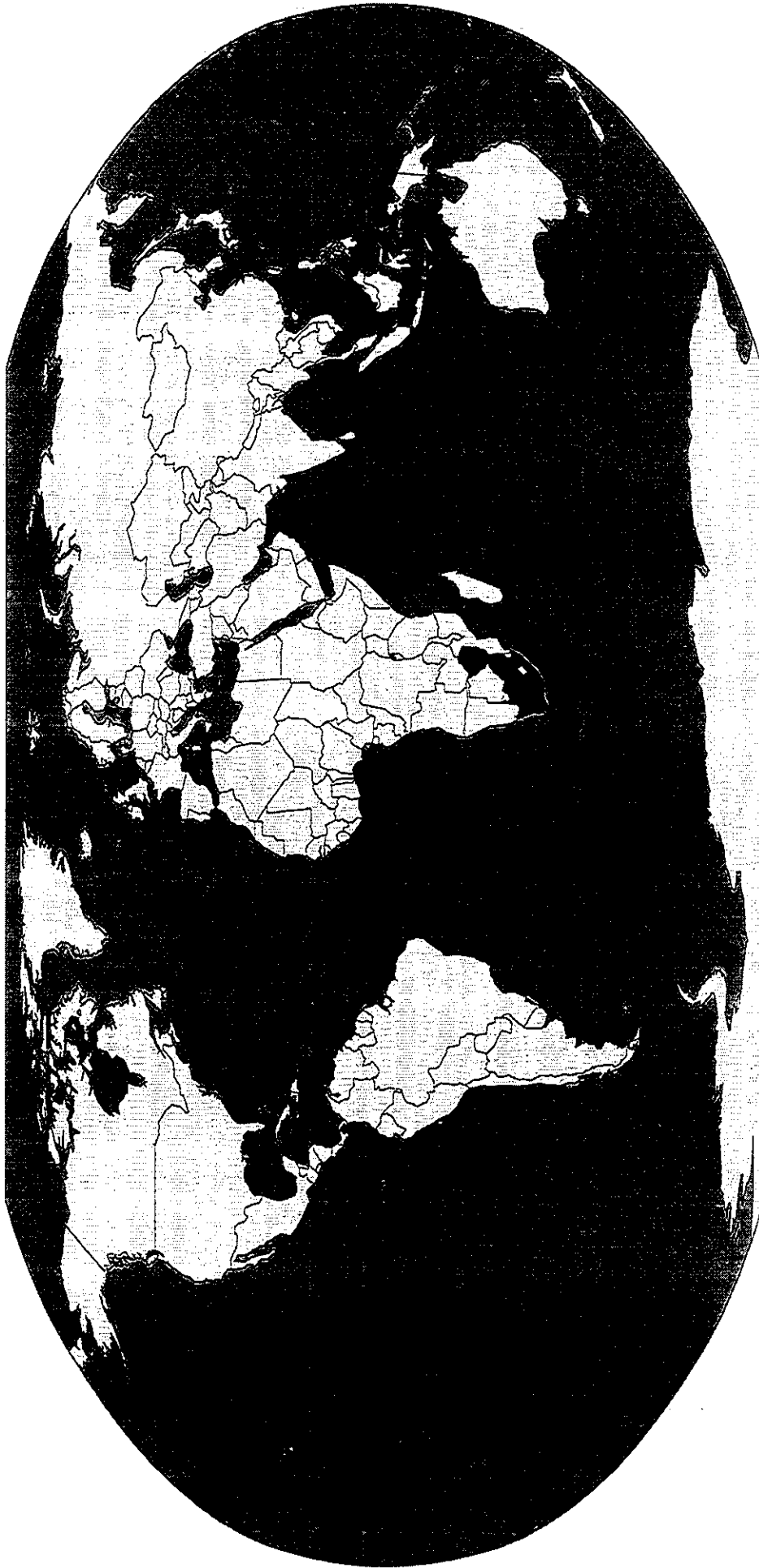
**FMD Type Asia 1 as officially reported to OIE, WRL, FAO**

# **FMD Type SAT1 outbreaks 2001**



**FMD Type SAT 1 as officially reported to OIE, WRL, FAO**

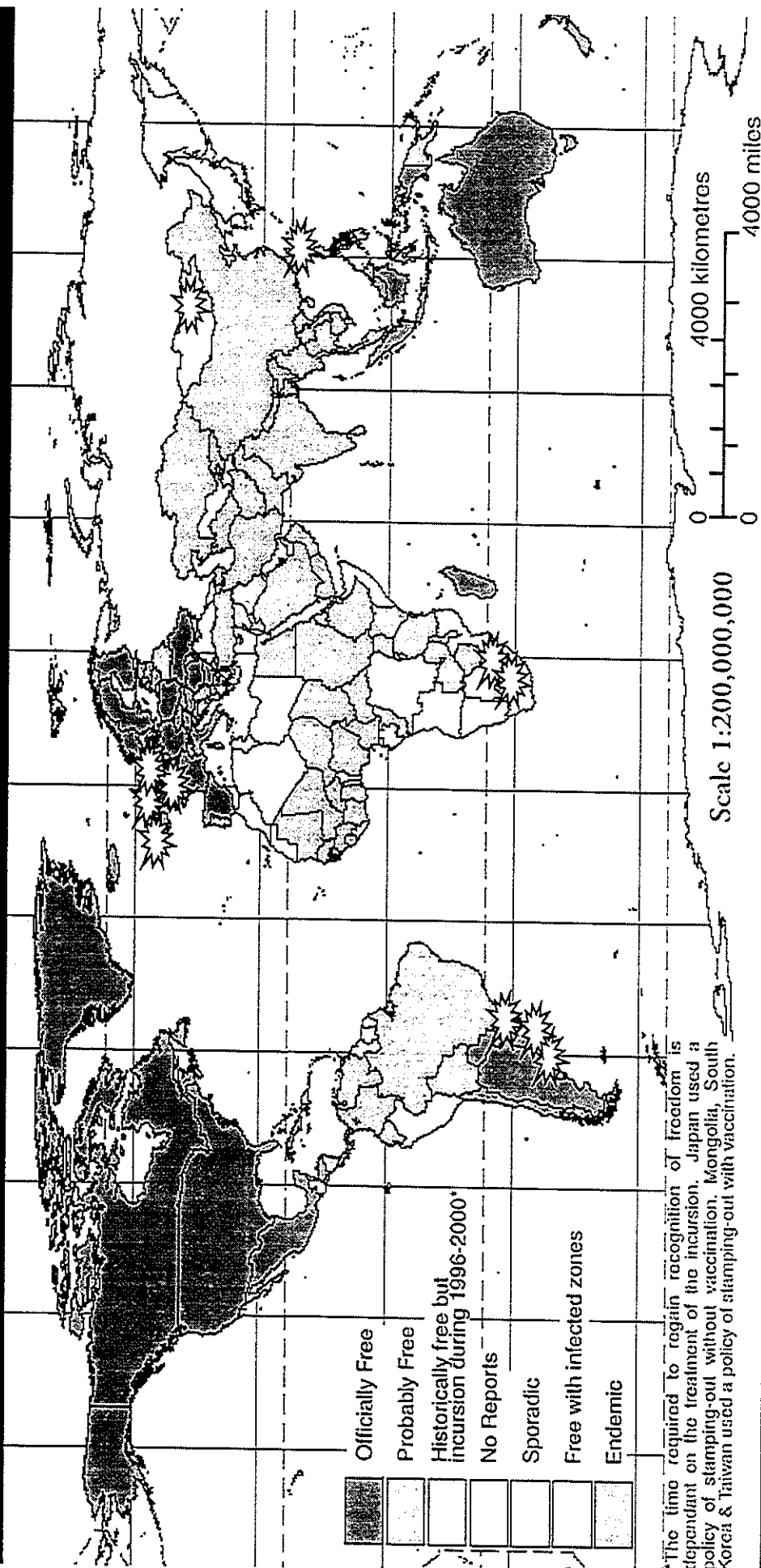
# **FMD Type SAT2 outbreaks 2001**



**FMD Type SAT 2 as officially reported to OIE, WRL, FAO**

# Implications

*Foot & Mouth Disease - Status based on recorded outbreaks 1996-2000 & current OIE classification*



\*The time required to regain recognition of freedom is dependant on the treatment of the incursion. Japan used a policy of stamping-out without vaccination. Mongolia, South Korea & Taiwan used a policy of stamping-out with vaccination.

patial Information Research Centre, University of Otago 2000

### Informal review of world Foot and mouth disease situation

*presented by Dr Donaldson to the OIE Foot-and Mouth Disease and other Epizootic Commission meeting of 24 september 2001*

Dr A. Donaldson (World Reference Laboratory [WRL] for FMD) reviewed the international position with respect to FMD in 2001. Additional information was provided by Drs Y. Leforban (European FMD Commission), M.M. Rweyemamu (FAO) and E. Correa Melo (Pan American FMD Centre).

#### *Europe*

The first outbreak in the United Kingdom (UK) since 1981 was diagnosed on 20 February in pigs at an abattoir near Brentwood, Essex. This outbreak was linked to a swill fed pig premises near Heddon, Northumberland which was probably infected in early February and the source of the epidemic. Airborne virus from there infected a nearby cattle and sheep holding in mid-February i.e. before the first outbreak was confirmed in Essex. The movement of infected sheep from Northumberland through a series of markets resulted in extensive spread in the northwest and southwest of England. Additional movements of sheep resulted in the dissemination of the virus to Scotland, Wales, Northern Ireland, Republic of Ireland and France. Calves that had been in contact with sheep imported into France from the UK spread the virus to The Netherlands. A summary of the episodes in the different countries is provided in Table 1.

**Table 1. Summary of the FMD situation in Europe during 2001**

Country	No. outbreaks	No. animals slaughtered	Vaccination	Pre-emptive culling
Great Britain	1985	3,726,801	No	Yes
Northern Ireland	4	51,199	No	Yes
Rep. of Ireland	1	60,000	No	Yes
France	2	57,968	No	Yes
The Netherlands	26	250,000	Yes	Yes

Characterisation of a series of isolates of the virus from England and neighbouring countries showed that they all belonged to the type O PanAsia toptotype. Strains in this toptotype have spread extensively around the world during the last ten years. So far it has not been possible to identify the source of the virus which caused the epidemic in England.

The other region in Europe affected during 2001 was Turkish Thrace where in June type O virus was confirmed in a flock of goats in Malkara district, Tekirdag province. Infected animals brought in from Asiatic Turkey by dealers were suspected to have caused the outbreak. The outbreak was controlled by ring vaccination.

#### *South America*

Dr A. Donaldson reported that type A outbreaks continued to spread in Argentina during 2001. These were the first outbreaks in Argentina for nearly 7 years and came less than one year after the declaration of freedom without vaccination. The sequencing of virus isolates from different parts of Argentina in 2001 showed that they were related but antigenically and genomically different from isolates of type A in Argentina in 2000. The origins of the two type A strains have not been identified, although a neighbouring country has been implicated. In April the type A epidemic extended into

Uruguay and spread rapidly resulting in more than 80 outbreaks by the end of that month. Apart from an outbreak of type O in October 2000, which was quickly controlled by stamping out, Uruguay had been free for over 10 years. The type A epidemic also involved Rio Grande do Sul, Brazil where 11 outbreaks were reported up to May. Argentina reported 1,429 outbreaks up to 23 June and Uruguay 1,737 outbreaks up to 12 July. Mass vaccination has been reinstated by Argentina, Uruguay and southern Brazil.

A type O outbreak was reported in February by Colombia. The following countries maintained their FMD free, non-vaccinating status; Chile (since 1981), Guyana (since 1978), French Guyana (since 1953) and Surinam (never affected).

Dr Correa reported that the south of the continent is experiencing an epidemic that started in late February with two establishments affected by the disease in the administrative areas of San Andres de Giles and Mercedes in the Buenos Aires province of Argentina.

In one month the epidemic spread through the provinces of Buenos Aires, La Pampa, San Luis, Cordoba, Santiago del Estero, Santa Fe, Entre Rios and Corrientes, before gradually creeping into the provinces of El Chaco, Mendoza, Rio Negro, San Luis and Tucuman. There were a total of 2,108 outbreaks in Argentina up to September. Even though the occurrence of new outbreaks has slowed down considerably, the disease continues to be active.

In April the disease spread to Uruguay where, at first, stamping out was applied to prevent the disease from spreading. Between 23 and 29 April, 4,593 cattle, 1,481 sheep and 332 pigs were destroyed, but on 29 April the stamping out policy was discontinued due to evidence that the disease had already spread to the rest of the country. There were a total of 2,056 outbreaks in Uruguay, involving 76,856 sick cattle, plus 228 sheep and 112 pigs. Uruguay's last outbreak was reported on 21 August.

In early May, foot and mouth disease spread to the Brazilian state of Rio Grande do Sul, affecting the municipalities of Santana do Livramento and Alegrete. By the end of May it had spread to a further six municipalities, totalling 30 outbreaks of foot and mouth disease, involving 11,863 exposed animals and 330 sick animals (attack rate = 3%). No new cases have been reported since 18 July. Brazil has reported a further eight foot and mouth disease outbreaks in other regions of the country.

The active virus, identified by PANAFTOSA, displays many similarities to group A24 sera and to a lesser extent to groups A79 and A81 sera. Studies by PANAFTOSA to expose the field strain to a bank of bovine sera that had been vaccinated and revaccinated with trivalent oil-based vaccine (O<sub>1</sub> Campos; A<sub>24</sub> Cruzeiro and C<sub>3</sub> Indaial), indicate a 72.5% expected protection rate after primary vaccination and 99.8% after revaccination, suggesting that the use of vaccines containing the A<sub>24</sub> Cruzeiro virus is effective.

Elsewhere in South America, Bolivia has also had a number of outbreaks and the disease has spread further than in previous years, with 114 outbreaks of foot and mouth disease caused by type O as well as type A viruses. Ecuador has only two confirmed cases, Colombia has seven and Venezuela two.

### *Asia*

The PanAsia type O strain, so-called because of its extensive geographical distribution, has continued to spread both in Asia and other parts of the world (see Europe). It has been isolated from a wide range of species, including cattle, pigs, sheep, goats, water buffalo and camels.

Type O predominates in southeast Asia and has been reported by Hong Kong, Malaysia, Myanmar, Philippines and Thailand. Taiwan Province of China reported an outbreak of type O in pigs at an abattoir in Taipei Prefecture. Nucleotide sequencing showed that the isolate was genetically very similar to the O Tawian 97 strain, suggesting that the island remains endemically infected. The outbreaks of type O in the Philippines were restricted to Luzon.

