منظمة الأغذية والزراعة للأمم المتحدة
联合国粮食及农业组织
FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
ORGANISATION DES NATIONS UNIES POUR L'ALIMENTATION ET L'AGRICULTURE
ORGANIZACION DE LAS NACIONES UNIDAS PARA LA AGRICULTURA Y LA ALIMENTACION

January 1985

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

Forty-seventh Session of the Executive Committee

The Hague, Netherlands, 5-8 March 1985

PROVISIONAL AGENDA

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2. FMD position during 1983-84
   - position and prophylaxis in Europe
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   - FMD position in other regions of particular interest to Europe
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Provisional Agenda Item 2

EUROPEAN COMMISSION FOR THE CONTROL OF FOOT-AND MOUTH DISEASE

Forty-seventh Session of the Executive Committee

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FMD position in Europe during 1983 and 1984

As in previous years, the foot-and-mouth disease situation in Europe remained generally favourable during 1983/1984, with the exception of the Iberian Peninsula where a number of outbreaks were reported in both Spain (1983) and Portugal (1983/1984).

Netherlands, after six years freedom from FMD suffered a number of outbreaks in December 1983 and in January/February 1984.

The Federal Republic of Germany reported two outbreaks, one in May, and one in September 1984.

FMD ASIA-1 type appeared for the first time on the European continent in June 1984 with two outbreaks recorded in Greece in the buffer zone area close to the border with Turkey. Italy has suffered a series of outbreaks of FMD since 26 November 1984, which have continued also in 1985, affecting different provinces in the country.

In Turkey, the disease was recorded in the whole of Anatolia during the biennium while the Thrace area has remained disease-free since 1978. In the USSR only sporadic outbreaks

have been reported. The remainder of Europe has enjoyed disease freedom.

Outbreaks of FMD and the responsible virus types recorded in Europe during 1983/84 and part of 1985 are shown in Annex 1. Detailed information on the disease situation in those countries where the disease occurred is as follows:-

Portugal Serious outbreaks of FMD, type A5, totalling 104 cases, were reported in 1983. More than 3,000 animals (cattle, sheep, goats and pigs) were affected. A mass vaccination programme was carried out and by the end of 1983, 1 073 832 cattle, 39 838 sheep and goats, and 236 780 pigs had been vaccinated. During 1984 the number of outbreaks decreased considerably with 20 reported in pigs in January, and 2 outbreaks in cattle, one in April and one in August. The origin of the outbreaks was probably related with illegal movement of animals in the frontier areas with Spain. This points again to the need for coordinating FMD prophylactic programmes and the importance of increasing vigilance in respect of animal movements between Spain and Portugal, and vice versa.

Spain From January to July 1983 the country was affected by a number of outbreaks of type A_5 which occurred in the central and northern provinces. Strict sanitary measures, ring vaccination and occasionally stamping out of all affected and suspected animals, were applied with 1 638 cattle and 4 203 sheep and goats involved. A mass vaccination campaign with trivalent $O_1/A_5/C_1$ vaccine was carried out on cattle, sheep and pigs. By the end of 1983, 4 500 000 cattle, 10 000 000 sheep and 3 000 000 pigs had been vaccinated. Since July 1983, no further outbreaks have been reported in Spain.

Serological investigation at the WRL, Pirbright, showed that FMD outbreaks caused by type A5 virus recorded in Spain, Portugal

and Morocco in 1983 had very similar patterns to, or were indistinguishable from A_5 virus classical strain. (WRL Information Sheet No. 36, 1983).

Netherlands After a period of almost seven years freedom from FMD (type A on 7 January 1977), six outbreaks of FMD virus type O_1 were diagnosed; four in the Noord-Oost Polder on 30 December 1983, and two in the province of Noord-Holland on 20 January and 2 February 1984. Twenty-one young unvaccinated cattle of less than one year were affected. Strict sanitary measures were applied and all animals of susceptible species present on the affected premises were killed and transported to the rendering plants in closed containers. In total 1 223 cattle, 110 pigs, 83 sheep and 13 goats were killed with a total compensation of 3 million Dutch guilders. Ring vaccination in the infected zones with monovalent vaccine type O_1 was carried out. The annual vaccination with trivalent vaccine O, A, C, of all cattle above the age of four months was completed as soon as possible, first in the infected zones, later also in the rest of the country.

The source of infection was not identified and the investigations carried out have not revealed the means by which a virus could have escaped from the FMD Laboratory at Lelystad (first outbreak occurred about 15 Km from the Laboratory). More detailed information is given in the Report of the Forth-sixth Session of the Executive Committee held in Bonn, Federal Republic of Germany in April 1984.

As of 7 March 1984, all restrictions were lifted and the country was declared free from FMD.

Denmark Complete information on the one FMD outbreak, type O_1, reported on 13 January 1983 on the island of Funen was provided by the Danish Veterinary Services at the Twenty-fifth Session of the Commission in April 1983. Denmark was declared free from FMD on 14 February 1983.

Federal Republic of Germany In 1984 two outbreaks were reported, one of virus type A5 and one of type O_1. The first outbreak of A_5 reported on 6 June 1984 was in a herd of 53 cattle and one pig located in the Weilheim-Schongau District, Bavaria. 7 cattle were affected, 2 of which died. All animals present on the affected farm were slaughtered and strict sanitary measures were applied. All animals on the infected farm were vaccinated with trivalent OAC vaccine on 23 March 1984. Epizootiological investigations carried out have not shown any evidence of the origin of the disease.

On 17 June a second outbreak of FMD was reported in cattle in the Weilheim-Schongau District, Bavaria, in a herd of 24 cattle, located 800 metres from the first outbreaks which were considered as the origin of the infection. All animals present on the farm were slaughtered and sanitary measures were applied including the establishment of a protection area within a radius of 10 Km around the outbreaks.

In both cases A_5 type virus was identified by the Federal Research Institute for Animal Virus Diseases, Tubingen, and this was confirmed by the World Reference Laboratory in Pirbright, U.K. All restrictions applied were removed on 19 July 1984.

A third outbreak of FMD type O1 was reported on 1 October 1984 in the Augsburg District, Bavaria, on a farm of 851 fattening pigs; 26 were affected. Stamping out of all animals present on the farm and strict application of the necessary sanitary measures brought the situation back to normal. The origin of the disease remained unknown.

Greece On 20 June 1984, FMD was recorded in two herds of cattle located in the Delta area of Evros Department (3 Km from the Turkish border). The Delta area is included in the buffer zone where all animals were vaccinated against O/A_{22} viruses during

the annual prophylactic campaign which was carried out in April 1984. The affected herds comprised of 930 head of cattle were immediately isolated and strict sanitary measures were applied. Samples from affected cattle were sent to the FMD Institue in Athens for typing. The FMD Institute confirmed the diagnosis and identified the virus type as ASIA-1. On 21/6/84 this was confirmed by the World Reference Laboratory, Pirbright, U.K. The Greek Veterinary Services informed the neighbouring countries, Bulgaria, Turkey, Yugoslavia and Albania, the OIE, FAO, and EEC, and requested FAO to provide an emergency supply of 50 000 doses of FMD vaccine of ASIA-1 type. Following consultation with the Chairman of the Commission the Secretary took action immediately and 50 000 doses of vaccine was airfreighted to Greece on 23 June. Arrangements were made for an additional 70 000 doses to be sent to Greece on 6 July. Both supplies were made through Rhône-Mérieux (Teheran production). Vaccination covering the whole buffer zone area was started on 25 June and completed on 13 July 1984. Revaccination was carried out on 30 July in and around the Delta area. The total number of animals vaccinated was 39 434 cattle, 118 012 sheep and 2 076 pigs. The emergency situation created in Greece by the presence of ASIA-1 virus outbreaks alerted the Bulgarian Veterinary Services who immediately enforced strict sanitary measures and vaccination of all susceptible animals (222 512 cattle and 390 510 sheep in the buffer zone (30 Km) bordering Greece and Turkey. 430 000 doses of ASIA-1 vaccine were supplied to Bulgaria by FAO on 24 June and on 6 July 1984. No vaccine was requested by Turkey; the Government officially informed FAO that vaccination campaigns had been carried out in the buffer zone with ASIA-1 vaccine in February 1984. On 3 July 1984, the Secretary visited the affected area in Evros where the emergency situation and actions taken for its control and eradication were discussed with local Government Authorities. The stamping out of all cattle in the two affected herds which started on 4 July, was delayed due to the difficult access in this area. Stamping out was extended to all animals present in a radius of 3 Km from the affected herds

and involved a total of 1 276 cattle and 11 pigs. Compensation paid to the owners including cost of stamping out operations amounted to 125 876 000 Dr.