Turkey reported outbreaks due to serotypes O, A and Asia 1. Outbreaks of Asia 1 were also reported by Iran, Afghanistan, Georgia and Azerbaijan. Type O outbreaks were reported by a series of countries including Mongolia, Kuwait, Bahrain, Yemen, Saudi Arabia, Qatar, United Arab Emirates, Oman, Kazakhstan, Kyrgyzstan, Abkhazia, Iraq, Bhutan and Nepal.

## Africa

The FMD situation in many countries in Africa is unclear as surveillance is either patchy or non-existent. Most of the countries in west, central and east Africa are probably endemically infected. In 2001 type O was reported by Kenya, Uganda, Mauritania and Senegal.

Malawi reported an outbreak of type SAT 1 in the same area where outbreaks had occurred in April/May 2000. In January, Swaziland reported an outbreak of SAT 1 in cattle in the northern Hhohho region along the border with South Africa in the traditionally FMD free area of Swaziland. The outbreak was controlled by stamping out and ring vaccination. In February an outbreak of SAT 2 was reported by South Africa in cattle in the district of Mhala, northern Province. Virus sequencing indicated a relationship with similar SAT 2 viruses found in African buffalo. The origin was suspected to be carrier buffalo which had escaped from the Sabie Sands Nature Reserve. In August, Zimbabwe reported that SAT 2 been detected in animals slaughtered at the Bulawayo abattoir and traced back to a feedlot. It is suspected that the feedlot may have received illegal cattle originating from the FMD control zones. Botswana has maintained its FMD free status.

Table 2 shows the results of tests on samples submitted to the OIE/FAO World Reference Laboratory for FMD at Pirbright during the period 1 January to 31 August 2001.

### OIE/FAO World Reference Laboratory for Foot and Mouth Disease\* CUMULATIVE REPORT FOR JANUARY - AUGUST 2001

COUNTRY	No. of samples	FMD virus serotypes							SVDV (a)	NVD (b)
		O	A	C	SAT 1	SAT 2	SAT 3	Asia 1		
ABKHAZIA	1	1	-	-	-	-	-	-	-	1
AFGHANISTAN	4	-	-	-	-	-	-	4	-	-
ARGENTINA	7	-	7	-	-	-	-	-	-	-
ARMENIA	1	-	1	-	-	-	-	-	-	-
BAHRAIN	8	7	-	-	-	-	-	-	-	1
BHUTAN	5	1	-	-	-	-	-	-	-	4
FRANCE	1	1	-	-	-	-	-	-	-	-
GEORGIA	2	-	-	-	-	-	-	2	-	-
HONG KONG (PRC)	17	12	-	-	-	-	-	-	-	5
IRAN	18	6	-	-	-	-	-	9	-	3
IRAQ	5	4	-	-	-	-	-	-	-	1
IRELAND	297	6	-	-	-	-	-	-	-	291
KYRGYZTAN	1	-	1	-	-	-	-	-	-	-
MALAYSIA	6	6	-	-	-	-	-	-	-	-
MAURITANIA	17	1	-	-	-	-	-	-	-	16
MONGOLIA	1	1	-	-	-	-	-	-	-	-
NETHERLANDS	4	4	-	-	-	-	-	-	-	-
OMAN	7	7	-	-	-	-	-	-	-	-
PORTUGAL	5	-	-	-	-	-	-	-	-	5
RUSSIA	2	2	-	-	-	-	-	-	-	-
QATAR	6	6	-	-	-	-	-	-	-	-
SAUDI ARABIA	12	10	-	-	-	-	-	-	-	2
SENEGAL	4	1	-	-	-	-	-	-	-	3
TURKEY	18	10	4	-	-	-	-	1	-	3
UGANDA	6	2	-	-	-	-	-	-	-	4
UNITED ARAB EMIRATES	9	4	-	-	-	-	-	-	-	5
UNITED KINGDOM	14,549 <sup>H</sup>	1,789	-	-	-	-	-	-	-	11,380
URUGUAY	2	1	1	-	-	-	-	-	-	-
YEMEN	1	1	-	-	-	-	-	-	-	-
<b>TOTAL</b>	<b>15,016</b>	<b>1,883</b>	<b>14</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>16</b>	<b>-</b>	<b>11,723</b>

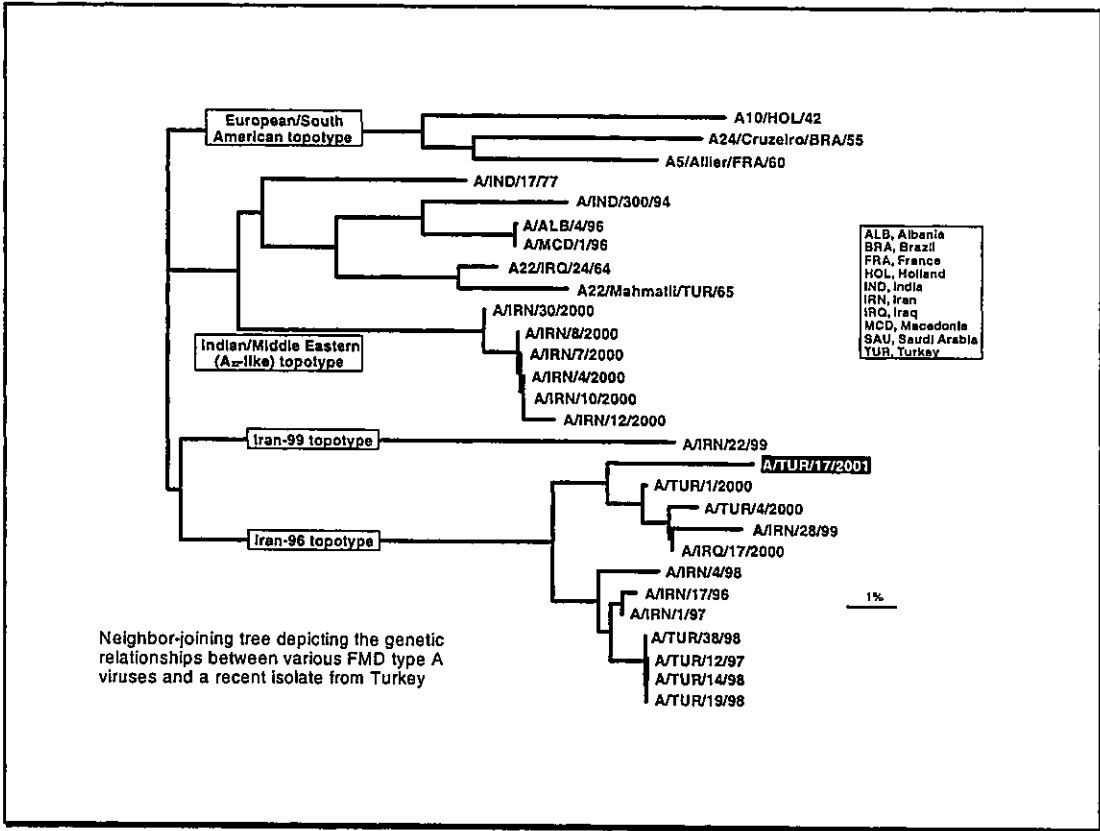
\* Institute for Animal Health, Pirbright Laboratory, Woking, Surrey GU24 0NF, U.K.

(a) swine vesicular disease virus

(b) no foot-and-mouth disease, swine vesicular disease or vesicular stomatitis virus detected

<sup>H</sup> 1,380 samples were not processed





**OIE/FAO World Reference Laboratory for Foot-and-Mouth Disease (a).****Supplementary, cumulative report for the period 1<sup>st</sup> September-14<sup>th</sup> November 2001**

COUNTRY	No. SAMPLES	O	A	C	SAT1	SAT2	SAT3	ASIA1	SVDV (b)	NVD (c)
GUINEA BISSAU	2	-	-	-	-	-	-	-	-	2
HONG KONG	6	4	-	-	-	-	-	-	-	2
IRAN	20	10	4	-	-	-	-	3	-	3
MAURITANIA	33	5	-	-	-	-	-	-	-	28
NIGER	30	9	-	-	-	-	-	-	-	21
PHILIPPINES	10	8	-	-	-	-	-	-	-	2
SAUDI ARABIA	2	2	-	-	-	-	-	-	-	-
SENEGAL	7	-	-	-	-	-	-	-	-	7
<b>TOTAL</b>	<b>110</b>	<b>38</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>65</b>

(a) Institute for Animal Health, Pirbright Laboratory, Woking, Surrey. GU24 0NF. UK.

(b) Swine Vesicular Disease Virus.

(c) No foot-and-mouth disease virus, swine vesicular disease virus or vesicular stomatitis virus detected.

**THE EPIDEMIC OF FOOT-AND-MOUTH DISEASE IN THE UNITED KINGDOM  
STATUS REPORT - 11 NOVEMBER 2001**

*Dr AJM Garland (on behalf of the WRL and DEFRA)*

**BACKGROUND**

- The last outbreak of FMD on the British mainland was in 1967/68. The source was attributed to the import of infected sheep meat from Argentina.
- The outbreak was controlled by Stamping-Out. Control of the outbreak involved the slaughter of some 400,000 animals at a cost, in today's terms, of around 1.75 billion pounds sterling.
- The disease and the virus were eradicated within six months.
- The last outbreak of FMD anywhere in Britain was on the offshore Isle of Wight in 1981. The infection was airborne from France. It was rapidly stamped out.
- In recent years the main threat of the introduction of FMD into the United Kingdom has been perceived to be from incursions overland from the periphery of Western Europe.
- The virus involved is the Serotype O, PanAsian Strain of foot-and-mouth disease.
- This strain emerged in the Indian sub continent in the early 1990s and has since spread to cause widespread disease, including outbreaks in countries free of FMD, or of this subtype, for long periods of time. Examples include spread north to Pakistan, Mongolia and Russia; east to Malaysia, Korea, Vietnam and Japan; west to Iran and Turkey, and south to South Africa.
- In February 2001 the strain spread to the United Kingdom and thence - through animal movement - to Northern Ireland (4 foci), the Republic of Ireland (2 foci), France (2 foci) and the Netherlands (26 foci).
- Early warning and prompt action, including stamping out and (in the Netherlands) emergency vaccination, controlled the disease in all the countries infected via the UK. These countries have since reclaimed the status of "FMD free without vaccination".

**THE ORIGIN OF THE OUTBREAK**

- All investigations indicate that the index case was in swill fed pigs in the north-east of England.
- There was local spread to livestock, including cattle and, principally, sheep.

- The earliest cases were undetected.
- Infected sheep were widely distributed throughout much of the United Kingdom, often via livestock markets, seeding other foci.
- The clinical signs are extremely mild in the vast majority of outbreaks involving sheep. The average number of sheep displaying lesions within a single flock has been less than 5%.
- The lesions have been found mainly in the mouth of sheep. A small minority of sheep have exhibited foot lesions or lameness.
- The virus causes severe clinical disease in cattle and pigs.

### **SAMPLE PROCESSING TIMES AT PIRBRIGHT**

- Total samples received for diagnosis : 15,396
- Total samples giving a positive diagnosis : 1,816
  - Average turnaround time for a result to an individual premises 4.1 days
  - Average turnaround time for a positive result to an individual premises = < 1.0 day
  - Average turnaround time for a negative result to an individual premises 7.0 days
- Approximately 90% of samples were typed on original lesion material by direct antigen ELISA. The remaining 10% were typed after one or two serial passages in tissue culture.
- **Number of ELISA tests carried out : 2,280,243**
- **Number of sheep and goat sera sampled:**
  - 1,777,066 animals on 9,968 farms within the 3-km Protection Zones around FMD outbreaks.
  - 1,932,382 animals on 9,233 farms in the 3 to 10 –km Surveillance Zone around FMD outbreaks.
- Five laboratories are now testing sera, with a total combined capacity in the order of 200,000 sera per week.
- **Objectives of the serosurvey**
  - To trace the extent of subclinical infection, principally in sheep.
  - Epidemiological investigations.
  - To allow the lifting of disease restrictions.

### **UK EPIDEMIC (20 February to 5 November 2001)**

- **2,030 Infected premises confirmed.**  
(2,026 in Great Britain and 4 in Northern Ireland).

- last confirmed outbreak : 30 September.
- 9,575 Premises slaughtered out comprising:-
  - 2,026 Infected premises and
  - 7,294 Contiguous premises or dangerous contacts and
  - 255 Slaughtered on suspicion
- 3,940,000 animals slaughtered and disposed of comprising:-
  - 601,678 cattle
  - 3,176,315 sheep
  - 138,733 pigs
  - 2,597 goats
  - 1,000 deer
  - 200 others

### **Solid Phase Competitive ELISA**

#### **VALIDATION**

##### **Specificity :**

100% at 50% and 60% inhibition.

##### **Sensitivity :**

97.5 % at 50% and 99.8% at 60% inhibition.

##### **Serological Sampling:**

Protocol designed to give 95% statistical confidence of detecting disease prevalence at 5 % (95/5).

Table 1

**Serological surveillance for FMD in the United Kingdom**  
**Interim Results to 5 November 2001**

<b>PURPOSE OF SAMPLING</b>	<b>No. Serum Samples</b>	<b>No. Sera +ve. (%)</b>	<b>No. Farms Sampled</b>	<b>No. Farms +ve. (%)</b>
<b>Sera from 3-km Protection Zone</b>	<b>736,598</b>	<b>402 (0.05)</b>	<b>9,968</b>	<b>29 (0.29)</b>
<b>Sera from 3-10-km Surveillance Zone</b>	<b>795,803</b>	<b>150 (0.02)</b>	<b>9,233</b>	<b>6 (0.6)</b>
<b>Sera to permit movement of animals</b>	<b>625,107</b>	<b>61 (0.03)</b>	<b>1,814</b>	<b>1 (0.05)</b>
<b>TOTAL</b>	<b>2,157,508</b>	<b>613</b>	<b>21,015</b>	<b>36</b>

Sera tested by means of Solid Phase Competitive ELISA method.

Table 2

**UK FMD-SUSCEPTIBLE LIVESTOCK POPULATION AND  
NUMBERS CULLED**

	<b>CATTLE</b>	<b>SHEEP AND GOATS</b>	<b>PIGS</b>
TOTAL EXTANT (December 2000)	<b>10,878,000</b>	<b>27,591,000</b>	<b>5,948,000</b>
SLAUGHTER On Ips	<b>313,742</b>	<b>922,858</b>	<b>26,033</b>
SLAUGHTER on DCs	<b>273,846</b>	<b>2,145,492</b>	<b>110,322</b>
SLAUGHTER On clinical suspicion	<b>14,090</b>	<b>107,965</b>	<b>2,378</b>
<b>TOTAL SLAUGHTERED</b>	<b>601,678 (5.53%)</b>	<b>3,176,315 (11.5%)</b>	<b>138,733 (2.3%)</b>

IP : Infected premises.

DC: Dangerous contact or contiguous premises

Figure 1

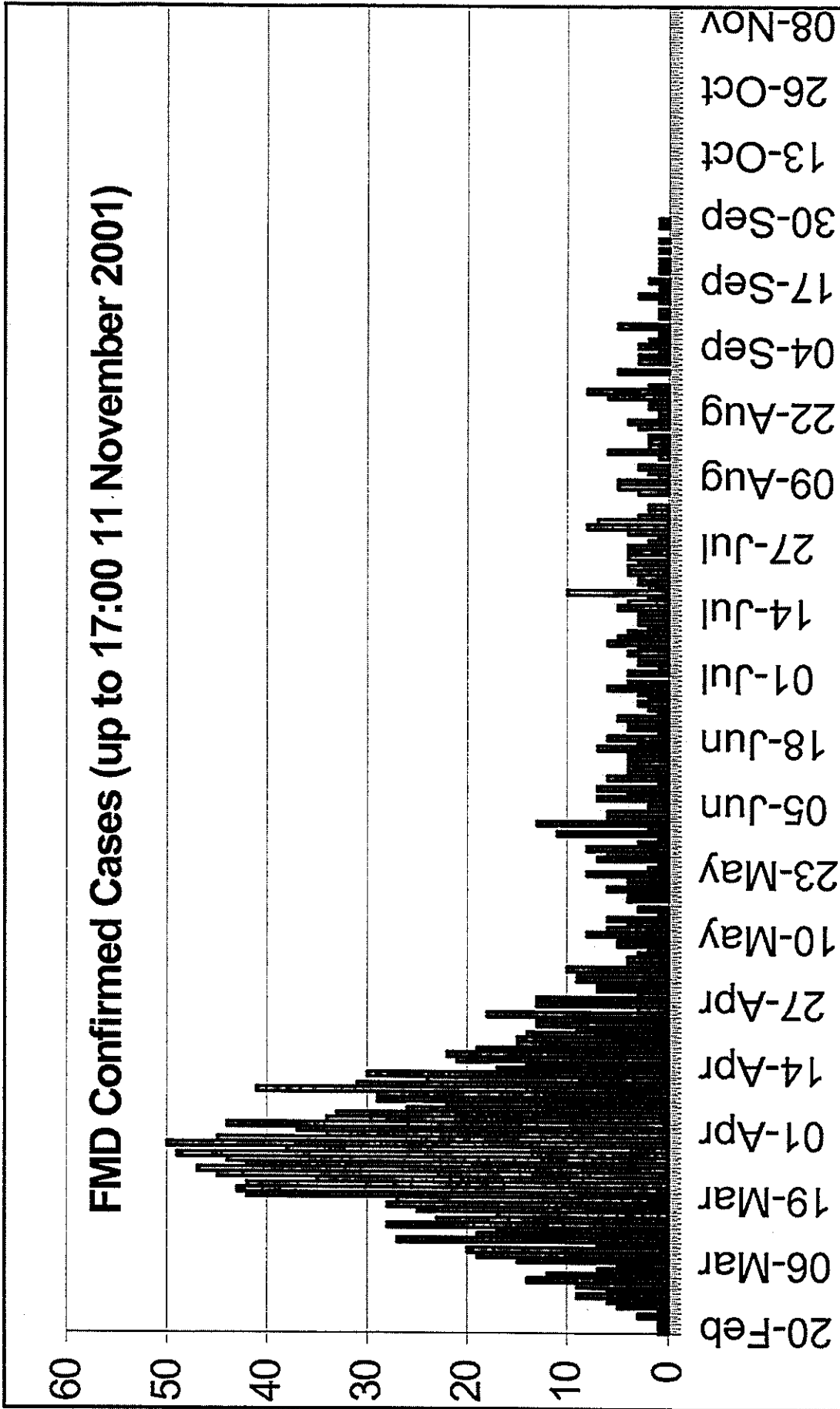
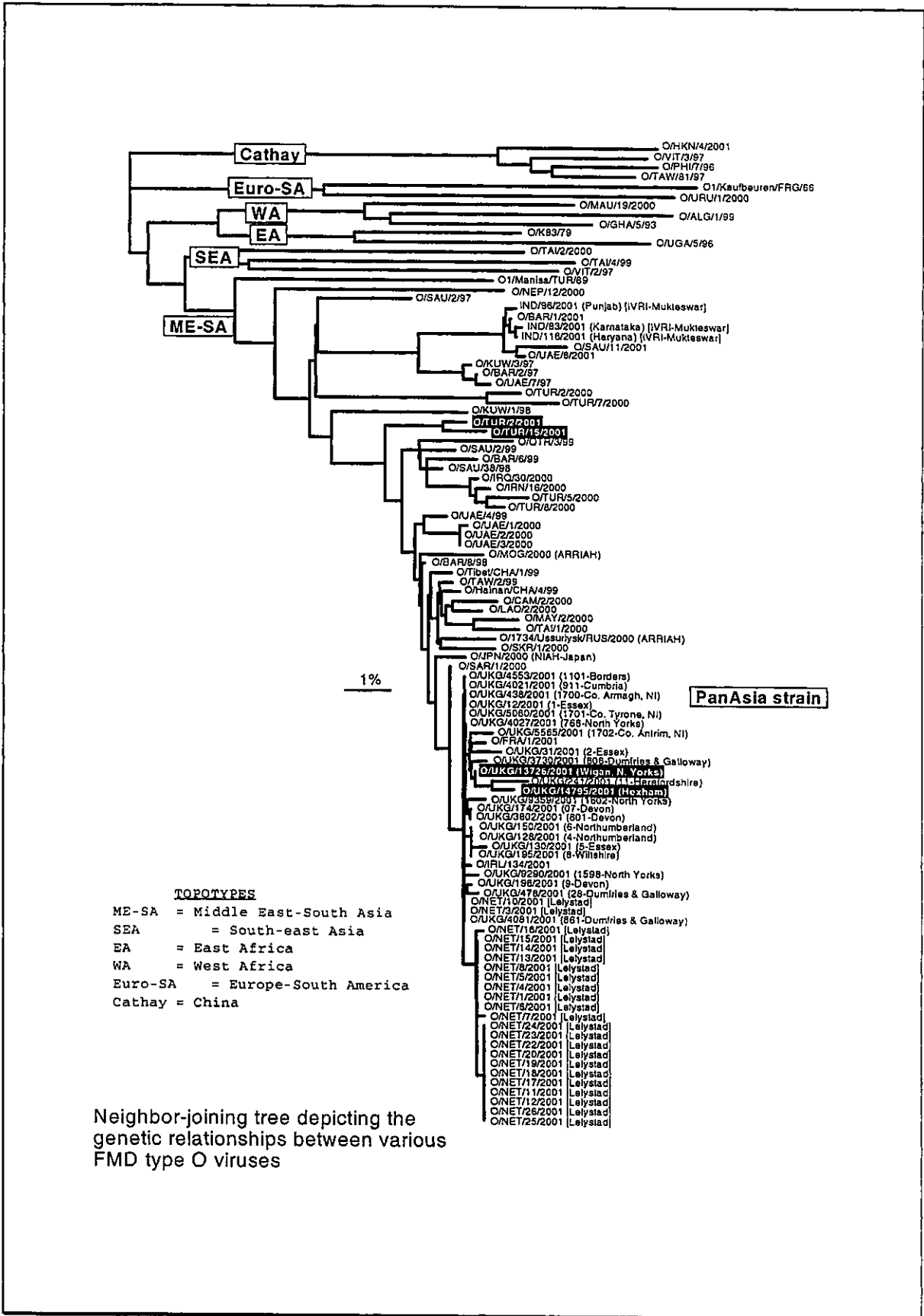




Figure 2



Neighbor-joining tree depicting the genetic relationships between various FMD type O viruses

## **Controlling Foot-and-Mouth Disease in the Netherlands (21 March to 22 April 2001)**

Dr. Frits H. Plumiers  
Chief Veterinary Officer, Ministry of Agriculture,  
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### **Preface**

Foot-and-mouth disease was identified in the Netherlands on 21 March 2001 and was quickly followed by more cases. Thanks to stringent measures, the disease was quickly contained. The last case was identified on 22 April in an area where the most severe movement restrictions already applied. Although there were only 26 confirmed cases, the damage to the Dutch livestock sector was enormous. To stop the spread of the disease, almost 260,000 animals from more than 2,600 farms in infected areas were slaughtered. The blow to farmers and their families was emotional as much as financial. The recreation sector also suffered considerable loss of income, as nature areas were closed to the public.

Because there had been no new confirmed or suspected cases since 22 April, the European Union decided on 26 June to lift all remaining export restrictions applying to the Netherlands.

### **The outbreak of foot-and-mouth disease in the Netherlands**

On 20 February 2001, the news that foot-and-mouth disease had been found in the United Kingdom sent shock waves throughout the European Union. France was the second country to be struck by the disease. On 13 March it was identified on a dairy farm close to a farm that had imported sheep from the United Kingdom in February. The pathogen responsible was foot-and-mouth virus type 0, the 'pan-Asiatic' strain.

A week later, on 21 March, foot-and-mouth disease was confirmed in the Netherlands. The authorities traced the source of the disease to a consignment of Irish calves imported into the Netherlands on 24 February 2001. These calves had stayed at a staging point in Baroche Gondoin in the French department of Mayenne on the night of February 23-24, together with British sheep which were later found to be positive in a serological test for the foot-and-mouth virus.

The first two cases in the Netherlands occurred on dairy farms in the province of Overijssel. The next 18 cases but one occurred in the province of Gelderland. Infection was ascribed to human contact, shipments of livestock or simply physical proximity to an infected farm. On 11 and 12 April, foot-and-mouth disease was identified quite unexpectedly on two dairy farms in the northern province of Friesland. These cases in Friesland were the only ones to occur outside the initial infected area. After 10 April, only three more cases were identified, on farms in Gelderland and Overijssel. The last case, the 26th, was identified on 22 April in Overijssel. Foot-and-mouth disease did not occur outside the provinces of Friesland, Gelderland and Overijssel.

## **Disease control**

European Directive 85/511/EEC lays down measures that must be taken in the event of an outbreak of foot-and-mouth disease. This directive is incorporated in the national legislation of individual Member States. In the directive, one of the key strategies to control the disease is immediate isolation of the area in which the disease is found.

The measures adopted by the Netherlands to control the disease were much more far-reaching than those laid down by European law. These drastic measures were necessary because of the intensive nature of livestock farming in our country, which is characterised by high density of FMD susceptible animals, a high volume of animal transports and many person-to-person contacts. In addition, large numbers of animals are imported and exported.

The National Inspection Service for Livestock and Meat (RVV) was responsible for the implementation of disease control measures in practice. The organisation went into the highest alarm phase when foot-and-mouth disease was reported in the United Kingdom. There, the virus had had time to spread before it was identified. In view of the frequent movements of livestock between the two countries, there was a real risk that the virus had also been introduced here. It was decided that all susceptible animals introduced into the Netherlands from the United Kingdom during the incubation period of the virus would be slaughtered preventively. However, pigs imported from the United Kingdom were quarantined, inspected and tested but were not slaughtered. Afterwards, it turned out that none of these animals had carried the virus, but the move had been necessary in the Dutch strategy to always stay one step ahead of the disease.

After the first case in the Netherlands, the disease was combated with severe movement restrictions in infected and suspected areas, stamping out and emergency vaccination. The strategy was successful: the disease was under control after only 31 days.

## **Movement restrictions in infected and suspected areas**

When foot-and-mouth disease was identified in the Netherlands, the European Commission passed Decision 2001/223/EC on 21 March 2001 laying down protective measures. In Annexes to this Decision, the Netherlands was divided into infected and suspected areas (Annex I areas) and not suspected areas (Annex II areas).

After the first outbreaks only the provinces Gelderland, Overijssel, Flevoland and Noord-Brabant figured in annex I. Due to a rapid increase in outbreaks, the whole territory of the Netherlands was placed in Annex I on 11 April. However, from 23 April, those parts of the country where no cases or suspect cases were found, were gradually put in Annex II.

In general:

Annex I areas comprised the provinces or parts of provinces where infected farms were found. Movements of live biungulate animals within and from Annex I areas were prohibited, and products of susceptible animals could only leave an Annex I area after having undergone a prescribed treatment.

Annex II areas were all areas not listed under Annex I. Here, too, a movement ban applied to biungulates and the export of products of susceptible animals was subject to strict conditions.

Near the end of the outbreak in the Netherlands, a third geographical category was created for areas where the possibility of foot-and-mouth disease could be ruled out with certainty. Export bans for susceptible animals in this region were gradually relaxed from 10 May onward.

### **Compartments**

The Netherlands was subsequently divided into six compartments, with the aim of containing risk contacts within the compartment. The transport of biungulates and certain animal products such as milk and manure between compartments was strictly prohibited. Within a compartment, movements of animals were allowed only if there were no suspected farms in the compartment. Feed suppliers, milk trucks and so on were only allowed to visit farms within a compartment. Conveyances, i.e. trucks, trailers and containers, used on farm visits in one compartment were not allowed to be used for that purpose in another compartment. Trucks and trailers were registered and labelled with coloured stickers, so that enforcement officers could tell which compartment transporters were bound to.

### **Movement bans**

When foot-and-mouth disease was identified in the United Kingdom, the European Commission banned the export of biungulates and products of these animals from the UK. The Netherlands announced a nation-wide movement ban for sheep and goats. Markets for all livestock - whether biungulate or not and including poultry - were closed and exhibitions and other events where animals are brought together were cancelled. After the outbreak in France, the Netherlands imposed a ban on all movements of biungulates.

When foot-and-mouth disease was confirmed in the Netherlands, a 72-hour general movement ban was laid down in all of the Netherlands for all transports of livestock, poultry and conveyances for transporting these animals. When the source of infection was established on 24 March (Irish calves imported via France), the general standstill order was lifted.

After this, severe restrictions continued to apply in the so-called restricted areas (where cases of the disease were suspected or confirmed). The compartmentalisation scheme remained in force. Within a compartment, strict conditions applied for transports of semen, embryos and ova of biungulate animals. Animal feed could be delivered to farms and milk could be picked up, provided the conveyances used were cleaned and disinfected before leaving the farm. Poultry transports were allowed only in the case of one-day chicks and slaughter animals. Visits to farms with livestock were prohibited, except in urgent cases requiring professional help from a veterinarian or technical expert. These visits were subject to stringent cleaning and disinfection procedures.

### **Stamping-out**

Before the outbreak of foot-and-mouth disease in the Netherlands, the Government had already taken the precautionary measure of slaughtering all susceptible animals on farms where sheep and deer were present which had been imported from the UK. On farms which had imported pigs from the UK, clinical checks had been carried out and blood samples taken for analysis. Farms which had been in contact with these farms were blocked and clinically tested. The same system was applied in the case of biungulates imported from France.