Origin of the disease Since Turkey had officially declared that Thrace is free from FMD since 1978 and no outbreaks of ASIA-1 virus had been reported in Anatolia, (last outbreak 1973) epizootiological investigations carried out by the Greek Veterinary Services have not shown any evidence of the origin of the disease.

Investigations carried out at the WRL, Pirbright, have shown that: the 1984 AISA-1 virus strain from Greece is very similar to those from Lebanon in 1983 and 1984. It is closely related to Iran 1/73 and PAK 1/54 the earlier strains, and less related to the more recent ASIA-1 strains from India and Kampuchea. A vaccine prepared from Iran 1/73 or similar strains should give adequate protection. (FMD type ASIA-1 in Greece. WRL Informaiton Sheet No. 37, July 1984). (Annex 2)

Thanks to the prompt and efficient sanitary measures applied by the Greek Veterinary Services and the prompt delivery of vaccine by FAO, the emergency situation was quickly brought back to normal and all restrictions applied in the Department of Evros were removed on 10 October 1984.

Turkey The disease position has follwoed the same pattern as in previous years with FMD outbreaks reported in Anatolia while Thrace area has continued to remain disease-free since 1978. In Anatolia both virus A_{22} and O_1 were present during 1983 and 1984 and outbreaks were reported in cattle, sheep, and goats (Annex 1). Considereing that the number of outbreaks reported in Turkey is based at village level, this increases considerably the number of animals affected or involved in an outbreak. Vaccination programmes for FMD prophylaxis and control were carried out during the reported period with vaccine produced at the Ankara

FMD Institute where production is continuing at the capacity permitted by the existing laboratory facilities. The amount of vaccine produced in 1984, was on average 7 000 000 doses of monovalent vaccine of O_1 and A_{22} type and 6 000 000 doses of ASIA-1 type.

Bivalent O/A_{22} vaccine was used for the implementation of the vaccination campaigns in Thrace in addition to the vaccine supplied by FAO, (450 000 doses O/A_{22} vaccine) in the eastern and southeastern boundary regions in Anatolia, and for ring vaccination in affected areas. The ASIA-1 type vaccine has been used to carry out prophylactic vaccination at the border with Iran and in the Thrace buffer zone area because of the risk the presence of ASIA-1 virus represents in the Near east region and especially in Iran. (300 000 doses of ASIA-1 vaccine supplied by FAO in April 1984 as emergency assistance). (See Agenda Item 2.2). The new FMD vaccine plant in Ankara is now nearing completion and has a produciton capacity of over 40 million doses of monovalent vaccine; and it is expected to be operational in 1985. (See attached Minutes of Meeting in Ankara on 28 January 1985). Its establishment has been made possible thanks to the collaboration established with the FMD Institute in Brescia, Italy, and the financial assistance granted by EEC. This will permit Turkey to meet the national need for vaccine and to carry on the campaign in Thrace (Turkish side) with locally produced vaccine. This was also the objective of the assistance given to Turkey by the Commission and by FAO since 1969, and that provided by EEC at present.

U.S.S.R. The information received from the Main Veterinary Department of the U.S.S.R. Ministry of Agriculture, shows that U.S.S.R. enjoyed a favourable disease situation during 1983-1984. FMD outbreaks types O_1 and A_{22} were reported in Georgia, Armenia, Azerbajan and the southeastern provinces during 1983. In 1984 a total of 6 outbreaks of A_{22} type were reported, 4 in Armenia involving 307 cattle and 2 in Georgia involving 146 cattle.

Vaccination coverage of cattle, sheep and pigs was largely extended during the reporting period. (See Annex 1). Information on the FMD position in the U.S.S.R. has been provided regularly to the Commission by the Main Veterinary Department. It is hoped that scientific collaboration in the field of FMD virus strains isolated in Europe and in the U.S.S.R. and in other matters of common interest can be improved.

Italy After three years freedom from the disease, (last outbreak 1981), Italy has suffered a serious and widespread epizootic of FMD, A_5 virus type. The first outbreaks occurred on 26/11/84 on a cattle farm in the village of San Prospero in Modena Province. The herd comprised 22 cows, 1 bull, 14 calves, and 11 cattle, out of which only 1 of the cattle and 1 bull were affected. After the primary outbreak, the disease spread rapidly in the Province of Modena and to the adjacent Provinces of Reggio Emilia and Bologna. Thereafter the disease spread to the Provinces of Cuneo (Piemonte), Brescia, Cremona, Mantova (Lombardy) and suddenly it appeared quite a distance from the primary outbreaks causing isolated outbreaks in the Provinces of Perugia (Umbria), Salerno (Campania), Ragusa (Sicily) and Rieti (Lazio). The most affected Provinces were Modena, Brescia and Cuneo while only a few or isolated outbreaks occurred in the other Provinces where the disease was reported. Details of the outbreaks reported in Italy by Province and in chronological order of their appearance, number of animals present, infected and slaughtered on the affected premises, are given in the attached Table and Map (Annex 3). As stated by the Director General of Veterinary Services in Italy, sanitary measures and a control policy adequate to the situation were applied in accordance with national and EEC regulations.

The slaughter policy was applied mainly to the clinically infected animals in the affected premises while in a number of cases whole herds were slaughtered. Ring vaccination of all susceptible animals was immediately undertaken in the affected

areas while mass vaccination with trivalent O/A/C vaccine was expedited in the whole country. Disinfection of affected premises was carried out and transport and animal movement from the affected areas was prohibited.

Investigations carried out at the Istituto Zooprofilattico in Brescia showed that the virus responsible for the epizootic was A_5 type. This was confirmed also by the World Reference Laboratory, U.K. Investigations are being extended to blood samples collected from vaccinated cattle and this will be supplemented by immunological trials in cattle.

The disease mainly affected non-vaccinated beef cattle of local breed or imported, and only in a few cases dairy cattle, pluri-vaccinated, were affected. In one case, where cattle, pigs and sheep were on the same premises, only cattle were affected. Only three outbreaks were reported on pig farms, one in Brescia on 18/1/85 and two in the Province of Cuneo on 21/1/85. The appearance of secondary outbreaks in the most affected provinces (Brescia, Cuneo) occurred with a certain lapse of time from the primary outbreaks registered in Modena as well as the isolated outbreaks which occurred in other Provinces some of which were located a long distance away (Perugia, Salerno, Ragusa, and Rieti). From 26/11/84 when the first outbreak was reported in Modena, until 27/1/85 date of the last outbreak in Rieti (Lazio), th disese affected seven Regions (11 Provinces), causing 77 outbreaks of which 74 in cattle and 3 in pigs with 10 550 cattle, 3 353 pigs and 638 sheep and goats involved. The number of animals slaughtered were 1 772 cattle, 3 135 pigs and 631 sheep and goats. Indemnities paid amounted to over two billion Italian lira.

Annex 1

FMD POSITION IN EUROPE 1983-1984
(By country, number of outbreaks and virus type)

COUNTRIES	Jan.	Feb.	March	April	May	June	July	Aug.	Sep.	Oct.	Nov	Dec.
1983												
Denmark	1-O											
Netherlands												4-O
Spain	1-A_5	3-A_5	3-A_5			2-A_5						
Portugal	29-A_5	37-A_5	36-A_5	11-A_5	18-A_5	2-A_5						
U.S.S.R.	2-O	2-O	1-O			1-O					4-A_{22}	4-A_{22}
Turkey:												
Thrace*												
Anatolia	24-O	24-OA_{22}	19-O	29-O_1	31-O_1A_{22}	27-OA_{22}	40-OA_{22}	31-OA_{22}	65-OA_{22}	63-OA_{22}	47-OA_{22}	45-OA_{22}
1984												
Portugal	20-A_5			1-A_5				1-A_5				
Netherlands	1-O_1	1-O_1										
Germany Fed. Rep.						2-A_5				1-O_1		
Greece						2 ASIA-1						
Italy											8-A_5	37-A_5
Turkey:												
Thrace												
Anatolia	59-A_{22} O	46-A_{22} O	56-A_{22} O	49-A_{22} O	43-A_{22} O	37-A_{22} O	38-A_{22} O	26-A_{22} O	18-A_{22} O	20-A_{22}O	20-A_{22}O	26-A_{22}O
U.S.S.R.				1-A22		1-A_{22}	2-A-22		2-A22			
1985												
Italy	37-A_5	32-A5										

* Turkish Thrace no outbreaks reported since 1978;

Annex 2

W.R.L. INFORMATION SHEET No. 37

FMD Type Asia 1 in Greece - 1984

At the end of June, 1984, type Asia 1 was isolated from a herd of grazing cattle in the delta region of Evros in Thrace buffer zone (O.I.E. No. GR 84/3/174).