When the first case of the disease was identified in Dutch territory, the Government adopted a strategy of immediate action. As soon as a new case was identified the farm concerned was blocked and all susceptible animals (cattle, sheep, pigs and goats) were slaughtered. Susceptible livestock on contiguous farms in a radius of one to two kilometres from the infected farm and on 'dangerous contact' farms were also preventively slaughtered. In principle, animals from infected farms were slaughtered on the basis of test results for foot-and-mouth disease. If there were strong clinical indications for foot-and-mouth disease, however, livestock was slaughtered without delay on the suspected farm, contiguous farms and dangerous contact farms.

Livestock was slaughtered on the farms themselves. So-called protection zones were imposed in a circle of three kilometres around infected farms. Within these zones, all transports were prohibited and clinical inspections were conducted on all farms with susceptible livestock. Outside the protection zone, a surveillance zone was imposed with a radius of at least ten kilometres around the infected farm. All transports were prohibited in this zone.

### **Emergency vaccination**

The European Union has maintained a policy of non-vaccination since 1 January 1992. In cases of foot-and-mouth outbreaks, however, Member States may, under certain conditions and with explicit permission of the European Commission, carry out emergency vaccination. Emergency vaccination is restricted to susceptible animals earmarked for preventive slaughtering on farms within a certain distance from an infected farm. Emergency vaccination may be adopted when there is insufficient slaughtering or rendering capacity for the number of animals that need to be destroyed.

Emergency vaccination enables the authorities to carry out culling in phases, while preventing the disease from spreading further. One of the conditions of vaccination is that all vaccinated animals are identified by an indelible mark and are killed and destroyed within two months of vaccination.

In order to control the outbreak rapidly and effectively, the European Commission granted the Netherlands permission to carry out emergency vaccination on susceptible livestock in zones of 2 kilometres around an outbreak. However, in the most heavily infected zone at the borders of the provinces of Gelderland and Overijssel, emergency vaccination was allowed in a specifically defined and much bigger (up to 10 kilometres) area. The last vaccinated animals were slaughtered on 25 May 2001.

	<b>Vaccinated and later culled</b>	<b>Total culled</b>
<b>Pigs</b>	85,911	121,437
<b>Cattle</b>	62,495	85,186
<b>Sheep</b>	23,401	32,633
<b>Goats</b>	5,585	8,297
<b>Other Biungulates</b>	85	11,642

## **Outbreaks**

In the period from 21 March to 22 April, 26 cases of foot-and-mouth disease were identified: twenty in the province of Gelderland, four in Overijssel and two in Friesland.

## **Vaccination**

By the end of the foot-and-mouth period, a total of 177,474 animals on 1,931 farms had been vaccinated and later culled: 62,495 cattle, 85,911 pigs, 23,401 sheep, 5,585 goats and 85 other biungulates.

## **Culling**

During the foot-and-mouth disease crisis, livestock on 2,655 farms was culled: 85,186 cattle, 121,437 pigs, 32,633 sheep, 8,297 goats and 11,642 other biungulates.

## **The end of the outbreak**

When no new cases were suspected or confirmed after the case on 22 April, the European Commission decided on 10 May to lift some of the transportation restrictions. On 13 June, export restrictions were lifted in all parts of the Netherlands except the last surveillance zone in Gelderland.

On 25 June 2001, it had been thirty days since the slaughter of the last vaccinated animal on 25 May. There had been no new cases or suspected cases since 22 April. The European Commission therefore declared the Netherlands officially free of foot-and-mouth disease from 26 June. All remaining restrictions for transports of live animals or animal products to other Member States were lifted.

## **Improvements in the future**

The outbreak of foot-and-mouth disease demonstrated the importance of minimising factors which could lead to a new outbreak in the future. Measures are therefore being adopted to restrict transports of susceptible animals to direct transports between the business of origin and the destination. Stopovers in transit should comply with strict conditions. The identification and registration system for livestock also needs to be improved. The system that is currently in place has been put under the direct supervision and responsibility of the national Government.

## **The OIE**

Until this recent outbreak of foot-and-mouth disease, the Netherlands had been classified by the OIE as a foot-and-mouth disease free country where vaccination is not practised (Article 2.1.1.2). According to Article 2.1.1.6, a country can regain this status after an outbreak when it has gone through a no-incidents period of:

- a. three months after the last case, where stamping-out and serological surveillance are applied, or
- b. three months after the slaughter of the last vaccinated animal where stamping-out, serological surveillance and emergency vaccination are applied.

As emergency vaccination was applied (the last vaccinated animal was killed on 25 May 2001), point b of the OIE regulations applies, so that the Netherlands regains its status as a "foot-and-mouth disease free country where vaccination is not practised" from 25 August 2001.

### **Characteristics of the Dutch strategy**

The Dutch strategy to control foot-and-mouth disease stood out in a number of ways:

#### *Education*

The National Inspection Service for Livestock and Meat (RVV) employs veterinary officers who are specially trained to recognise animal diseases such as foot-and-mouth disease. Continuous training and routine exercises help RVV veterinary officers keep their knowledge up to date. Private veterinarians also receive regular refresher courses on foot-and-mouth disease.

#### *Experience*

Because livestock farming in the Netherlands is intensive, both the authorities and the sector have a lot of experience with disease control operations. These experiences have been used to draw up contingency plans. Although the Netherlands had not had an outbreak of foot-and-mouth disease since 1984, the contingency plan had been continually adapted to incorporate new developments in the sector. A fully up-to-date contingency plan for the control of foot-and-mouth disease was therefore available in early 2001.

#### *Exercises*

Foot-and-mouth exercises are held each year. These exercises in 'peacetime' resulted in good agreements with organisations and businesses which are contracted to assist the authorities in the event of an outbreak of foot-and-mouth disease.

#### *Crisis Control Centres*

Local crisis control centres with responsibility for operational aspects are vital in implementing appropriate measures in the affected regions. In the 2001 outbreak, three crisis control centres were set up.

#### *Information*

Good information to the sector and the public facilitate disease control. Therefore, all measures were published immediately on the special foot-and-mouth page of the Internet site of the Ministry of Agriculture, Nature Management and Fisheries. A call centre was also set up and manned by competent staff seven days a week.

#### *Speed*

An important aspect of the Dutch strategy was the rapid response to every suspected or confirmed case of foot-and-mouth disease. When outbreaks of the disease occurred in other countries, Dutch authorities immediately checked which imports had taken place from those countries. Livestock was put under quarantine and preventively slaughtered or inspected on farms which had imported animals from the affected countries in a six-week period prior to the outbreak, as well as on contact farms.

## REPORT ON THE FMD SITUATION AND CONTROL PROGRAMME IN TURKEY

Republic of Turkey  
Ministry of Agriculture and Rural Affairs  
General Directorate of Protection and Control

### Foot-and-mouth disease Situation and Control Programme in Turkey

#### 1. Introduction

Foot-and-mouth disease (FMD) continued to be endemic in Turkey where 83 outbreaks have been reported in the past ten months in 2001. FMDV serotypes 0, A and ASIA 1 were circulating in the country. Type 0 and Asia 1 was responsible for most of these outbreaks.

The geographical situation of Turkey is always a risk factor for the dissemination of the contagious diseases mainly from the eastern and southeastern neighbours. Animal movements within the country are mainly from east to the western parts of the country, where big consumption areas are located.

Turkey has increased its efforts to **control illegal animal movements** through the borders. Illegal animal movement to Turkey has been minimised in 2001. Efficient control of the **animal movement within the country** is also improved.

- Very strict control measures are performed at the borders working with the coordination of the relevant authority. (Ministry of Agriculture and Rural Affairs, Ministry of Internal Affairs, Army, Custom etc.)
- In order to provide adequate penalties for illegal traders and carriers (Driver, Vehicle) some of the articles of the Law of the Animal Health and Control has been changed.
- Identification and registration system for bovine animals has been established.
- After the economical crises in this year, illegal animal movements to Turkey have been stopped (because of inflation).

National Veterinary Services have made great efforts to control the disease in recent years. To increase the farmer participation in the disease control programmes, it was decided to charge farmers for the FMD vaccination programme. Turkey has been investing significant amounts of money to increase the quantity and the quality of FMD vaccine which will in turn, contribute to the control of FMD in Turkey.

#### 2. Disease situation

*Daring the last 10 months in 2001*, 49 outbreaks due to type 0, 2 outbreaks due to type A and 32 outbreaks due to type Asia 1 have occurred in Turkey.



No FMD outbreak has been reported since March 1995 in the Thrace region when an outbreak (due to type 0) occurred in a goat flock in Tekirdag province in June 2001. Strict measures such as quarantine, disinfection, surveillance, ring vaccination and movement bans has been taken in the region. The disease did not spread to other places. As a result, all the restrictions and quarantine measures in the mentioned outbreaks have been lifted.

At the beginning of June 2001, a total of 18 foot-and-mouth disease virus (type 0: 10, A: 4 and ASIA1: 4) were sent to OIE/FAO World Reference Laboratory for diagnostic confirmation. Until now we have not received a report from the Pirbright Laboratory.

The list of outbreaks, broken down by month, is given for 2001 in Table 1.

**Table 1: FMD Outbreaks in 2001**

MONTH	OUTBREAKS				SUSCEPTIBLE		INFECTED		DEATHS	
	Type		ASIA1	Total	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep
	0	A								
January	4	1	3	8	4248	0	60	0	0	0
February	6	0	3	9	2890	0	20	0	0	0
March	17	1	8	26	21322	3565	232	165	2	0
April	2	0	2	4	2111	6500	86	150	15	62
May	5	0	6	11	6500	1100	437	80	1	0
June	9	0	9	18	8590	300	742	50	1	1
July	3	0	0	3	2413	0	34	0	0	0
August	0	0	0	0	0	0	0	0	0	0
September	1	0	1	2	1183	4	0	0	0	0
October	2	0	0	2	1400	0	150	0	7	0
<b>TOTAL</b>	<b>49</b>	<b>2</b>	<b>32</b>	<b>83</b>	<b>50657</b>	<b>11469</b>	<b>1761</b>	<b>445</b>	<b>26</b>	<b>63</b>

### 3. Control programme

Active surveillance and monitoring, vaccination, quarantine, restrictions on animal and animal product movements are being applied for the control of the disease. Stamping out policy has been approved to be implemented in the planned regions. Our aim is to reach at least 80% of vaccination coverage in large ruminants.

Active surveillance and monitoring programme has been carried out in the field especially in surveillance zone (Kars, Ardahan, Igdir, Agri, Van, Hakkari and Sirnak Provinces) for detection and control of FMD.

#### 3.1. Vaccination strategy in 2001

General Directorate of Protection and Control (GDPC) formed a control programme for the year 2001. **Biannual mass vaccination programmes** were applied.

- Application of routine mass vaccination using trivalent vaccine to **all ruminants** in the **Thrace and Marmara regions**.
- Application of routine mass vaccination using trivalent vaccine to **all large ruminants** in **other regions**.

- Application of **strategic vaccination** using trivalent vaccine to **large ruminants in the Black Sea region**.
- Application of strict quarantine measures and **ring vaccination around the outbreaks**.

### 3.2. Vaccine Production

Sap Enstitüsü (FMD Institute) located in Ankara is the only Government laboratory for vaccine production and diagnosis of FMD in Turkey. It also carries out the epidemiological studies in the country. Vaccine production figures in 2001 are given in Table 2. A total of 24.750.000 cattle doses of monovalent FMD vaccine have been produced.

**Table 2. Vaccine production in 2001**

Vaccine strain	Amount of vaccine produced (cattle doses)
<b>0 Manisa 69</b>	8.450.000
<b>A Aydin 98 (homologue Iran 96)</b>	9.500.000
<b>Asia 1 74</b>	6.800.000
<b>Total</b>	<b>24.750.00</b>

In addition 3.000.000 trivalent FMD vaccines have been imported from a commercial company.

On the other hand, The European Union (EU) was supplied 1.100.000 doses of trivalent FMD vaccine, containing serotypes 0, Asia 1 and A to be used in Thrace. Also 200.000 doses trivalent FMD vaccines remaining from last year were received. The amounts of vaccine delivered to the field for the Autumn campaign are given in Table 3.

**Table 3. The amounts of delivered vaccine for the Autumn campaign in 2001**

Vaccine strain	Amount of vaccine delivered (cattle doses)
Imported (01 Manisa, A 96, Asia 1)	3.000.000
FMD Ins. (01 Manisa, A Aydin 98, Asia 1)	3.524.000
Interved (01 Manisa, A Iran 96, Asia 1)	870.000
Bayer (01 Manisa, A Iran 96, Asia 1)*	230.000
<b>Total</b>	<b>7.624.000</b>

\*Stocked in Pendik Veterinary Control and Research Institute.

The present situation for vaccine production in *FNM Institute* is favourable and quantity of vaccine is sufficient to cover the needs for the autumn campaign. The amounts of vaccine delivered to Thrace region is given in Table 4.

**Table 4. The amounts of delivered vaccine for Thrace region**

Province	Animal Population		Delivered vaccine (cattle doses)
	Large Ruminants	Small Ruminants	
CANAKKALE	102.292	630.400	375.000
EDIRNE	112.685	215.836	175.000
ISTANBUL	80.170	82.730	114.600
KIRKLARELI	81.758	197.820	155.000
TEKIRDAG	97.470	158.587	230.000
<b>TOTAL</b>	<b>474.375</b>	<b>1.285.373</b>	<b>1.069.600</b>

### 3.3. Vaccination campaign

The vaccination programme in Turkey for 2001 is as follows:

- Thrace and Marmara Region: Vaccination of all ruminants with the trivalent vaccine containing serotypes 01 Manisa, Asia 1 and A Aydin 98 (Iran96) in Thrace and Marmara region (Edirne, Tekirdag, Kirklareli, Istanbul and Canakkale, Balikesir, Bursa, Yalova, Kocaeli, Sakarya, Bilecik, Bolu, Duzce).
- In other regions of Turkey: Vaccination of all large ruminants with the trivalent vaccine containing serotypes 01 Manisa, Asia 1 and A Aydin 98 (Iran96) in the remaining regions.

Vaccination coverage in the 2001 **Spring campaign** was about 60% both in Anatolia and in Thrace. Because of some problems at the industrial level and modernisation studies to improve the production conditions at Ankara, Sap Institute, sufficient quantity of FMD vaccine could not be produced at the beginning of the 2001.

In this period, due to the lack of the available vaccine, importation from other countries was intended, but none of the international producers put up tender until the end of March. Finally, in April, Indian Biological Company accepted to provide 3 million doses trivalent vaccine. As it was planned to vaccinate animals in the Thrace with the imported vaccine, the trivalent vaccine produced by Sap Institute were delivered through the eastern and southeastern borders. So, the rate of the vaccination in Thrace Region could not reach the desired level.