This is the first time that type Asia 1 FMD has been isolated from Europe, and since the initial typing had been made by the FMD Institute in Athens, subtyping was started immediatley.

This report covers the initial unilateral neutralisation and complement fixation tests. An antiserum is under preparation in guinea pigs using a purified virus preparation .

The strains used in this serology were as follows:-

REFERENCE STRAINS

Pak 1/54	- strain from Pakistan - the first Asia-1 strain described.
India 8/79 (Ind 8/79)	- received in February 1979.
Kampuchea 9/80 (Cam 9/80)	- received in December 1980, from an outbreak in Seim Riep province involving oxen and buffalo.
India 34/81 (Ind 34/81)	- received in June 1981.
Iran 1/73	- material received in June, 1973, from an outbreak in cattle in Teheran, Iran.

FIELD STRAINS

Lebanon 3/83 (Leb 3/83)	- received in November, 1983 from an outbreak in cattle in the village of Kafer Kela, Southern Lebanon. An antiserum had been prepared in guinea pigs using a purified virus preparation.
Lebanon 1/84 (Leb 1/84)	- received in June, 1984 from an outbreak in cattle in the village of Addeissa, Southern Lebanon.
Greece 1/84 (Gre 1/84)	- received June 1984 from an outbreak in cattle in the delta area of Evros Department in Thrace.

'r' values

Viruses sera	Pak 1/54	Ind 8/79	Cam 9/80	Ind 34/81	Iran 73	Leb 3/83	Leb 1/84	Gre 1/84	
Pak 1/54	1.0					"1.0		"1.0	SNT
	1.0					0.70	0.65	0.65	CFT
India 8/79		1.0				0.42		1.00	
		1.0				0.60	0.23	0.49	
Cam 9/80			1.0			0.47		0.69	
			1.0			0.38	0.24	0.50	
India 34/81				1.0		0.41		0.47	
				1.0		0.83	0.24	0.50	
Iran 73					1.0	0.60		0.68	
					1.0	"1.0	"1.0	"1.0	
Leb 3/83	0.40	0.28	0.28	0.20	0.87	1.0		"1.0	
	1.0	0.43	0.25	0.17	0.50	1.0	0.86	1.00	

SNT - results from one test only.

CFT - results from four tests.

Results and Conclusions

An examination of the 'r' values shows:-

1. The strain from Greece in 1984 is very similar to those from Lebanon in 1983 and 1984.

2. They are closely related to Iran 1/73 and Pak 1/54 the earlier strains, and less related to the more recent Asian strains from India and Kampuchea.

3. A vaccine prepared from Iran 1/73 or similar strains should give adequate protection.

A.E.M. ARROWSMITH, A.L. SAMUEL

JULY, 1984

Annex 3

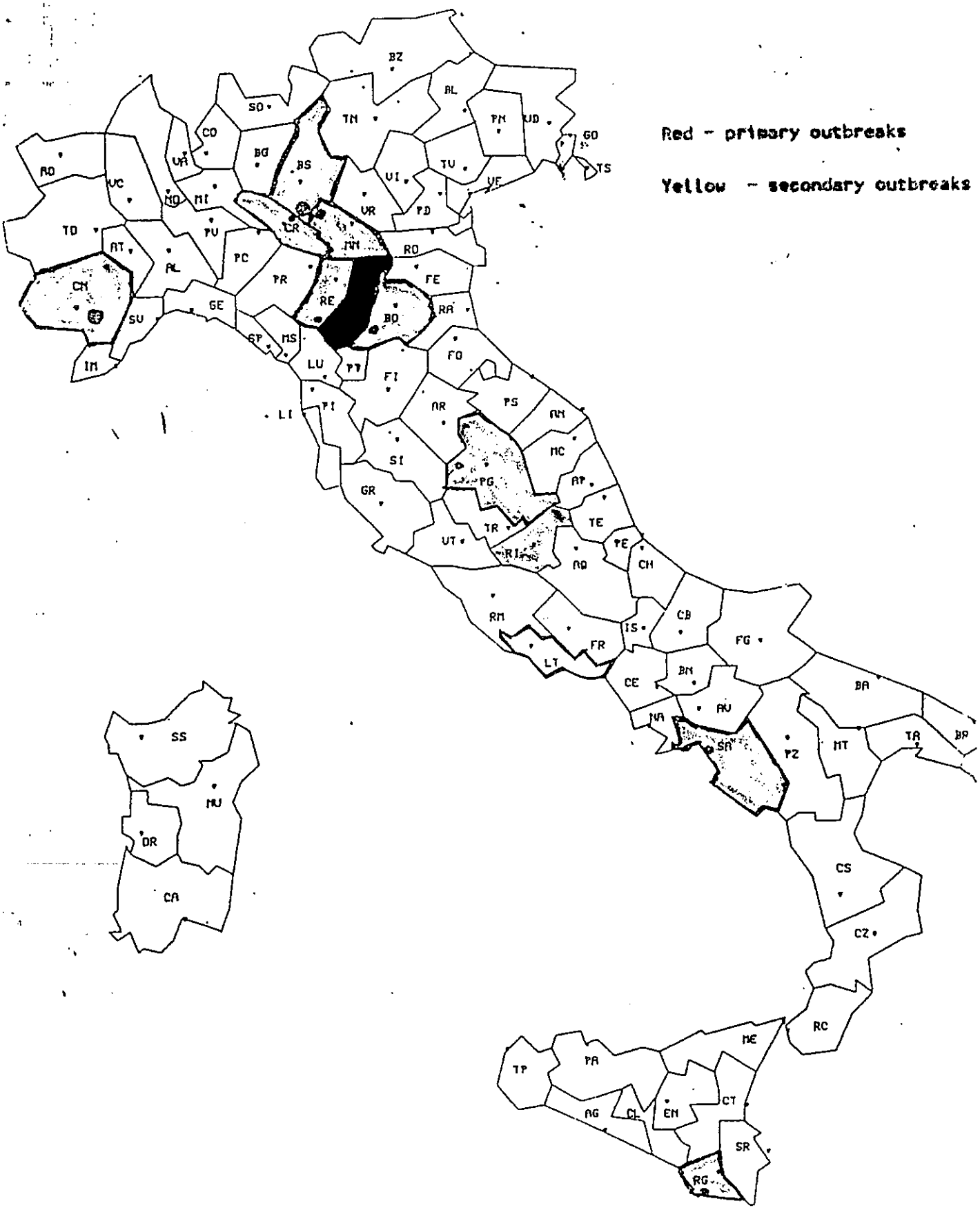
FMD OUTBREAKS IN ITALY DURING 1984-85

Region	No. of outbreaks	Date (fr. to)	Animal present	Animal infected	Animal slaughtered
EMILIA ROMAGNA					
Modena	20	26/11/84 6/12/84	C. 1 597 Sh+G 600	C. 792	C. 792 Sh+G 600
	600 sheep on free pasture slaughtered - not infected				
Reggio Emilia	3	3/12/84 7/12/84	C. 216 Sw. 18	C. 29 --	C. 29* --
	*11 diseased on 19.11.84 and slaughtred				
Bologna	4	5/12/84 14/12/84	C. 1 485	C. 98	C. 98*
	*12 cattle diseased - on 20/21.12.84 were slaughtered				
Total	27		C. 3 298 Sh+G 600	C. 919 ---	C. 919 Sh+G 600

Region	No. of outbreaks	Date (fr. to)	Animal present	Animal infected	Animal slaughtered
UMBRIA					
Perugia	1	18/12/85	C. 8 Sw. 7 Sh. 14	C. 5 Sw. - Sh. -	C. 8 Sw. 7 Sh. 14
LOMBARDIA					
Brescia	32 (1 pig)	23/12/84 17/1/85	C. 6 664 Sw. 1 034 Sh. 3	C. 459 Sw. 133 Sh. --	C. 574 Sw. 834 Sh. --
Cremona	2	9/1/85 14/1/85	C. 292	C. 72	C. 157
Mantova	1	10/1/85	C. 15	C. 1	C. 1
Total	35		C. 6 971	C. 532 Sw. 1 834	C. 732 Sw. 834
CAMPANIA					
Salerno	2	24/12/84	C. 4	C. 2	C. 4

Region	No. of outbreaks	Date (fr. to)	Animal present	Animal infected	Animal slaughtered
PIEMONTE					
Cuneo	10 (8 C + 2 Sw)	30/12/84 20/1/85	C. 529 Sw. 2 294 Sh+G 17	C. 2 Sw. 1 834 --	C. 4 Sw. 2 294 Sh+G 17
SICILIA					
Ragusa	1	15/1/85	C. 39	C. 10	C. 39
LAZIO					
Rieti	1	28/1/85	C. 8	C. 1	C. 8
Total N. of outbreaks reported	77 (74 C+3 Sw)	26/11/84 28/1/85	C. 10 550 Sw 3 353 Sh+G 638	C. 1 472 Sw 1 967 ---	C. 1 772 Sw 3 135 Sh+G 631

FMD EVOLUTION IN ITALY 1984/1985 - PROVINCES AFFECTED



Annex 4

Minutes of the Meeting

Ankara, 28 January 1985

A meeting was held at the Office of the Director General of Protection and Control of the Ministry of Agriculture, Forestry and Rural Affairs, on the occasion of the visit of Prof. A. Rojahn, Chairman of the FAO European Commission for the Control of Foot-and-Mouth Disease, and Dr. P. Stouraitis, Secretary of the Commission.

At the meeting, the FMD situation in Turkey and the Near East Region was reviewed and discussed.

Special reference was made to vaccine production at the new vaccine plant in Ankara FMD Institute in relation to the national disease control policy and the maintenance of the buffer zone in Southeastern Europe (Thrace area on the Turkish side).

Following discussion, the participants in the Meeting agreed that:

1) It is planned to complete the new Institute and make it operational by the middle of 1985. Experimental vaccine production will start after this and it is expected that vaccine production will continue in a normal way and without any problem. The vaccine required for the next vaccination campaign in the buffer zone in Thrace area will be provided through local production. In this case, no vaccine would be required from FAO as in the past.

2) The staffing of the FMD Institue is adequate and is in a position to carry out the work related to all the activities of the institute especially handling any type of FMD virus including

new types threatening the country. If there is any need for additional staff or budget it will be requested from the Ministry in order to ensure the production.

3) Considering the necessity to continue vaccine production, the Commission is prepared to assist the Institute to solve urgent problems which may arise in the production (i.e. consultant, training or some supplies). However, the FAO Permanent Representative pointed out that UNDP/FAO project should be considered by the Government for the purpose of assisting the new institute in consolidating and achieving its objectives.

4) The present target of FMD vaccine production is 40 million doses of monovalent vaccine. This should be increased to 90 million doses which is the maximum production capacity of the Institute.

5) If vaccine production continues regularly as planned it is expected that routine vaccination coverage will be extended to all the cattle population in Thrace and Anatolia with the objective of controlling and possibly eradicating the disease from the country.

6) In 1985, the vaccination campaign in the buffer zone will be implemented with trivalent vaccine A_{22}/ASIA-1/0, 500 000 doses provided through FAO and in addition 600 000 doses of the same type produced locally. This will permit coverage of the Thrace and Marmara region.

Provisional Agenda Item 2.1

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

Forty-seventh Session of the Executive Committee

The Hague, Netherlands, 5-8 March 1985

FMD prophylaxis in Europe, 1983-1984

FMD prophylaxis in Europe during the period which has elapsed since the Twenty-fifth Session of the Commission in April 1983, has followed the same pattern as previously. A general vaccination programme has been implemented in Belgium, France, the Federal Republic of Germany, Italy, Luxembourg, Malta, the Netherlands, Portugal, Spain and Switzerland. A general vaccination programme has also been carried out in Czechoslovakia, the German Democratic Republic and in the USSR, while in Bulgria, Greece (buffer zone in Thrace), Cyprus (south part), Hungary, Romania and Turkey, only area vaccination has been carried out (Appendix I).

In the remainder of Europe prophylactic vaccination is no longer practised; prophylaxis is based on the sanitary measures and animal movement control regulations in force in each country.

The favourable disease situation established in the greater part of Europe and the consequent general tendency to relax the security measures may compromise the stability of the disease control system established so far and at the same time the capacity of the national authorities to face an emergency FMD situation may be reduced. Disease security measures have proved

to be effective in countries where national emergency plans for FMD outbreaks have been established and function when an emergency arises. The survey carried out by the Commission shows that only a few countries dispose of an effective emergency plan to face FMD outbreaks especially of an exotic type (Report of the Executive Committee, Bonn, 1984). In the case of an FMD outbreak of an exotic virus type the vaccine would have to be imported from abroad until an homologous vaccine could be produced by the national laboratory concerned. In addition only a few countries dispose of a reserve of vaccine of conventional types for emergency situations. In the countries where vaccine production facilities do not exist supplies are entirely dependent on foreign production. The recent FMD outbreaks which occurred in Europe in vaccinating and/or non-vaccinating countries are clear evidence that the prophylactic system in Europe is so fragile that it can break down at any time considering that the entire pig and small ruminant population remains unprotected and control of animal movement and traffic is insufficient especially at the points of entry into Europe. Events over the last few years in Europe show that complacency with regard to the FMD situation is dangerous and countries should continue to be alert to the insidiousness of the disease. National prophylactic programmes should in practice be implemented according to the rules existing in each country and the epizootiological situation in neighbouring countries of regions. This policy should be strictly applied especially in importing countries. To ensure efficient disease control and prophylaxis it is essential that national prophylactic requirements and plans for emergency action to cope with FMD outbreaks be reviewed and updated regularly.

The Executive Committee at its Forty-sixth Session held in April 1984, in Bonn, Federal Republic of Germany, recognized that the present prophylactic policy might not be optimal; protection experiments using field virus might clear up this point. The real danger might not be the classical European FMD virus strains but rather strains for which the present vaccination policy may

not be fully effective. The Committee agreed that the present policy should continue until the results of the cost-benefit study on prophylactic vaccination are known.

Europe, considering its relatively limited size, the density of its livestock population, and the inter-trade activities in this sector, should be considered as one epizootiological unit. This would permint European countries to adopt a common prophylactic system. The FMD control policies of EEC and non-EEC countries and of the CMEA (Council for Mutual Economic Assistance) countries should be considered jointly in order that FMD prophylactic programmes in Europe can be based on the use of the appropriate vaccine and in order to harmonize their implementation.

FMD PROPHYLAXIS IN EUROPE DURING 1983 AND 1984

Country	VACCINATION PROGRAMMES			VACCINES	
	Species vaccinated	Period of vaccination	Territory covered by vaccination	Valencies Cattle dose/cost	Potency required and results
Netherlands	All cattle above four months OAC vaccines 1983 Cattle: 4 200 000 1984	From 1st Dec. to 1st March Emergency vaccination Noord-oost and Flevoland Polders of cattle 2-4 months and sheep, goats and pigs. Same in Noord Holland Province	The entire country since 1953	Triv. $O_1/A_{10}/C$ (Frenkel) Vaccine plus injections: D. Fl. 4.5 (1) (5 cc)	At least 5 cattle PD_{50}. Resistance to generalization after intradermolingual challenge with 10 000 cattle PD_{50}. PD_{50} are calculated from three groups of 5 cattle
Belgium	All cattle above three months of age. The maximal interval between 2 consecutive vaccinations is 13 months. 1983 Cattle: 2 200 000 1984 Cattle: 2 200 000	From 1 Dec. to to 31 March	the entire country since 1962	Triv. OAC ($O_1/A_5/C_2$) cattle: 5 cc sheep : 2 cc 25 B. Fr. (1)	More than 5 cattle PD_{50} the challenge being 10 000 ID_{50} intradermolingually.