The **Autumn vaccination** campaign started on 1 October and should be completed by 15 December 2001. Vaccination campaign started from the Greek and Bulgarian borders in Thrace region. Initial vaccination figures for Thrace region and the other regions are given in Table 5 and in Table 6 respectively.

**Table 5. FMD vaccination figures for Thrace region**

Province	Animal population		Vaccinated		Percentage (%)	
	Large Rum	Small Rum	Large Rum	Small Rum	Large Rum	Small Rum
CANAKKALE	102.292	630.400	39.666	32.767	39	5
EDIRNE	112.685	215.836	66.066	26.293	59	12
ISTANBUL	80.170	82.730	27.578	5.623	34	7
KIRKLARELI	81.758	197.820	47.398	90.406	58	46
TEKIRDAG	97.470	158.587	59.409	36.635	61	23
<b>TOTAL</b>	<b>474.375</b>	<b>1.285.373</b>	<b>240.117</b>	<b>191.724</b>	<b>51</b>	<b>15</b>

Average vaccination percentage in Thrace region is 51% and 15% large and small ruminants respectively. Average vaccination percentage in the remaining region is 30% and 29% large and small ruminants respectively.

**Table 6. Vaccination figures for the Autumn vaccination campaign in the other regions**

	Vaccination programme		Vaccinated		Percentage	
	Large Rum	Small Rum	Large Rum	Small Rum	Large Rum	Small Rum
<b>Total</b>	7.302.040	1.394.857	2.188.491	404.178	30	29

### 3.4. Serological survey in Thrace

Serological survey is planned for Thrace region in 2001 before starting the Autumn campaign as follows:

1<sup>st</sup> group of 35 villages has been selected randomly for day 0 and 15 cattle and 15 sheep will be selected from these villages. To see the change in antibody levels the same group of animals will be bled at day 28. Samples have already been delivered to the FMD institute for day 0.

2<sup>nd</sup> group of the same amount of animals but from different 35 villages has been selected and the blood sera will be collected 60 days post vaccination.

3<sup>rd</sup> group: the same amount of animals but from different 35 villages has been selected and the blood sera will be collected 120 days post vaccination. To detect antibodies against 3ABC, it has been planned to test only two of these groups (day 0 and day 60 or 120).

4<sup>th</sup> group is selected to measure the protective level of vaccine in the field experimentally. For this purpose sero-negative 30 cattle and 30 sheep will be vaccinated and sera will be tested at days 0, 14, 28, 42, 56, by LPB-ELISA.

### 4. Progress for animal identification

Bovine animals in Turkey are identified by ear-tags since 1991 in some provinces. Some organizations such as Turkish Breeding Dairy Cattle Association also keep records and pedigrees of bovine animals in Turkey.

In order to identify and register all the bovine animals in Turkey, to eliminate the deviations in the existing implementations and to provide uniformity, the Regulation on Identification, Registration and Monitoring of Bovine Animals harmonised with Council Directive 92/102/EEC and Council Regulation (EC) No 820/97 was published in the Turkish Official Gazette, numbered 24069 on 4 June 2000 and is in force.

The Central Authority, General Directorate of Protection and Control, is responsible for establishing a national database on animal movements and health, ensuring information flow between local units, control of the works of local units, operation and development of the central database.

Identification of bovine animals is by ear-tags numbered by the local unit and documented by the bovine animal identity card.

In any case, in bovine animal movements in the country, the bovine identity card shall remain with the animal, the relevant parts shall be filled and signed by the authorities, and shall contain the number on the animal's ear-tag. The seller has to fill and sign the relevant parts of the annex of the bovine animal identity card and submit it within 21 days to the rural unit where his farm is located. If the selling was in auction areas, the documents are submitted to the auction authority.

There have been some changes and amendments in the relevant legislations of both Turkey and the European Union in terms of identification and registration of animals since 4 June 2000. The Law of 904 on Animal Breeding has been replaced with the new Law of 4631 on Animal Breeding approved and published in the Official Gazette of 24338 on 10 March 2001. As previously mentioned, the existing Turkish Regulation on Identification, Registration and Monitoring of Bovine Animals was prepared in compliance with the Directive 92/102/EEC. Therefore, it partially needs to be amended according to the new Turkish Law and the Regulation (EC) No 1760/2000 of the European Parliament and of the Council. Re-harmonisation is already in progress.

Implementation of identification and registration of all the bovine animals in Turkey was started in September 2001. Within this framework, a computerised database system was established at General Directorate of Protection and Control in February 2001. Testing the database system was carried out before the implementation phase by receiving the information from 3 provinces for trial. Internet connections and e-mail addresses have been done in 81 provinces.

A Training Programme on implementation of identification and registration of bovine animals for the provincial competent authorities and veterinary officers took place in the second half of June 2001. Documents to be used for identification and registration of bovine animals have uniformly been published.

**Report of the EUFMD/EC/OIE Tripartite Group Meeting on the Balkans  
held in Sofia, Bulgaria, on 12 October 2001**

**Introduction**

Dr. Dimitar Marutsov, CVO o.i.c, NVS, welcomed the participants and then gave the floor to his Excellency Mr Boiko Boev Deputy Minister of Agriculture and Forests, Bulgaria. He stated that no country can be sure to prevent FMD and he underlined the high importance of the regional co-operation through the Tripartite Group concept as a very appropriate forum to address the problems of the region. Regarding the spread of Bluetongue in the region, he acknowledges the importance of this particular meeting in a context where the disease continues to spread in the region.

The Secretary of the European Commission for the Control of Foot-and-Mouth Disease (EUFMD) welcomed participants on behalf of FAO. He stated that this annual meeting was of high importance for the control of FMD and other exotic diseases in the region. He explained that due to the situation of the Bluetongue, the second part of the meeting will be devoted to this disease and representatives of the other countries concerned in the region have been invited to attend. Experts from EC and OIE have also been invited.

Dr Ignacio Sanchez Esteban, Chairman of EUFMD thanked the Minister of Agriculture and Forests of Bulgaria for having accepted to organise and to host this meeting. He welcomed delegates from participating countries, from International Organisations i.e. EC and OIE (see Annex I - list of participants). Dr Esteban then presented the provisional agenda (Annex II) which was adopted. The meeting included two separate topics: FMD and Bluetongue and other exotic diseases.

**PART I: REPORT ON FMD**

**Item 1: FMD situation and control in Turkey**

The representative of Turkey presented a report on the situation of FMD over the past nine months. He stated that the situation is still serious with the presence of types O, Asia 1 and A which continue to circulate; 81 outbreaks had been reported, 47 due to type O, 32 due to type Asia 1 and two due to type A.

No FMD outbreak was reported since March 1995 in the Thrace region until an outbreak – due to type O - occurred in a goat flock in Tekirdag Province on June 2001. The disease was put under control with strict measures such as quarantine, disinfection, movement bans, control of animal markets and ring vaccination in the region. As a result the disease did not spread to other places and all the restriction measures in the mentioned outbreaks have been lifted.

The present situation for vaccine production in Şap Institute is favourable and the quantity of vaccine is sufficient to cover the needs for the autumn campaign.

The vaccination programme in Turkey for 2001 is as follows:

- in Thrace and Marmara Region, vaccination of all ruminants with a trivalent vaccine containing serotypes O<sub>1</sub> Manisa, Asia 1 and A Aydın 98 (Iran96) in Thrace and Marmara region (Edirne, Tekirdag, Kirklareli, Istanbul and Canakkale, Balıkesir, Bursa, Yalova, Kocaeli, Sakarya, Bilecik, Bolu, Duzce).
- In the other regions of Turkey: vaccination of large ruminants with a trivalent vaccine.

Vaccination coverage in the 2001 Spring campaign was about 60 % both in Thrace and in Anatolia. The Autumn vaccination campaign in Thrace and in Anatolia has started on 1 October 2001 and should be completed by 15 December.

A molecular epidemiology laboratory was established at the Şap Institute. An identification system for cattle (eartag and record) was started on 10 September 2001 and a training programme for the identification system has been completed.

The results of serological surveillance following the vaccination in Thrace Region in 2000 were discussed. The trivalent FMD vaccine (O<sub>1</sub> Manisa, A<sub>22</sub> Mahmatli and Asia 1) donated by the EU was used for the Autumn vaccination campaign in Thrace. This surveillance was carried out in different four groups:

1<sup>st</sup> group - a total of 35 villages and 30 large and small ruminants from each group were selected and picked up the sera at days 0., 28., and 120 post vaccination,

2<sup>nd</sup> group - the same number of animals but from 35 different villages were selected and the blood sera collected 60 days post vaccination.

3<sup>rd</sup> group - was selected to measure the protective level of vaccine in the field experimentally. For this purpose 30 seronegative cattle and 30 seronegative sheep were vaccinated and sera were collected at days 28. and 120 and tested by LPB-ELISA.

4<sup>th</sup> group - the sera from the first two groups were tested by MAT-ELISA for detecting NSP antibodies.

In the first two groups, sera were tested in single dilution (1/100) which was accepted as protective level by LPB-ELISA. In the third group, LPB-ELISA was carried out with two fold dilutions of the sera. In the last group, sera were tested by MAT- ELISA to detect antibodies against non-structural FMD proteins. Result of LPBE indicates a drop in protection titres on day 60 which could not be explained so far.

Another Serological survey is planned for Thrace region in 2001 before starting of the autumn campaign as follows;

1<sup>st</sup> group of 35 villages has been selected randomly for day 0 and 15 cattle and 15 sheep will be selected from these villages. To see the change in antibody levels the same group of animals will be bled at day 28.

2<sup>nd</sup> group of the same amount of animal but from different 35 villages will be selected and the blood sera will be collected 60 days post vaccination.

3<sup>rd</sup> group- the same amount of animal but from different 35 villages will be selected and the blood sera will be collected 120 days post vaccination. To detect antibodies against 3ABC, it has been planned to test only two of these groups (day 0 and day 60 or 120).

4<sup>rd</sup> group is selected to measure the protective level of vaccine in the field experimentally. For this purpose seronegative 30 cattle and 30 sheep will be vaccinated and sera will be tested at days 0., 14., 28., 42., 56 by LPB-ELISA.

The representative of Turkey then reported on the TCP/INT/8922 FMD Control Project. Most of the project activities have been implemented. A first workshop was held in Iran between 8 August and 1 September 2001 attended by the National Project Co-ordinator, TCDC Experts and three Experts from the Şap Institute. In general this TCP was considered to have been very useful in strengthening the regional co-operation between Turkey and Iran.

The Secretary of EUFMD explained that France has developed a bilateral co-operation with the National Veterinary Services in Iran since four years, and they have approached EUFMD and FAO to see whether a regional programme for FMD could be proposed.

### **Item 2: FMD situation in Greece**

Greece presented a report on Foot-and-Mouth Disease surveillance activities undertaken in 2001 until 30 September. FMD surveillance includes the passive surveillance – investigation of suspect clinical cases (250 samples collected) - surveillance on imports /or trade (1866 samples collected) and active and continuous epidemio-surveillance in areas at risk through the EVROS programme launched in mid 2000. This programme includes random sampling (36,887 samples) and pre-movement sampling (3,391 samples). All samples were found negative for FMD antibodies.

### **Item 3: FMD surveillance in Bulgaria**

Bulgaria presented the result of their sero-surveillance for 2000. The serosurvey included the six Bulgarian regions bordering Turkey and Greece, where 67 villages within the 10 km zone of the Turkish and Greek borders were sampled. A total of 12,800 samples were analysed with negative results.

### **Item 4: Strategy and support for FMD Control in the region**

The meeting recommended that regional co-operation be reinforced and that an EUFMD mission including representatives of Greece and Bulgaria should visit Turkish Thrace to assess the situation together with the FMD vaccination campaign being conducted with vaccine supplied by EUFMD/EC. The mission should also contribute to defining the apparently sub-optimal immune response in the 2000 campaign in Thrace, establishing the reasons for its occurrence and proposing corrective measures. Finally the mission should contribute to the finalisation of the requested TCP project on Infectious Transboundary Disease Surveillance in the Balkan Region – Bulgaria, Greece, Turkey (see Annexes III and IV) .

The Bulgarian participants made a request to the EUFMD to provide ELISA diagnostic kits for FMD (a quantity of 6000 doses) needed for the implementation of FMD serosurvey for 2002.



#### **Item 5: Report on the Research Group meeting in Denmark**

The Secretary circulated the part of the report related to the analysis of the serosurvey in Thrace. The Research group estimated that :

- The sérosurveillance carried out in Thrace after the 2000 Autumn vaccination campaign has been very useful. The reason why the level of immunity after 60 days and onwards decreased rapidly should be investigated further by Turkish authorities with the support of EUFMD and EC.
- The results of the 3ABC ELISA in Thrace are favourable. They demonstrated a 1% seroprevalence and based on this result there is a low probability of circulation of the virus in the region.
- The continuation of the serosurveillance in Turkish Thrace using the 3ABC ELISA should be encouraged and supported by EUFMD or EC.

#### **Item 6: Regional workshop for laboratories in the region**

The meeting agreed upon the importance to continue the series of National laboratories meetings/workshops which was initiated by Greece in 1998.

The next workshop will be hold in Sofia in February March 2002. The main subject will be the comparison of the results generated in the region with the 3 ABC ELISA for FMD and ELISA tests for Bluetongue. Other countries in the region could also be invited to attend.

## PART II BLUETONGUE AND OTHER EXOTIC DISEASES IN THE REGION

### Item 1: Situation of Bluetongue in the Mediterranean Basin

#### Introductory Overview

The introductory presentation described briefly development of the current bluetongue (BT) and West Nile virus situation in the countries surrounding the Mediterranean during the last four years. In contrast to earlier years which was typified by infrequent incursions of BT into the East from the Tigris/Euphrates drainage system, due to the wind-borne movement of vectors, it is now evident that the region is experiencing a major upsurge of BT. The two components of this were described as:

**The Western Mediterranean:** Soon after outbreaks of BT were reported from Tunisia and Algeria in 1999/2000, the disease erupted in the Balearic Islands (last affected in 1960), Corsica (for the first time), Sardinia, Sicily and mainland Italy as far north as Tuscany (reaching approximately latitude 43° N). The Balearic Islands and Sicily were reportedly free in 2001 and there were no reports from North Africa but after the winter quiescent period there was an upsurge of BT in Corsica, Sardinia, and mainland Italy (Lazio/Tuscany and Calabria) in 2001. This suggested that the virus could have overwintered. BT virus serotype 2 was the main cause although serotype 9 was also detected in mainland southern Italy.

**The Eastern Mediterranean and the Balkan countries:** Between June and August 1999 reports of bluetongue from the southern border area of Bulgaria signalled the start of an epidemic caused by BT virus serotype 9. Reports from Turkey and Greece soon indicated that the epidemic extended across the borders of the three countries. This was the first time that the disease had been reported from mainland Greece. In Turkey and Greece (extending westwards) outbreaks continued to occur until the end of the year. Outbreaks in the Greek islands close to the Turkish coast in Lesbos (returning after an absence of 20 years) and the Dodacanese islands (previously affected in 1998) were associated with BTV serotype 4. Turkey again reported outbreaks in August 2000 but not 2001 but although some virus activity was detected serologically in northeastern Greece in 2000, there was no associated disease in 2000 or 2001. However, outbreaks of BT in sheep were reported in the north-western part of Greece in August 2001, again on the mainland (the serotype was not stated this year but in the last three years serotypes 4, 9 and possibly 16 have been identified) and, in September, Bulgaria signalled a resurgence of disease in the west of the country close to FYRO Macedonia which also reported disease in September. At the same time there were reports of BT occurring in Kosovo and Serbia in the Federal Republic of Yugoslavia close to the borders of FYRO Macedonia and Bulgaria indicating the size of the area affected between Greece, Bulgaria and Serbia. In FR Yugoslavia outbreaks have been confirmed as far north as latitude 45°30' N.

In both the eastern and western Mediterranean foci of bluetongue virus infection, it appears that the virus could have overwintered north of its usual range and that it could now constitute a reservoir of infection for onward transmission. It is also perhaps of significance to note that vector studies conducted in Greece during the bluetongue incursion in mid 1999 failed to identify vectors of the species *Culicoides imicola*, but detected large numbers of *C. obsoletus*. The latter species is not a prime vector of

bluetongue. Studies from late August to mid-October of that same year did, however, find large numbers of *C. imicola* among collections of 19 identified species.

One reason for the changing pattern of disease which suggests itself, perhaps spuriously, is that of global warming which would be expected to extend northwards the geographic range of vectors from warmer climes. Associated with this is also the possibility that global warming will not only affect the geographic range range of vectors but also the permissiveness to virus multiplication of vectors, not normally sustaining virus transmission, might increase when reared at higher temperatures than normal<sup>1</sup>. Other factors could also be involved and these need to be identified and elucidated.

In addition to BT, Dr Roeder drew attention to the occurrence of West Nile fever in Israel and the Camargue region of France and also suggested that it is not only bluetongue and West Nile viruses which should be a cause of concern. There are numerous other vector-borne disease agents which should be included in considerations, especially other Orbiviruses such as the Simbu serogroup (typified by Akabane virus), the epizootic haemorrhagic disease (EHD) serogroup, African horse sickness (AHS), equine encephalosis and the Palyam serogroup. Little is known of many of these viruses in the Mediterranean/Middle East context despite the fact that Akabane and EHD viruses have been demonstrated in the eastern Mediterranean and AHS invaded the Middle East and the Iberian Peninsula in the past. The importance of EHD in cattle might well be greater than is realised. Largely anecdotal evidence from South Africa and the Far East suggest that epidemics of bluetongue-like disease in cattle can be caused by EHD. Akabane virus is well known as a cause of epidemics of arthrogryposis and hydranencephaly from transplacental infection. Another cause for concern is *peste des petits ruminants* which is widespread in the Middle East and spread recently into Turkey and Cyprus in recent years. It is remarkable that rinderpest has not featured in any emergency situations in the region since the last outbreak in Diyarbakir in eastern Turkey in late 1995/early 1996. The focus of infection from which this originated is believed to have been eliminated by the end of 1996 and there is now growing confidence through disease surveillance coordinated by the Global Rinderpest Eradication Programme that the only focus of rinderpest remaining in Asia is in Pakistan.

### **The Western Mediterranean**

**Spain:** Dr Sanchez Esteban reported that there has been no recurrence of infection in the Balearic Islands in 2001 following an intensive programme of vaccination in the face of disease in 2000.

**Italy:** Prof Caporale presented a comprehensive report of the recent situation in Italy confirming the widespread occurrence of serotype 2 BT in insular and mainland Italy as far north as Tuscany (approximately 43° North) associated with the vector *Culicoides imicola*. He described 6,500 outbreaks in the last 'epidemic year' of 2000/2001 with 1.5 million sheep and goats being involved of which 260,000 were sick and 47,000 died; many more were slaughtered. In Sardinia alone there were about

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<sup>1</sup> Wittmann, E.J., Baylis, M., and Mellor, P.S. (1998). Higher immature rearing temperatures induce vector competence for bluetongue virus in *Culicoides nubeculosus*. 4<sup>th</sup> International Congress of Dipterology 6-13<sup>th</sup> Sept, Keble College, Oxford, UK. Abstracts volume, pp. 248-249.

1900 outbreaks this year. *C. imicola* is believed to be the only vector which can sustain and transmit BT virus in the region although there is some concern over the role of *C. obsoletus*. In 2001 there had been no BT in Sicily since May. Disease surveillance relied on clinical signs for sheep, considered to be very sensitive in Italy, and serology for cattle. BT was believed to have spread to mainland northern Italy by wind-borne (the *Mistral*) movement of midges from Sardinia or Corsica. On many occasions infection was thinly spread over a wide area with only a single sheep being affected in a flock without any neighbouring flocks being affected. In Calabria animal movements also appear to have spread the disease. Towards the end of 2000, BTV serotype 9 had been detected in the eastern part of Calabria in addition to type 2 in the western part. The BTV serotype 9 virus appeared to be much less pathogenic than the serotype 2. A single bovine was found positive to serotype 4 in Sicily (confirmed at the Onderstepoort Veterinary Institute) but the significance of this finding is unknown.

West Nile virus had been detected in 1999 in Tuscany before its detection in France in 2000.

**France:** Dr Février described the continuing epizootic of BT in Corsica. Occurring first in October/November 2000, the epizootic died down during the winter to reappear earlier in 2001 - in July/August and was still ongoing with 132 outbreaks confirmed and a morbidity in the region of 10 per cent and case fatality rate of 14 per cent overall.

## **Item 2: Information on current epizootiological situation and control of Bluetongue in the Eastern Mediterranean and the Balkans**

**Greece:** Following the events of 1998 to 2000, BT recurred in 2001 but in the west of mainland Greece where there were 19 outbreaks (as of 5/10/2001) close to the northern borders. This was considered to be a reintroduction to Greece after a virus-free winter. Serotypes 4, 9 and 16 have been recorded in the last three years; one apparent identification of serotype 2 is inconclusive. Clinical signs were described as mild and only lasting three to four days. Morbidity and mortality rates were low at approximately 3.9% and 0.5% respectively after the first outbreak in which the rates were higher at 11.25% and 3.75% respectively. Thus, BT in Greece is not a significant cause of loss but it presents problems with movements of animals because of proposed EC Directives.

In the first outbreaks in 1999, *C. imicola* was not identified in midge collections which consisted of *C. obsoletus* and others. In 2001, BT virus was isolated for the first time from *C. obsoletus* but it is considered not to be an efficient vector, requiring a large population to become a significant element in transmission.

**Bulgaria:** Matching the events in Greece, after its introduction for the first time by July 1999, BT recurred in Bulgaria in September 2001 in the extreme west of the country; areas affected in 2000 were not affected in 2001. As part of an EC research project coordinated by the Institute for Animal Health, Pirbright Laboratory, vector studies have so far this year failed to demonstrate the presence of *C. imicola*. The prevailing species have been *C. pulicaris*, *C. obsoletus* and *C. fascipennis*.

In 2001 there was no recurrence of disease in the formerly-affected areas and extensive serosurveillance studies confirmed that the BT virus activity was limited to a few districts in the extreme west of the country.

**Turkey:** The Turkish Representative described confirmation at the Pirbright Laboratory of BT serotypes 9 and 16 in the outbreaks reported in 2000. No cases were observed in 2001, the last case having been in August 2000. Another step taken to limit outbreaks was to move sheep flocks to higher ground away from high ridge concentrations. Serosurveillance is proceeding in Thrace.

**Federal Republic of Yugoslavia:** There have been no reports from Montenegro. The first case of BT in FR of Yugoslavia was noted in October close to the border with Bulgaria. Samples were sent to Pirbright Laboratory for confirmation. There were suspicions of BT in Serbia in June, not confirmed, followed by confirmed disease in August thought to have originated from the southern side. Most cases were close to the border but others occurred in September in the middle part. Just two days before the meeting (19th October) BT was present at latitude 44° 30' North at two sites in the west. Serology for BT will be included in the biannual serosurveillance studies conducted for enzootic bovine leukosis and sheep will also be tested. Atypical and severe storms with high winds blowing from the east were reported to have occurred several times this year.

**Former Yugoslav Republic of Macedonia:** BT had never been reported before 26<sup>th</sup> September when an outbreak occurred close to the border with Bulgaria in the region of Kriva Palanka in the north-east. It was confirmed in Skopje by use of the competition ELISA. BT is also suspected to be occurring in the north-west but this can not be confirmed at present. Morbidity was 16 of 300 sheep with two deaths. Signs were typical, fever to 41.6 °C, buccal and nasal oedema, erosive lesions in the mouth and on the feet with secondary infection being noted. Further epidemiological investigations are underway.

### **Vaccination and control**

Both Spain (Balearic Islands) and France (Corsica) employed vaccination with South African serotype 2 monovalent vaccine in 2000 but not in 2001. Italy intends to vaccinate in 2001 in areas where there is a risk of virus transmission occurring using serotype 2 vaccine in most areas and serotype 9 in eastern Calabria. Italy's objective in using vaccination is to prevent the movement of virus to the north i.e. to reduce the virus presence and its possible impact on trade.

Modified live BT serotype 4 vaccine (600,000 doses) is kept in reserve at the Etlik Central Veterinary Vaccine Control and Research Institute for use if required. The selection of this serotype was based on the finding of this serotype to be responsible for outbreaks in 1977-79. Use of this vaccine reserve was made in 1999 and 2000 and continues in 2001 with more than 574,000 sheep vaccinated this year in the area where BT occurred last year. Turkey is unsure whether or not to continue with vaccination.

In 2000 Bulgaria fought the disease outbreaks by a combination of movement control, topical application of insect repellent and insecticide in addition to vaccination with a pentavalent vaccine (from Onderstepoort Veterinary Institute) provided by the EC.

Greece is strongly opposed to the use of vaccine and the representative referred to indecision as to the safety and efficacy of vaccination. He welcomed issuance of an

EC tender for safety and efficacy testing of BT vaccines. Greece is already implementing the provisions of the proposed EC Directive on BT which designates 20 km infected and 50 km stand-still zones. Insect repellents and movement regulation are the other key control elements.

### **Item 3: Situation of other exotic diseases in the region**

With respect to EHD, infection is endemic in the southern part of the USA, Dr Pearson stated, yet clinical signs are not seen. However one should note the occurrence of Ibaraki disease in the Far East which illustrates a potential problem. Extensive serosurveillance has been conducted systematically in Greece since 1998 and has not detected any EHV infections. Dr Pearson also mentioned that most of the world considers itself to be free from Akabane virus but no-one is looking for evidence of infection. Most participants were unaware that Akabane outbreaks had been experienced in Turkey in the late 1970s.

As for BT, all serosurveillance in Greece for PPR and sheep pox has proved negative but one single outbreak of sheep pox occurred in 2000. Greece is also conducting routine serosurveillance for rinderpest in slaughter houses.

Turkey confirmed the presence of PPR and their concern over its continued existence.

### **Discussion**

The issue of vaccination generated some discussion. On the one hand, it was suggested that its use in 2000 had effectively eliminated BT from the Balearic islands and from areas of Bulgaria affected in 1999. On the other hand, it was pointed out that vaccination did not clear Corsica and that north-eastern Greece has been to all intents and purposes for the last two years despite the fact that vaccine was not used. When asked if the EC had a policy about the use of BT vaccine – i.e. whether vaccine should be used prophylactically or to control existing outbreaks – Dr Février indicated that vaccination of sheep remains a useful tool to reduce (or prevent) morbidity and mortality in this species in infected areas (or those threatened by infection) even if it does not strictly prevent an extension or persistence of virus circulation.

The involvement of wildlife in BT outbreaks and maintenance in Europe was raised because of the large populations of deer but there is little information as to their involvement.

Dr Pearson indicated that the trade implications of BT make it appropriate for the organisation to sponsor a meeting on BT. He added also that one can never predict in the USA when the disease will appear and when it will disappear again. He also believed that it is very possible that the infection has not become permanently established in the areas in which BT has recently been experienced.

With respect to EHD, infection is endemic in the southern part of the USA yet clinical signs are not seen. However one should note the occurrence of Ibaraki disease in the Far East which illustrates a potential problem.

Greece referred to the launching this year of an EC-supported project for the entire Mediterranean Basin to study vector distribution in order to develop risk maps, direct BT surveillance and formulate policies. The first Coordination Meeting will be held in Madrid in December.

There was a consensus of opinion that there are too many gaps in information on BT virus and vector distribution at present to fully understand what has been happening. There is clearly a need to strengthen surveillance in the region, not only for BT but for all high risk transboundary animal diseases. FAO was requested to explore the possibility of developing a proposal for assistance, through the FAO Technical Cooperation Programme, for the countries of the eastern Mediterranean and the Balkans. FAO should continue proactively to support coordinated disease surveillance in this region.