Note: (1) vaccine and vaccination costs borne by owner

Country	VACCINATION PROGRAMMES			VACCINES	
	Species vaccinated	Period of vaccination	Territory covered by vaccination	Valencies Cattle dose/cost	Potency required and results
Luxembourg	All cattle above two months of age 1983 Cattle: 195 000 1984 Cattle: 195 000	From 1 Dec. to 31 January.	the entire country since 1966	Trivalent OAC ($O_1/A_5/C_2$) Cattle 5 cc Price 17 B. Fr. (1)	More than 5 cattle PD_{50} challenge being 10 000 ID_{50} intradermolingually.
France	A. All cattle above 6 months B. All sheep and goats above 3 months 1983 Cattle: 20 000 000 Sheep and goats: 700 000 1984 Cattle: 20 000 000 Sheep and goats: 650 000	All year round but mainly from Nov. to May Before transhumance	A. The entire country since 1962 B. The frontier departments of the Pyrennees	Trivalent OAC (A Allier 1960 O Lausanne 1965 C Vosges 1960) Cattle 5 cc Sheep 2 cc Price: (triv. dose) 4.30 F.F. (Frankel) 3.80 F.F. (B.H.K.)	Principle: 85% protection rate in cattle against generalization by intradermolingual challenge Methods and minimums Index K (Lucam) = 1.2 Index C = 10^2 Index S = 10^1 Vaccine produced in France controlled by the L.N.P., Lyons

Note: (1) vaccine free of charge; vaccination cost 17 B.Fr. shared by the state (7 B.Fr.)and the owner (10 B. Fr.)
(2) vaccination of cattle: all expenditure borne by the owner

Country	VACCINATION PROGRAMMES			VACCINES	
	Species vaccinated	Period of vaccination	Territory covered by vaccination	Valencies Cattle dose/cost	Potency required and results
Switzerland	All cattle born before 1 Jan. 1983 Cattle: 1 600 000 1984 Cattle: 1 635 140	From 15 Feb. to 15 May	The entire country since 1966	Trivalent OAC cost of vaccine SF. 1.6 (1) cost of injection SF. 1.7	Vaccines almost entirely imported from France
Federal Rebublic of Germany	All cattle above four months 1983 - 1984 Same policy	Late in winter before going to pasture	The entire country since 1965	Trivalent OAC ($O_1/A_5/C$) Dose: 5 cc Cost: DM 3.- (2)	Three cattle per type are challenged by rubbing a virus suspension on the tongue. No generalization admitted.
Democratic Republic of Germany	All cattle above 5 months 1983 -1984 Same policy	From 1 Oct. to 31 Dec.	The entire country since 1950	Trivalent OAC Dose 5 ml	

(1) vaccine and injection (total cost: S.Fr. 3.30) free of charge to owner
(2) in some "Lander vaccination is free of charge, in others the owner is charged 50% of cost
(3) cost of vaccine and injection free of charge to owner

Country	VACCINATION PROGRAMMES			VACCINES	
	Species vaccinated	Period of vaccination	Territory covered by vaccination	Valencies Cattle dose/cost	Potency required and results
Portugal	C: above 3 months Seep and goats: above 2 months Pigs: above 2 months 1983 Cattle : 1 073 832 Swine : 236 789 Sheep and goats: 39 838 1984 Cattle : 718 420 Swine : 221 980 Sheep and goats: 1 935	Once a year	The entire country	Trivalent OAC	PD_{50} according suitable international Code. Good results.
Italy	A. All cattle above 3 months B. Cattle, sheep and goats sent to alpine pastures 1983 Cattle: 9 000 000 Sheep and goats: 2 800 000 1984 Cattle: 9 000 000 Sheep : 1 200 000	From 1 October to 31 January Emergency vaccination in affected provinces of all susceptible animals.	The entire country since 1968 Sheep and goats: the entire territory of Sicily	Trivalent OAC ($O_1/A_5/C$) (1) 5 cc Cost: Lit. 520 per Triv. dose	8 PD_{50} measured on cattle (3 groups of 5 cattle per valence - dilution 1:1; 1:4; 1:16 in buffer)

Note: (1) vaccine and vaccination programme paid by Government

* for administrative reasons vaccination programme finished in Spring 1982

Country	VACCINATION PROGRAMMES			VACCINES	
	Species vaccinated	Period of vaccination	Territory covered by vaccination	Valencies Cattle dose/cost	Potency required and results
Spain	A. All cattle above 4 months. Sheep and goats destined for transport. B. Swine: compulsory for breeding stock. In case of outbreak all pigs. Radius 25 Km outbreak 1983 Cattle: 4 500 000 Sheep: 10 000 000 Swine: 3 000 000 1984 Cattle and sheep: 7 900 000 Swine: 5 300 000	A. Spring (and autumn) in border provinces. B. Twice yearly for breeding animals.	The entire country 25 Km around outbreaks	A. Trivalent OAC 20 Pst. per dose (1) B. Two types in use: DEAE and oil vaccines 40 Pst. per dose. Monovalent C oil vaccine 16 Pst. Trivalent OAC cattle, sheep Trivalent OAC swine	Potency testing based on the cattle PD_{50} determination has been started, as reference. Routine: 2 vaccinated animals are challenged against field strains; both must remain protected. Results: very successful in pigs.

Note: (1) 50% of the cost of vaccine free of charge; vaccination paid by owner (in case of compulsory vaccination only).

Country	VACCINATION PROGRAMMES			VACCINES	
	Species vaccinated	Period of vaccination	Territory covered by vaccination	Valencies Cattle dose/cost	Potency required and results
U.S.S.R.	Cattle above 4 months. Sheep and goats above 1 month, pigs above 2 months 1983 Cattle: 140 522 149 Sheep : 49 133 218 Swine : 2 850 585 1984 Cattle: 137 815 600 Sheep : 66 554 500 Bovine: 2 295 300	Early Spring and Autumn	Republic of Transcaucasus Kazakhstan, Middle Asia with bordering regions of RSFSR and Ukraine Same policy	Mainly monovalent and trivalent vaccines. Cattle dose: 5 cc monovalent: 9 Kopecks trivalent 27 Kopecks	Required duration of immunity: 6 months
Hungary	Cattle and sheep above 2 months of age. Pigs not vaccinated. 1983 Cattle: 477 000 Sheep : 1 080 000 1984 Cattle: 482 000 Sheep : 995 000	Two programmes: Spring and Autumn	Eastern border provinces	Trivalent OAC (1) Cattle dose: 5cc sheep dose : 3cc	Vaccination free of charge

Note: Vaccine and vaccination free of charge to owner (1)

Country	VACCINATION PROGRAMMES			VACCINES	
	Secies vaccinated	Period of vaccination	Territory covered by vaccinaiton	Valencies Cattle dose/cost	Potency required and results
Czechoslovakia	A. All cattle above 3 months Adult sheep, goats and pigs 1983 Cattle: 4 900 000 Sheep : 750 000 Goats : 4 000 Pigs : 1 000 000 1984 Cattle: 3 800 000 Sheep : 175 000 Goats : 2 000 Pigs : 900 000	During the whole year	The enitre country	Trivalent OAC	Five cattle per type are challenged by rubbing a virus suspension on the tongue. One generalization tolerated.
Denmark	Total prohibition of vaccination as of 1 January 1977				
Austria	Cattle, sheep, goats and pigs 1983 Cattle: 90 000 Sheep and goats: 4 000 1984 Cattle: 91 000 Sheep and goats: 4 000	A. Autumn B. Spring C. Animals for export as required	Around the FMD Institue (Vienna) Animals to be sent to mountain pastures.	OAC Cattle 10 ml Sheep 5 ml 15 A. Schill. (1)	3 cattle vaccinated with 2 ml of monovalent vaccine are challenged intradermolingually with 10 000 ID_{50}. Maximum number of generalizations admitted 2.

Note: (1) vaccine and vaccination free of charge to owner

Country	VACCINATION PROGRAMMES			VACCINES	
	Species vaccinated	Period of vaccination	Territory covered by vaccination	Valencies Cattle dose/cost	Potency required and results
Turkey	Cattle, buffaloes, sheep and goats above 4 months of age 1983 Cattle: 2 052 433 Sheep : 3 176 360 Pigs : 650 1984 Same policy	March-May in buffer zones Ring vaccination all year round. Autumn - young stock in Thrace buffer zones Emergency prophylactic vaccination with ASIA-1 vaccine	A. Turkish Thrace including Istanbul and Celibolu B. Frontier areas in eastern and southern Anatolia C. State and dairy farms, feedlots and other exposed areas	O_1/A_{22} in 198	9 cattle per batch (3 cattle per type are challenged intradermolingually; 6 controls).
Greece	Cattle, sheep and goats above 3 months of age 1983 Cattle: 14 955 Sheep and goats: 41 744 1984 Cattle: 16 000 Sheep and goats: 45 000	Spring campaigns June-July 1984 Emergemcy vaccination in buffer zone area with ASIA-1 vaccine of all susceptible animals: 39 434 cattle, 118 012 sheep, 20 076 pigs	Frontier areas in Greek Thrace	Bivalent O_1/A_{22} provided through FAO Monovalent ASIA-1 provided through FAO	Potency evaluated on guinea pigs, the protection dose being above 0.3 ml. (monovalent cattle dose: 3 ml.) Vaccine production in FMD Lab. Athens. Conventional European strains. Stock reserve.