## Annex I

### List of Participants

#### **Bulgaria**

- Dr. Pencho Kamenov, Director "Animal Health, animal identification and animal welfare", NVS
- Dr. Ilian Boikovski, Chief expert, NVS
- Dr. Boiko Likov, Director "International relations, veterinary legislation and Eurointegration", NVS
- Dr. Georgi Georgiev, Head of "FMD and exotic diseases Laboratory", NVS
- Dr. Nedelcho Nedelchev, for Director "National Diagnostic and Research Veterinary Institute", NVS
- Dr. Krasimir Zlatkov, Director "Control of VMP", NVS

#### **FYR Macedonia**

- Dr. Zoran DANEVSKI, Director of Veterinary Services, CVO
- Dr. Toni KIRANDZISKI, Head Animal Health Unit

#### **Greece**

- Dr. V. STYLAS, Chief Veterinary Officer
- Dr. D. PANAGIOTATOS, Head of section and Member of EUFMD Executive Committee

#### **Turkey**

- Dr. H. Hüseyin POLAT, Deputy General Director
- Dr. Mustafa TUFAN, Director of Epidemiology and Information Section

#### **FR Yugoslavia**

- Prof. Dr. DOBRIC, Veterinary Faculty Zagreb
- Dr. Milena SIMIC, Federal Ministry of Agriculture
- Dr. Milos PAVLOVIC, CVO, Serbia

#### **OIE**

- Dr. J. PEARSON, Head Scientific and Technical Dep. OIE, Paris
- Dr. N. BELEV, President of Regional Commission for Europe and Regional Coordinator of OIE for Eastern Europe

#### **EC**

- Dr. Jacques FEVRIER, Health & Consumer Protection Directorate General, SANCO Legislation on animal health and live animals
- Pf. Vincenzo CAPORALE, Director IZS Teramo, Italy

#### **FAO**

- Dr. Peter ROEDER, Animal Health Officer (Virology)

#### **EUFMD**

- Dr. Ignacio SANCHEZ ESTEBAN, Chairman
- Dr. Yves LEFORBAN, Secretary



**AGENDA****PART I : FMD****Item 1**

FMD situation in Turkey	Turkey
Vaccination in Turkey	Turkey
2001 Autumn vaccination campaign in Thrace Turkey/EUFMD	
Serosurveillance in Thrace	Turkey
Report on the TCP Iran and Turkey	Turkey

**Item 2**

FMD surveillance in Greece	Greece
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**Item 3**

FMD surveillance in Bulgaria	Bulgaria
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**Item 4**

Strategy and support for FMD Control in the region	EUFMD
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**Item 5**

Report on the Research Group meeting in Denmark	EUFMD
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**Item 6**

Regional workshop for laboratories in the region  
Bulgaria/Greece/Turkey

**PART II: Bluetongue and other exotic diseases****Item 1**

Situation of Bluetongue in Mediterranean Basin - introductory overview	Dr P. Roeder
Situation in the Western Mediterranean	
<ul style="list-style-type: none"> <li>▪ Spain</li> <li>▪ France</li> <li>▪ Italy</li> </ul>	Dr I. Sanchez Esteban Dr J. Février Dr E. Caporale

**Item 2**

Information on current epizootiological situation and control of Bluetongue in the Eastern Mediterranean	
<ul style="list-style-type: none"> <li>▪ Greece</li> <li>▪ Turkey</li> <li>▪ Bulgaria</li> <li>▪ FR Yugoslavia               <ul style="list-style-type: none"> <li>- Federal Veterinary Service</li> <li>- Serbia</li> </ul> </li> <li>▪ FYRO Macedonia</li> <li>▪ Albania</li> </ul>	Dr D. Panagiotatos Dr M. Tufan Dr I. Boikovski  Dr Dobric Dr M. Pavlovic Dr Z. Danevski

**Item 3**

Situation of other exotic diseases in the region - discussion

**Guidelines for regional approach/programme to FMD Control  
in Balkan countries**

**Framework / background:**

1) The need to establish such guidelines was identified by the Tripartite Group held in Istanbul on 20 October 2000. It is based on the observation that despite the tripartite meetings held each year between representatives of the three countries, few practical actions regarding regional co-operation take place as follow up to the meetings.

2) The recent improvements in the political relations between the countries in the region - breaking of the iron curtain, improvements of political relations between Greece and Turkey - did not lead to significant improvement of regional co-operation at the field level, although bilateral agreements have been signed between the Ministers.

3) The three countries work with a similar objective which is to prevent and to combat FMD and other exotic diseases. However they use different legislation's and rules to achieve this objective

**Objectives:**

1) To define a framework in which the three countries should work with the ultimate goal of preventing FMD and other exotic diseases entering the region / or reducing the risk of introduction

2) To determine the goals and actions which should be pursued/achieved in individual countries and by the three countries.

This frame work is not exclusive of other ad hoc bilateral arrangements between the countries on particular or local aspect ( border agreements)

**Programme components:**

***Zones/Area concerned***

- Bulgaria: Haskovo, Yambol and Burgas districts
- Greece: Evros Prefecture
- Turkey: Kirklareli, Tekirdag, Edirne, European part of Canakkale and Istanbul Provinces

Turkey proposed that Eastern Anatolia Zone: Border provinces would also be included.

***Animal identification***

- Marking (notching) or identification by ear tag of small ruminants in the 10 km zone along the borders
- Full identification of ruminants in the all areas is preferable

### ***Clinical surveillance***

An active surveillance programme - including active clinical surveillance should be carried out in the region and the results should be made available to the concerned countries.

### ***Serosurvey***

- Inform in advance neighbouring countries and international organisations of the programme for serosurvey and of the results.
- Routine serological surveys for monitoring vaccinations - when practised - and for the detection of antibodies against non-structural proteins should be done and the results can be shared.

### ***Reporting***

- Early reporting of outbreaks to OIE, EUFMD, EC and neighbouring countries.

### ***Disease reporting and exchange of information at regional level***

- Regular meetings should be planned between regional (provincial) veterinary services and regular bilateral visits may be planned to increase confidence between veterinary services in the three countries.

### ***Disease reporting and international notification***

To copy to the two other countries the reports addressed to OIE.

### ***Vaccination***

Inform in advance neighbouring countries of vaccination programmes in border districts/Provinces/Prefectures.

### ***Contingency plans***

- Each country should prepare contingency plan. These plans can be shared between countries.
- A copy of each plan should be provided to the neighbouring countries and updating should also be reported to the neighbours.

### ***National laboratories***

The series of workshops between national laboratories in the Balkans will be continued. Other countries in the region and other exotic diseases could also be included.

**TOR for the FMD Mission to Turkish Thrace to evaluate the FMD situation and assess the Autumn vaccination campaign**

**Participants:**

- EUFMD Secretary or Expert\*
- One Bulgarian FMD expert
- One Greek FMD expert
- Turkish FMD experts

(\*) the expert should be involved in practical aspects of the surveillance.

**Date / Duration**

One week at the end of November 2001.

**Route of the mission**

Istanbul – Kirklareli – Edirne – Istanbul – Ankara

The mission will pay particular attention to the border areas and visits to Bulgarian and Greek sides of the border could be included on an *ad hoc* basis.

**Objectives of the Mission**

- 1- Assess progress in implementing the vaccination campaign of 2001 with vaccine supplied by EUFMD/EC.
- 2- Contribute to defining the apparently sub-optimal immune response in the 2000 campaign in Thrace and the reasons for its occurrence, and propose corrective measures.
- 3- Contribute to the finalisation of the requested TCP project on Infectious Transboundary Disease Surveillance in the Balkan Region – Bulgaria, Greece, Turkey.

## Project for “Foot-and-Mouth Disease Surveillance” in Central Asia

*François Geiger, DGAL, Toulouse, France*

### **Background**

The bilateral veterinary cooperation promoted by the French Ministry of Agriculture since October 1996 has allowed to develop real institutional relations between National Veterinary Services in France and Iran in the following domains:

- training session in France (epidemiology and diagnostic of FMD),
- seminars and technical meetings on FMD in Iran,
- technical assistance trainees/trainers in Iran.

This thematic cooperation involved veterinary administrations, veterinary universities and diagnostic and research laboratories.

The implementation of this programme demonstrated the strong involvement of both Veterinary Services on this subject and their ability to work together, both with other partners (Razi Institute, Veterinary Faculty of Tehran, Agence Française de Sécurité Sanitaire des Aliments, etc..) as well as in relation with other projects (FAO Technical Cooperation Project on FMD between Iran and Turkey).

Both Services recently submitted to the French Embassy in Teheran a joint project for the establishment of a “buffer zone” of vaccination against FMD at the borders with Afghanistan, Iraq, Turkmenistan.

All these elements together with the key geographical situation of Iran as one of the main routes for animal between Asia, Europe and Arabic Peninsula justify the proposal to set up a Foot-and-Mouth Disease Surveillance Project for Central Asia in Iran.

### **Objective of the project**

European post of observation enabling a FMD surveillance system, with:

- centralisation and circulation of information on FMD in the region,
- assessment of effectiveness preventive vaccination in the region,
- rapid alert toward neighbouring and European countries in case of risk of spread of the disease from the region.

### **Brief description of the project**

The “Foot-and-Mouth Disease Surveillance Project” could be established as an independent structure within the Iranian Veterinary Services (Ministry of Agriculture and of Jihad – Iranian Veterinary Organisation) or within a regional organisation (E.C.O).

Its goal would be:

- to analyse the epidemiological data collected in Iran and in the country taking part in the project (monitoring of the outbreaks, identifying and tracing sources of contamination, follow-up of vaccination campaigns),
- to carry out a surveillance of viral strains based on the collected samples which will be tested at the Central National Laboratories of Karaj (Iran) and of Ankara (Turkey) and if necessary at the AFSSA (Lyon France) and at the WRL (Pirbright, UK) including the census of the strains circulating and their features for molecular epidemiology,
- to establish a sentinel veterinary network in sensitive areas at the Iranian borders,
- to guarantee a follow-up to the FAO TCP project for FMD control and surveillance started in 2000 and 2001 in Iran and Turkey,
- to circulate the information collected in every country taking parts participating in the project.

### **Technical and financial aspects of the project**

Step 1 : to organise a joint EU/FAO/France expert mission in January/February 2002 to identify the project and carry out the feasibility study,

Step 2 : to propose the project to EU and other organisations for funding.

**Report of the Session of the Research Group of the Standing Technical Committee of the  
European Commission for the Control of Foot-and-mouth Disease  
Island of Moen, Denmark, 12-15 September 2001**

**Kris De Clercq**

**Participants:**

Kris De Clercq (Belgium), Aldo Dekker (the Netherlands), Franco De Simone (Italy), Chris Griot (Switzerland), Bernd Haas (Germany), Per Have (Denmark), Francois Moutou (France), Vilmos Palfi (Hungary), José Sanchez-Vizcaino (Spain), Nilay Unal (Turkey), Hagai Yadin (Israel)

Soren Alexandersen as representative from the World Reference Laboratory

EC observers: Alf-Eckbert Fuessel, Jurgen Westergaard. Observers attended for Turkey and the WRL.

***Conclusions and recommendations for following items:***

**Item 1 - General information on the FMD situation in the World**

Countries that had been free of the disease for long periods of time have had to cope with introductions of virus and the subsequent difficulties of disease eradication. The restrictions associated with the measures taken to control the disease have had severe societal and economic impacts. In Europe this was also the case for free countries distant from the outbreaks.

Massive outbreaks of FMD caused by an A strain in South America have necessitated the return to mass prophylactic vaccination in Argentina and Uruguay. The complex situation with 3 distinct A strains circulating in the Middle East and Turkey continues to make control efforts difficult in this region. Turkish Thrace experienced its first outbreak since 1996, with type O affecting a goat farm in Tekirdag province. The disease has been rapidly controlled by ring vaccination.

- Sequencing of the virus isolated in United Kingdom, France and the Netherlands indicated that the outbreaks were due to the same strain of virus.
- International trade in live animals (livestock, exotic pets, game species, zoo animals) and of animal products in most regions of the world is increasing. This remains the primary risk for the spread of FMD particularly because there is a general neglect of biosecurity issues when driving trade liberalisation measures forward.
- The deterioration of national veterinary services in many countries due to under-staffing and cut-backs in resources seriously undermines their ability to quickly uncover an exotic disease problem and respond appropriately.
- All European countries should recognise the increased risk of FMD and take advantage of the lessons learned by the affected member countries to improve their contingency planning and prevention measures for FMD.

**Item 2 - Reports on the outbreaks in Europe**

- Based on the experience in the UK further research on FMD in sheep is encouraged.
- Contingency plans should be prepared for at risk situations or zones. EC legislation should include measures for pre-emptive culling. Methods for culling and disposal of carcasses should take into account the status of animals destroyed i.e infected farms, contact, vaccinated etc.
- Exchange of epidemiological and laboratory information between European countries and with international organizations should be encouraged. EUFMD should play a keyrole in this.
- A procedure to ensure availability of a large quantity of reagents in case of major outbreaks in Europe should be developed, possibly in cooperation with private companies. The creation of a reagent bank is a possibility.
- The situation where a major FMD outbreak occurs in the country of the laboratory designated as the European Reference Laboratory should be foreseen.

- Methods and criteria for surveillance to regain FMD free status should be better specified in order to be included in the OIE Zoo Sanitary Code.
- Implementation of the existing European legislations on identification of animals should be reinforced.

### **Item 3 – Reports on field and laboratory experiences during the crisis in Europe**

- Media have had a major role in the recent epidemic and a better harmonisation of the messages to be addressed to the public opinion at the European level should be encouraged. EUFMD should play a coordinating role in this respect.
- FMD laboratories in Europe should ensure that they use the most sensitive cells for virus isolation of all FMD strains. There is a need for ring testing to be organized for virus antigen detection between FMD Reference Laboratories in Europe.
- Several countries used the 3ABC ELISA for screening of the samples collected from imported animals. The specificity of the 3ABC ELISA ( $\pm 99.7$ ) was superior to the specificity of the tests for antibodies against structural proteins such as the LPBE. There is a need for reference sera for these tests.
- For detecting antibodies against structural proteins the LPBE should be replaced by the SPCE.
- The results of the testing serum should be related to different reference sera as the selected cut-off serum is causing problems in several laboratories.
- In case of doubtful serological results, second sampling of the same animal and other nearby animals is recommended.
- Most countries used RT-PCR next to standard virus isolation. The use of RT-PCR could shorten the time needed for diagnosis. Standard references for RT-PCR are necessary.
- Before a sampling scheme is implemented one should identify the purpose of the test. A distinction has to be made between surveys looking for the presence of virus at a certain prevalence or surveys for declaring freedom of infection.
- There is a need for harmonization of the rules of movement of horses and of certification in Europe in the case of an FMD outbreak.

### **Item 4 - Special session on new kits by private companies and IAEA**

- Commercially produced complete test kits are now available. This allows to increase the testing capacity to the level required for whole herd testing of vaccinated populations. These tests have been validated extensively for cattle and also for sheep; less validation data have been generated for pigs. The tests are suitable for differentiation between vaccinated and infected animals on a herd basis, but will not reliably identify individual carrier animals in a vaccinated population. Further studies correlating the antibody response to structural and non-structural proteins in sera and other types of samples with virus isolation and PCR data in carriers should be performed; these parameters should also be examined in pigs.
- Modern well purified vaccines will not induce antibodies to NSPs.
- Preliminary data indicate that most current tests may not be suitable for sera of wildlife species, new domestic species such as llamas, and certain breeds of buffaloes. Competition/inhibition assays may overcome this problem.
- There are differences in the relative analytical sensitivity and diagnostic sensitivity and specificity of the available assays. Further results on the performance of the existing NSP tests should be reported in the future.  
A reference serum bank characterizing different epidemiological situation should be established, which contains sera of relevant species in sufficient quantities for reference and developmental purposes.  
The experience of the IAEA revealed the importance of training and quality control for the application of NSP serology.
- The use of these tests in vaccinated populations should be encouraged in order to reveal cases of FMD that had not been detected by clinical inspection, increase confidence in the effectiveness of eradication measures and gather experience with the tests in various epidemiological situations.