Country	VACCINATION PROGRAMMES			VACCINES	
	Species vaccinated	Period of vaccination	Territory covered by vaccination	Valencies Cattle dose/cost	Potency required and results
Bulgaria	Cattle and sheep above 3 months 1983 Cattle: 183 000 1984 Cattle: 200 000	Spring Emergency vaccination with ASIA-1 along frontiers with Greece and Turkey	30 Km buffer zone along frontiers with Turkey and Greece and at frontier posts.	Biv. O_1/A_{22} (FAO vacc.) of border areas with Turkey.	100% protection against generalization in 4 cattle intradermolingual challenge with 10 000 ID_{50} Seroneutralization index above 3.
Romania	Cattle and sheep above 6 months 1983 Cattle: 1 264 000 Sheep : 528 000 Pigs : 20 300 1984 Cattle: 1 320 000 Sheep : 583 000	Twice a year (6 months interval); young cattle are revaccinated after 15-21 days	Frontier districts in the West. Frontier areas in the South and Southeast. Around sea and river ports and international airports	Monovalent vaccines produced against O_1, C, A_5. Cost per dose 4.32 lei.	The ordinary monovalent dose must contain 8 cattle PD_{50}.

Country	VACCINATION PROGRAMMES			VACCINES	
	Species vaccinated	Period of vaccination	Territory covered by vaccination	Valencies Cattle dose/cost	Potency required and results
Yugoslavia	Cattle for export above 7 months 1983 Cattle: 52 075 1984 Cattle: 84 261	All the year round		Trivalent OAC 5 ml doses	
Cyprus	All cattle above 6 months. Sheep and goats above 3 months 1983 Cattle: 12 631 Sheep : 145 307 Goats : 149 249 1984 Cattle: 18 279 Sheep : 302 362 Goats : 111 670	Early spring and autumn	Entire coountry in South	Trivalent O_1, A_{22}, and ASIA-1 Monovalent A_{22} and ASIA-1	
Malta	Cattle, sheep and goats. 1983 Cattle: 10 777 Sheep : 334 Goats : 3 698	Winter and Spring 1984 11 799 390 4 431	Double vaccinaiton entire country in 1978/79; entire country since	OAC vaccine (Italy)	

Provisional Agenda Item 2.2.

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

Forty-seventh Session of the Executive Committee

The Hague, Netherlands, 5-8 March 1985

Vaccination campaigns in south-eastern Europe

The annual vaccination campaigns in south-eastern Europe were continued in the buffer zone in Thrace in 1983 and in 1984. According to reports from the countries concerned, the frontier areas of Turkey, Greece and Bulgaria were given vaccination coverage during April/May. Bivalent FMD vaccine A22/O1 was supplied by FAO to the three countries concerned with funds provided from EEC and non-EEC countries. The total amount of vaccine supplied for the 1983 and 1984 campaigns was: Turkey, 800 000 doses; Bulgaria, 500 000 doses, and Greece 100 000 doses. The vaccine was supplied through Rhône-Mérieux (Teheran production) at a cost of US$ 700 000.

In view of the epizootiological situation in the Near East region where FMD outbreaks of ASIA-1 type virus are widespread, and the emergency situation created by the occurrence of FMD ASIA-1 type outbreaks in Greece, in the Delta area of Evros Thrace buffer zone, in June 1984, the FAO/EEC/OIE Tripartite Group on FMD at the meeting held in Vienna on 26 September 1984, (on the occasion of the XIth Conference of the OIE Regional Commission for Europe) recommended that ASIA-1 type vaccine be included in the spring vaccination campaigns in the buffer zone for 1985 (A22/O1/ASIA-1 trivalent vaccine) in Greece, Turkey and Bulgaria. Following this recommendation, and taking into account

the request of the countries concerned, arrangements were made for the supply of 810 000 doses of Ass/O1/ASIA-1 trivalent vaccine for the spring vaccination campaigns in 1985 through Rhône Mérieux (Teheran production) at a cost of US$ 486 000. (Cost met through TF's 9097 and 9111). The vaccine was supplied in February to the three countries concerned in order that vaccination in the buffer zone could be carried out simultaneously (Turkey, 500 000 doses, Bulgaria 250 000 doses and Greece 60 000 doses). In addition Turkey will provide 600 000 doses of locally produced A22/O/ASIA-1 vaccine to complement the vaccinaiton coverage in Thrace.

Emergency assistance - ASIA-1 vaccine

Turkey During the visit of the Secretary to Iran in October 1983, the FMD situation was reviewed, and the Veterinary Authorities informed him that ASIA-1 type outbreaks were widespread in Iran at the border with Turkey (West Azerbaijan). The Turkish Government was immediately informed of the risk this represented, considering the previous experience with ASIA-1 outbreaks in Turkey in 1973. The Turkish Government requested assistance from FAO for the provision of 500 000 doses of ASIA-1 vaccine to complete vaccination coverage along the border with Iran. Following consultation with the Chairman of the Commission, it was agreed that the assistance requested by the Turkish Government should be provided but due to the limited availability of funds only 300 000 doses of vaccine were supplied by Rhône Mérieux (Teheran production) at cost of US$ 70 000. The cost was met from TF 9097 (non-EEC).

Greece The occurrence of FMD outbreaks of ASIA-1 type in Greece on 20 June 1984 created an emergency situation not only in Greece but in all of south-eastern Europe. FAO took action immediately and a supply of 50 000 doses of ASIA-1 vaccine was airfreighted to Greece on 23 June and 75 000 doses of the same type on 6 July 1984. The total amount of ASIA-1 vaccine furnished to Greece was

125 000 doses and the expenditure incurred was met through Trust Fund 9111 (EEC). This prompt action was possible due to the arrangements made by the Commission to hold a stock of ASIA-1 vaccine at Rhone Mérieux laboratories in France for immediate delivery in case of emergency. These arrangements were made as a follow-up to the recommendation made at the Forty-sixth Session of the Exeuctive Committee held in Bonn in April 1984 and that of the FAO/ECC/OIE Tripartite meeting held in Paris during the Fifty-Second OIE General Session in May 1984.

Bulgaria The emergency situation in Greece alerted the neighbouring country, Bulgaria, and action was taken by FAO and the Commission to assist Bulgaria to establish vaccination coverage in the buffer zone area bordering with Greece and Turkey and also to extend the protection barrier against ASIA-1 virus in order to cover the whole area of the buffer zone. (Turkey had already vaccinated). Arrangements were made for the immediate delivery of 150 000 doses of ASIA-1 vaccine which arrived in Sofia on 23 June 1984 and at the request of the Government of Bulgaria an additional 280 000 doses were supplied on 6 July 1984.

Difficulties were encountred in obtaining the second delivery from sources outside of Europe and the matter was discussed by the FAO/EEC/OIE Tripartite Group on 28 June 1984 in Budapest during the Ad hoc Consultation on the Improvement of Animal Health Coordination in the European Region. The Group concluded that if the 280 000 doses of ASIA-1 FMD vaccine requested by Bulgaria was not immediately available from producers outside of Europe it should be obtained from Wellcome U.K. immediatley as an exceptional emergency arrangement without making this a precedent. The Secretary of the Commission was instructed by cable to act accordingly. The cost of these deliveries (430 000 doses US$ 95 219) was met from TF's 9111 (EEC) and 9097 (non-EEC).

Turkey informed fao and the commission that, the veterinary authorities alerted by the information regarding the presence of ASIA-1 type FMD in the Near East, especially Iran and Lebanon, had already undertaken vaccination with ASIA-1 type vaccine in the buffer zone area in February 1984, before the outbreaks in Greece, and consequently it felt that was not necessary to revaccinate in the same area. Therefore no vaccine was requested by the Government. ASIA-1 vaccine has been produced at the Ankara FMD Institute since 1983.

Turkey officially declared that the Thrace area had remained free from FMD since 1978 while in Anatolia only FMD types O1 and A22 had been recorded. The last outbreak of ASIA-1 virus type had been recorded in Turkey in 1973.

Provision for the maintenance of the buffer zone in south-eastern Europe

At the Twenty-fifth Session of the Commission in April 1983 it was agreed that the vaccination campaigns be continued in the buffer zone in Thrace beyond 1984 if Turkey was not in a position to continue the campaigns with locally produced vaccine. It was recommended that continuation of the campaigns be reviewed again in 1985 at the Twenty-sixth Session. The Tripartite Group FAO/EEC/OIE endorsed this recommendation at the meeting held in Brussels on 16 September 1983. In view of the delay reported in the completion of the FMD Institute in Ankara, which is not expected to become fully operational before 1986, the Forty-sixth Session of the Executive Committee held in Bonn in April 1984, recommended that the maintenance of the buffer zone in Thrace be continued beyond 1986. The Committee agreed that additional funding would be necessary to ensure the continuation of the campaigns.

This recommendation was endorsed by the FAO/EEC/OIE Tripartite Group at a meeting held in Paris on 23 May 1984 on the

occasion of the Fifty-second OIE General Session. At this meeting the question of emergency supply of exotic vaccines was discussed. The Group was of the opinion that FAO should be authorized to supply such vaccine independently of the place of production on condition that the quality of such vaccine conforms with international standards. In view of the EEC rules in this respect, the Group requested the EEC delegate to discuss this matter at the Permanent Veterinary Committee of the EEC and inform FAO of the outcome.

Based on the foregoing, the Director-General of FAO launched an appeal in July 1984 to the EEC and non-EEC countries for additional funding for the vaccination campaigns. The total amount requested was US$ 998 052 from EEC countries and US$ 239 448 from non-EEC countries. This would have covered vaccination with bivalent vaccine (O1/A22) for the period recommended by the Commission i.e. beyond 1986.

At the Ad hoc meeting of the FAO/EEC/OIE Tripartite Group on FMD held in Vienna on 26 September 1984, on the occasion of the XIth Conference of the OIE Regional Commission for Europe, the Group in reviewing the FMD situation in south-eastern Europe and the Near East and the emergency situation created by the outbreak of FMD type ASIA-1 virus in the Greek buffer zone, recommended, firstly, that ASIA-1 type vaccine should be included in the spring vaccination campaigns in the buffer zone in 1985 (A22/O1/ASIA-1 trivalent vaccine - Greece, Turkey and Bulgaria), secondly, that consideration be given to the inclusion of other FMD virus types in the vaccination campaigns during the following years since the pattern of FMD virus types is changing frequently in the Near East region. In view of this it was recommended that sufficient funds be made available to FAO to permit the inclusion of other virus types in the vaccine to be supplied to any country facing an emergency or for prophylactic vaccination in the buffer zone during 1985/87. It is hoped that during this period Turkey will be self-sufficient in vaccine and will be in a position to

take full responsibility for the maintenance of the buffer zone on the Turkish side.

Following the above, on 12 October 1984 FAO again approached the EEC to seek an increase in the funding requested under cover of the Director-General's letter of 31 July 1984 i.e. US$ 596 883 instead of the amount of US$ 998 052 originally requested.

The accounts*** of the relevant Trust Funds (TF 9111 and TF 9097) are attached to this document.

(*** to be presented at the meeting)

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

Statement of income/account for Trust Funds 9111 (EEC) and 9097 (non-EEC) 1983/1984 (Provisional)

TF 9111

1983 Income		Expenditure	
Bal. 1/1/83	US$ 49 158	Provision of Bivalent A22/01 FMD vaccine - 700 000 doses (Turkey 400 000, Bulgaria 250,000 Greece 50 000)	US$ 350 000
EEC Deposits	314 572		
EEC Deposits	486 384		
Interest credited (1983)	37 584	Reimbursement to TF 9097 for expenditure incurred in 1982	163 000
		Commission publication charges in excess of Regular Programme allocation	437
		Project Servicing Costs	26
	US$ 887 698		US$ 513 463
1984 Bal. 1/1/84	US$ 374 235	Provision of bivalent A22/01 FMD vaccine - 700 000 doses (Turkey 400 000, Bulgaria 250,000 Greece 50 000)	US$ 350 000
EEC Deposits	25 000		
(reimbursement for vaccine provided for Greek buffer zone)		Inactivated FMD vaccine (ASIA-1) 200 000 doses (Bulgaria 150 000, Greece 50 000) June 1984 Total commitment US$ 47 619*	
Interest credited (1984)	6 133	Paid in 1984	11 364
	US$ 405 368		
Income due		Inactivated FMD vaccine (ASIA-1) 50 000 doses to Greece July 1984	11 429
Reimbursement from EEC for vaccine supplied to Greece			
- Campaigns 1984 50 000 doses A22/01	25 000	Inactivated FMD vaccine (ASIA-1) 25 000 doses to Greece July 1984	5 682
- Emergency supply 125 000 doses ASIA-1	28 500	Travel - Secretary to Greece to advise on emergency FMD situation	798
		Project servicing costs	48
			US$ 379 321
		* Outstanding payment	36 255
	US$ 458 868		US$ 415 576
BALANCE	US$ 43 292		

1985 Funds committed for vaccination campaigns US$ 30 000
Balance TF 1/2/85 US$ 13 292

TF 9097

1983

Income		Expenditure	
Bal. 1/1/83	US$ 261 836	Travel - Secretary/Chairman to Poland, Romania and Cezechoslovakia. Secretary to Netherlands to conduct Session Research Group (part charge only)	US$ 2 930
Finland	14 956		
Sweden	9 555		
Switzerland	19 540		
Yugoslavia	16 623		
		Project servicing costs	176
Interest accrued (1983)	34 697		
Reimbursement from TF 9111 for exp. incurred for vaccine supplies in 1982	163 000		
	520 207		3 106

1984

Bal. 1/1/84	US$ 517 101	280 000 doses inactivated FMD vaccine (ASIA-1) to Bulgaria, July 1984	47 600
Sweden (representing bal. on outstanding amount appeal 1982)	9 555	300 000 doses inactivated FMD vaccine (ASIA-1) to Turkey, April 1984	73 171
Yugoslavia	16 625		
		Travel - carryover from 1983, travel of Sec. to Brasil (discussions with PAHO - 50 percent from RP), rep. Comm. by Prof. Ahl, Tubingen, at OIE FMD Commission meeting Nov. 84 (Paris)	2 615
Interest accrued (1984)	21 358		
		Project servicing costs	157
	US$ 564 639		US$ 123 543
BALANCE	US$ 441 096		

1985

BALANCE:	US$ 441 096		
Funds received from Austria Jan. 1985	30 555	Funds committed for vaccination campaigns	US$ 456 000
	US$ 471 651		US$ 456 000

BALANCE TF 9097 1/2/85 US$ 15 651

FMD VACCINATION CAMPAIGNS IN SOUTHEASTERN EUROPE TFs 9111/9097

Response to Director General's Appeal dated 31 July 1984 to EEC and non-EEC countries

Position at 1.2.1985

	Requested	Received
EEC		
(DG letter dated 31.7.84 As recommended by EEC FAO/ OIE Trip. Group at meeting held Vienna 26.9.84 amount requested increased - DG cable of 12.10.84)	US$ 998 052	
Total amount requested from EEC	US$ 1 596 883	
BALANCE TF 9111 at 1.2.85	US$ 13 292 (provisional accounts)	

	US$	US$
non-EEC Total amount requested	239 448	
Austria	30 555	30 555
Finland	21 600	no reply to date
Hungary	22 800	pledged by letter dated 26.10.84
Norway	11 700	no reply to date
Portugal	10 800	negative reply 8.11.84
Sweden	23 184	no reply to date
Yugoslavia	38 385	no reply to date
Bulgaria	21 396	no reply to date
Switzerland	23 028	no reply to date
Spain	36 000	no reply to date

BALANCE TF 9097 at 1.2.85 US$ 15 651 (provisional accounts)

Provisional Agenda Item 2.3

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

Forty-seventh Session of the Executive Committee
The Hague, Netherlands, 5-8 March 1985

FMD position in other regions and particularly in countries exporting to Europe

Near East and North Africa

The FMD situation in the Near East region deteriorated during 1983/1984 with several outbreaks of types O/A22/ASIA-1 and C reported in most countries. Due to the uncontrolled importation of animals from infected countries, the pattern of FMD distribution and development in the Near East is subject to frequent changes with conventional indigenous FMD virus strains alternating with new strains which have frequently spread throughout the region creating a serious menace for Europe. Turkey and Greece have also been involved and serious and concerted national and international efforts have been made to control the waves of exotic virus attacks (SAT-1, A22, ASIA-1). This threat is still present together with the possibility of further invasions following the steadily deteriorating FMD position in the Near East region.

Morocco After two years freedom from FMD, in 1983 serious outbreaks of type A5 were recorded in several areas throughout the country. A mass vaccination campaign was carried out initially with A/Morocco/77 vaccine and later with type A5 vaccine. The Government imported more than 2 000 000 doses of FMD monovalent type A5 vaccine. In addition, 1 500 000 doses of

A5 vaccine was provided by FAO through a TCP project. Thanks to a mass vaccination campaign and the application of strict sanitary measures Morocco succeeded in bringing the disease under control and the last outbreaks of type A5 were reported in November 1983 in the provinces of Tetouan and Meknes. Prophylactic vaccination was continued in 1984 and 2 897 427 cattle were vaccinated with A5 vaccine.