## **Item 5 - Serosurveillance**

- Clear guides for FMD surveillance in Europe in different circumstances combining clinical and serological surveillance should be established in coordination with OIE. Results of a serological surveillance following the vaccination in Thrace region in 2000 were presented. Sera obtained from three different sets of animals were tested by a liquid phase blocking ELISA. Although a high level of immunity was observed at 28 days post vaccination, a rapid decrease was observed in the immunity levels after 60 days onwards especially against types O and Asia I. The reason why the level of immunity after 60 days and onwards was decreased rapidly should be investigated further by Turkish authorities with the support of EUFMD and EC.
- The use of NSP ELISA in serosurveillance should be encouraged. Results of a 3ABC ELISA serosurvey conducted with the sera obtained from Thrace after vaccination were presented. In this study a total of 2,639 sera were tested. The results showed that 1% of the sera were positive. Based on this result there is a low probability of circulation of the virus in the region. The positive sera might be as a result of false positives or an indication of previously infected animals that might have been introduced into Thrace from Anatolia. The continuation of the serosurveillance in Turkish Thrace using 3ABC ELISA should be encouraged and supported by EUFMD or EC.

## **Item 6 – Subclinical infection**

- Sheep are frequently subclinical infected and FMD virus can persist in this species. If sheep are involved in a FMD outbreak an adequate serological screening must be performed.

## **Item 7 – FMD diagnostics**

- Two different automated RT-PCR systems have been evaluated. They were up to 10 times more sensitive than virus isolation and allowed 64 samples to be tested per working day. A second passage in cell culture can be avoided if RT-PCR were positive in the first passage. Contamination can still be a problem.

## **Item 8 – Pathogenicity**

- The results of airborne virus transmission studies confirm that pigs compared to cattle and sheep are relatively resistant to infection by airborne FMDV. The findings indicate that the risk of airborne transmission from pigs will vary depending on the specific virus isolate: The amount of virus (in TCID<sub>50</sub>) emitted per pig per 24 hours was 10<sup>3.8</sup> for FMD viruses O1 and 10<sup>7.6</sup> for C Noville. The risk of aerosol transmission from pigs is variable but significantly high therefore infected pigs should be eliminated as soon as possible.
- Infected sheep excreted around 10<sup>4.3</sup> TCID<sub>50</sub> / 24 hours and airborne excretion picked on a single day vary easily after infection. Virus as well as viral RNA were detected in probang samples collected at 4 weeks after exposure.

## **Item 9 - Risk analysis and expert elicitation**

- A paper was presented on the risk of importing exotic animals into Switzerland, holding them in a USDA, APHIS approved transit quarantine for 30 days before continuing their transportation into the USA. A formal risk analysis defined as a process consisting of risk assessment, risk management and risk communication was implemented at the Swiss Federal Veterinary Office. The calculated risk of introducing a false negative animal (e.g. FMDV infected animal) was estimated to be 5 x 10<sup>-6</sup> which is higher than the accepted probability of 10<sup>-6</sup>. It was concluded that exotic animals which are foreseen for transit quarantine should be handled the same way as for definitive import. International standards of laboratory testing should be considered when interpreting test results from the country of origin.
- EUFMD should continue to pursue a risk assessment by performing a detailed study of trade flows in animals and animal products and movements of people and other goods and conduct an expert elicitation.

## **Item 10 - Vaccines and antigen banks**

- Antigenic characterization of recent type O viruses circulating in Turkey was done at the SAP institute (Turkey) and showed that although some viruses gave low r values there is field evidence that these viruses can be covered by O Manisa vaccine. This information makes the need for inclusion of new type O in the bank less necessary. The group agreed that Challenge test should be organized to assess the protection of O1 Manisa vaccine against recent isolates from Turkey. In general the utilization of vaccine with high payload antigen content is encouraged to give



an adequate protection against new variants which may appear.

- The list of viral strains to be included in the banks as proposed by the World Reference Laboratory is endorsed by the group.
- A novel formulation procedure able to extend the shelf-life of FMDV emergency vaccines was described. The method involved preparing an oil vaccine with all ingredients into vials and storage of this formulation at ultra-low temperature until use. Experiments in guinea pigs indicated good long-term stability characteristics.

#### **Item 11 - European pharmacopoeia**

The results of the meeting with Group 15 V of the Eur.Pharm. and with the CVMP/Immunologicals Working Party of EMEA were reported. The purpose will be to write a new monograph and to draft guidelines on safety, quality and efficacy of FMD vaccine production and on the introduction of new FMD strains.

#### **Other items**

Nilay Ünal from Turkey confirmed the intention to hold the next meeting of the Research Group in Izmir, Turkey. The provisional dates are from 18 to 20 September 2002. Chris Griot confirmed the intention of having the RG meeting in Switzerland in 2003.

MTF/INT/011/MUL - TF number 904200

## EUROPEAN COMMISSION FOR THE CONTROL OF FOOT-AND-MOUTH DISEASE

Financial Report as at 30 September 2001

	US\$	US\$
<b><u>Balance as at 1 January 2001</u></b>		195,665
Interest received	5,196	
Contribution from member countries (As per statement 2)	<u>272,986</u>	278,182
<b><u>Expenditure</u></b>		
Commission Secretary	94,498	
Consultant	4,601	
Admin. Support Personnel	31,206	
Contracts	21,200	
Duty Travel	19,738	
General Operating Expenses	14,485	
Expendable Equipment	869	
Non-Expendable Equipment	=	
Total Expenditure		<u>-186,597</u>
<b>Balance as at 30 September 2001</b>		<b><u>287,250</u></b>

## STATEMENT 2

**TRUST FUND No. 9042.00 - MTF/INT/011/MUL -  
Inter-Regional - European Commission for the Control of Foot-and-Mouth Disease**

Status of Contributions as at 30 September 2001  
(expressed in US\$)

Member Governments	Outstanding 31/12/00	Contribution due for 2001	Received up to 30/09/01	Outstanding 30/09/01
ALBANIA	25.00	2,600.00	2,600.00	25.00
AUSTRIA	0.00	7,800.00	7,800.00	0.00
BELGIUM	0.00	13,000.00	13,000.00	0.00
BULGARIA	0.00	7,800.00	0.00	7,800.00
CYPRUS	2,600.00	2,600.00	0.00	5,200.00
CROATIA	5,200.00	2,600.00	5,191.00	2,609.00
CZECH REPUBLIC	0.00	7,800.00	7,800.00	0.00
DENMARK	0.00	13,000.00	13,000.00	0.00
FINLAND	0.00	7,800.00	7,800.00	0.00
FRANCE	0.00	26,000.00	26,000.00	0.00
GERMANY	0.00	26,000.00	26,000.00	0.00
GREECE	0.00	7,800.00	7,800.00	0.00
HUNGARY	0.00	7,800.00	7,800.00	0.00
ICELAND	2,600.00	2,600.00	2,600.00	2,600.00
IRELAND	20.00	7,800.00	7,800.00	20.00
ISRAEL	0.00	2,600.00	2,600.00	0.00
ITALY	5,033.42	26,000.00	0.00	31,033.42
LITHUANIA	0.00	2,600.00	2,600.00	0.00
LUXEMBOURG	0.00	2,600.00	2,600.00	0.00
MACEDONIA, The Former Yugoslav Rep. of	2,615.00	2,600.00	0.00	5,215.00
MALTA	0.00	2,600.00	2,595.22	4.78
NETHERLANDS	0.00	13,000.00	13,000.00	0.00
NORWAY	-7,800.00	7,800.00	0.00	0.00
POLAND	0.00	13,000.00	13,000.00	0.00
PORTUGAL	0.00	7,800.00	7,800.00	0.00
ROMANIA	0.00	13,000.00	13,000.00	0.00
SLOVENIA	0.00	2,600.00	2,600.00	0.00
SPAIN	0.00	13,000.00	13,000.00	0.00
SWEDEN	0.00	13,000.00	13,000.00	0.00
SWITZERLAND	0.00	13,000.00	13,000.00	0.00
TURKEY	0.00	13,000.00	13,000.00	0.00
UNITED KINGDOM	0.00	26,000.00	26,000.00	0.00
YUGOSLAVIA, Fed. Rep. of	75,661.30	7,800.00	0.00	83,461.30
<b>TOTALS</b>	<b>85,954.72</b>	<b>325,000.00</b>	<b>272,986.22</b>	<b>137,968.50</b>

## STATEMENT 3

MTF/INT/004/MUL - TF number 909700

## FOOT AND MOUTH DESEASE - EMERGENCY AID PROGRAMME

Financial Report as at 30 September 2001

	US\$	US\$
<b><u>Balance as at 1 January 2001</u></b>		43,168
Interest received		779
<b><u>Expenditure</u></b>		
Consultancy	3,900	
Duty travel	371	
Expendable Procurement	0	
Support Costs	256	
Total expenditure		4,527
<b>Balance as at 30 September 2001</b>		<b><u>39,420</u></b>

## STATEMENT 4

MTF/INT/003/EEC - TF number 911100

## FOOT AND MOUTH DISEASE

Financial Report as at 30 September 2001

	US\$	US\$
<b><u>Balance as at 1 January 2001</u></b>		218,878
Interest received	6,110	
Contribution received	773,596	
		779,706
<b><u>Expenditure</u></b>		
Consultancy	-	
Duty Travel	15,471	
Contracts	15,000	
General Operating Expenses	3,204	
Expendable Equipment	672,340	
Non-Expendable Equipment	-	
Support Costs 6% (on all items except expendable equipment)	<u>-2,179</u>	
Less: Total Expenditure		<u>703,836</u>
<b>Balance as at 30 September 2001</b>		<b><u>294,748</u></b>

## REPORT ON THE JOINT EUFMD/EC WORKSHOP ON FOOT-AND-MOUTH DISEASE SIMULATION EXERCISES

5 – 7 June 2001 - Brno, Czech Republic

### Introduction

A workshop, jointly organised between EUFMD and the EC, was held in Brno, Czech Republic on the 5-7 June 2001. Experts from EUFMD, the EC and from the following member countries were present: Belgium, France, Germany and the Netherlands. The workshop was very well attended with 49 participants representing 23 countries that included every Eastern European country (with the exception of Slovakia), the Baltic States, Cyprus, Malta and Iceland.

### Timetable

*Day 1* of the workshop was a desk-based session where the invited experts presented the FMD situation in Europe and other regions; the major risks of FMD introduction to Europe and the lessons to be learned from the 2001 outbreaks in Western Europe; the situation in UK, the Netherlands and France; the measures taken to prevent the introduction of the disease in Germany, Belgium and Austria; the FMD Legislative Measures taken by the EC; Contingency planning in EC; and Austria and the Czech Republic presented their Contingency plans.

*Day 2* of the workshop was an on-farm exercise where the Czech Veterinary and Emergency Services demonstrated all the practical steps involved in responding to a suspicion of Foot-and-Mouth Disease. On the farm in the district of Znojmo that was chosen for the simulation, the following practical demonstrations took place:

- the correct bio-security procedures for entering and exiting a suspect farm;
- how to conduct clinical examinations of animals (with live cattle, sheep and pigs);
- the correct procedures for taking and packaging samples for laboratory submission;
- the techniques and equipment for slaughtering animals on-site (the animals examined above were humanely slaughtered on site with captive bolt pistols, and electrical stimulation);
- the techniques and equipment for transporting the carcasses to a rendering plant while maintaining biosecurity en route;
- the special equipment designed for the disinfection and cleaning of personnel, vehicles and equipment.

In an afternoon desk-based session, a very detailed presentation and Questions-and-Answers (Q&A) session took place. The measures to be taken (i) in the protection and surveillance zones, (ii) in the country as a whole and (iii) in co-operation with neighbouring countries (particularly Austria, because the farm chosen for the simulation was very close to the Austrian border) if the samples taken in the morning session proved to be positive were discussed in great detail.

On *Day 3*, the participants made presentations detailing the contingency plans of their home country and in addition there were presentations on emergency vaccination, the management and structure of the outbreak response, carcass disposal, modelling airborne spread and computers as an aid to disease management.

## Conclusions

The FMD situation outside and inside Europe and the control measures applied in relation with outbreaks within the EU were reviewed.

The rapid movements of live animals and products of animal origin between different regions of the world and within countries and regions add to the risks of unexpected FMD outbreaks.

Contingency planning was reviewed and many individual contingency plans were presented. The key aspects of contingency planning were consistently highlighted, in particular:

Disease awareness - the importance of the relationship between farmers and veterinarians and the degree of education and training of the veterinarians.

Disease preparedness –including the legal basis for action, the importance of the contingency plan and the importance of using other national organisations such as the army and civil defense.

Rapid response – to disease outbreaks with abilities to eradicate FMD including provisions for emergency slaughter and emergency vaccination

Communication – the importance of communications

The simulation exercise carried out on a farm situated in the district of Znojmo was very well prepared and implemented. The control measures to be established in the event of an FMD outbreak linked to the exercise scenario were presented in a comprehensive way and the time table drawn up for the establishment of and enforcement of measures indicated that measures would be in place within hours.

## Recommendations

1. It should be guaranteed in all European/participating countries, that they have:
  - Equal abilities to detect and to control FMD,
  - An emergency plan where all necessary activities, funds, manpower, heavy machinery etc. are written down in such a way that the plan is a reliable document to organise control measures for FMD,
  - Either the country concerned based on national laboratory capacity or based on a contract with an other country have the possibility to get within a short period a positive diagnosis and a confirmed negative result in accordance with the protocol of the laboratory.
  - Awaiting results from the laboratory the authority sending the sample should arrange for appropriate preventive and control measures.
2. To reach and to keep the ability to detect and to control FMD the veterinary service must make clear that combat against the disease is a task for the whole society (industry, government). An outbreak of FMD may destroy the competitiveness of the national economy of every country involved for a long time. As learned from the FMD events of this year a sufficient number of trained experts in the public veterinary services and support by appropriate authorities such as the police/army are decisive.
3. It is necessary to have regular training of official veterinarians in the field of FMD control. This training should be done in two ways:
  - To train the strategy of control for leading veterinarians and staff from other governmental authorities concerned how to organise things in a region and how to co-operate with the industry and local authorities,
  - How to do the control on a farm or village level. Simulation exercise must be carried out to train staff in the procedures for carcass disposal. This exercise must train staff in decision-making for carcass disposal by including a process to accurately measure the real-life capacity of different disposal options and compare these measurements to the disposal needs generated by different scenarios.

4. Measures to reduce the free movement of people in the case of FMD seems to be an important point to improve the control regime.
5. Funding should be found to support the recommendations of this meeting by:
  - Organising seminars and workshops on topics about implementation of contingency plans. The exchange of practical information about the implementation between the pre-accession countries is highly valuable,
  - Organising regularly simulation exercises.
6. There is no reason to come back to a policy of preventive vaccination against FMD. But every country should be prepared (vaccine, syringer, other equipment, veterinarians) to do emergency vaccination if necessary.
7. Contingency plans should include a section on information which ensures that a clear communication message is given the whole society, including the media, about the content and the challenges of the plan.

## LIST OF PARTICIPANTS

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