Tunisia Although no information has been made available there is no doubt that the disease is present in the country. In 1982 FMD outbreaks of type A5 were officially reported through the World Reference Laboratory.

Libya Since 1981, FMD is present in the country with several outbreaks of type 01 recorded during 1983. Outbreaks were reported in 14 provinces in the northern part of the country with cattle, sheep and goats affected. TYhe vaccination programme carried out in 1983 was limited to 10 678 cattle, 29 484 sheep and 2 030 goats. No information has been made available on the disease situation during 1984.

Egypt FMD is endemic in the country with outbreaks of type 01 reported in 1983/1984.

Middle East countries

Lebanon FMD is widespread with 62 outbreaks reported during 1983 and 59 for 1984, in cattle, sheep and goats. Type ASIA-1 was diagnosed in samples sent to the World Reference Laboratory but according to official information received from the Services des Ressources Animales of the Ministry of Agriculture, in addition to ASIA-1 types 0, A22 and C were also reported. Vaccination was carried out on a small number of animals with 01, A22 and ASIA-1 vaccine provided through FAO (48 210 cattle, 41 500 sheep, 7 140 goats and 4 000 pigs). Vaccination programmes and application of sanitary measures for disease control are limited to free access areas only in the country.

Iraq The Government, seriously concerned with the economic problems caused by the presence of FMD in the country (estimated losses in 1974 - US$ 10 000 000), decided to establish an FMD vaccine production institute to meet the national requirements in FMD vaccine for disease prophylaxis and control programmes. The institute is located at Dora near Baghdad and was established in collaboration with Rhone Merieux, Lyons, France, at a cost of 15 million dollars. It was inaugurated in October 1983. It has a production capacity of 12 million doses per annum of FMD trivalent vaccine against the 01, A22 and ASIA-1 virus types which are at the origin of epizootics in Iraq and in the region.

The strengthening of FMD vaccine production plants in the Near East is of paramount importance and it is gratifying for FAO and for the Commission to see the establishment of the new FMD vaccine production plant in Iraq. This will permit a regional supply of homologous vaccine and the implementation of vaccination programmes at national and regional level. Furthermore, the availability of exotic vaccine (types A22 and ASIA-1) will help Europe and other regions to handle emergencies caused by exotic FMD outbreaks.

No information has been made available on the disease situation in the country during 1983/1984.

Syria FMD continues to be endemic with 174 outbreaks of types A22 and 01 reported in 1983 in cattle and sheep, involving 5 300 animals.In 1984 outbreaks of type 0 were reported.

Jordan No data available.

Israel The country which enjoyed disease freedom since 1981 was faced with two outbreaks of ASIA-1 type on cattle farms located in Kibbutz Daphna in the District of Zefat close to the border with Lebanon. The primary outbreak were reported on 27 May 1984 and the secondary on 3 June 1984. Out of 330 cattle present in

both affected farms 90 were infected. Animals slaughtered - 7 and one died.

Total number of animals vaccinated including vaccination carried out in the affected area during 1984 were cattle 539 521, sheep 186 316, pigs 1 548 and camels 348. Trivalent O/A22/ASIA-1 vaccine is produced locally and potency testing is carried out on cattle in an isolated unit which has been constructed and put into operation since September 1984.

Strict sanitary measures, quarantine, and revaccination brought the situation back to normal. Virus typing was carried out in Kinzon Veterinary Institute and was confirmed by the World Reference Laboratory.

Iran The FMD laboratory is located on the premises of the Razi Institute and is the only FMD vaccine production laboratory in the country. It has a capacity of more than 10 million doses of trivalent vaccine per year using suspended cell cultures and the Frenkel method in collaboration with Rhone-Merieux, Lyons, France. Cell culture vaccine is produced by the Iranian staff while Frenkel vaccine is produced by the French group. An average of 40 kg of epithelium is imported weekly from France and used for vaccine production by the French group (one graduate and two technicians) who are still working at the FMD laboratory under special agreement signed between the Government and Rhone-Merieux.

At present types A22, O and ASIA-1 vaccine are produced. The vaccine after having passed the controls for safety, sterility and potency is delivered to the Government. Only a certain percentage of the total amount of vaccine produced is allowed to be exported by Rhone-Merieux.

The Government attaches great importance to control and eradication of disease in the country and to this effect they

intend to increase vaccine production in order to reach a level that will cover fully all requirements. It is therefore the intention of the Government to set up a new FMD producing laboratory with a production target of 30 million doses of trivalent vaccine per year.

Vaccination programmes are carried out twice a year on all Government cattle farms with trivalent O, A22 and ASIA-1 vaccine and ring vaccination in the case of outbreaks. No stamping out is applied. Vaccine is provided free of charge only to Government farms.

Only the cattle population is covered by vaccination; sheep and goats are not vaccinated (70 million head).

As regards the FMD position in Iran, at present types O, A22 and ASIA-1 are recorded. Virus type ASIA-1 was first identified in cattle in Lorestam province near the border with Iraq in June 1983. Since then a number of ASIA-1 outbreaks occurred in central and northern regions of the country 1(Teheran, East and West Azerbaijan). Between January and October 1983 about 830 samples were submitted for typing to the FMD laboratory at the Razi Institute. Of these 95 were type O, one type A22 and 53 ASIA-1. Type O has been isolated in almost all provinces in Iran and A22 occurred only in one outbreak in Fars in June 1983. In 1984, the disease followed the same pattern as in 1983 with 189 outbreaks reported of O, A22 and ASIA-1 types, involving cattle, sheep and goats. In 1984 3 684 573 cattle and 15 318 973 sheep were vaccinated with A22/O/ASIA-1 vaccine.

Saudi Arabia and the Gulf countries In S. Arabia, Kuwait, Oman, Yemen A.R., and in the U.A.E., information received from OIE, the WRL and other sources on FMD types diagnosed during 1983/1984 are shown in Table 1. Kuwait suffered several FMD outbreaks of O1 type involving 3 953 dairy cattle . 16 000 cattle were vaccinated during 1984. The information received on the disease

position is generally incomplete and out of date and the numnber of samples submitted to the WRL for typing is too limited to permit valid conclusions on disease and virus type distribution in the Saudi Arabia and Gulf countries as well as in the whole region.

Relationship between Near East and European FMD strains of type O virus

The serological investigations carried out at the AVRI and at Rhone-Merieux laboratories are reported on in the Report of the Research Group Session held at Pirbright in 1982 and that of the Session held at Lelystad in 1983.

The O virus strains which have recently appeared in the Near East do not differ widely. However, they are quite different from the O1 classical European strains.

The cross challenges of cattle vaccinated with the European O1 strain vaccine and challenged with O1 Manisa 1969 virus (Turkey) confirm this difference showing 60% of heterologous protection.

The virus strains isolated from outbreaks in the USSR, O1 USSR 1618 66 and O1 Ukraine 81, are closely related the O1 Near East strains and are quite different from the O1 classical European virus strains (O1 Lausanne 1965, O1 BFS 1960, UK 1967).

The virus strains O Austria 81 and O Wuppertal W. Germany 82 show a high ratio with sera from O1 USSR 1618 66, O1 Manisa 1969, and O Sharquia, Egypt 1972.

The virus strain O1 Greece 1981 shows a high ratio with O1 Sharquia and O1 Manisa 1969. The virus strains ASIA-1 Greece 1984 shows a high ratio with ASIA-1 Iraq/73 and Lebanon 1983/1984. (Information Sheet No. 37, WRL).

From the foregoing it becomes evident that the FMD position in the Near East and especially in the Middle East countries deserves special attention from the European Commission since it constitutes a potential threat for all of Europe. In addition, the outbreaks which occurred in Austria and the Federal Republic of Germany, fortunately of type O1, and Greece type ASIA-1, are a serious warning of the risk which still exists.

Africa

The disease is widespread on the continent with endemic or sporadic outbreaks of FMD types SAT-1, SAT-2 and SAT-3 mainly in Southern African countries and in South Africa, and type O in other African regions with the exception of Senegal (West Africa) where FMD outbreaks type SAT-2 were reported in 1983 (Table 1). Botswana continues to maintain its disease freedom since 1981. In Zimbabwee and Kenya extensive vaccination programmes are carried out every year but despite this FMD outbreaks are being recorded in both countries. Mozambique has now started an ambitious three year programme for FMD control with financial assistance from the World Bank and FMD experts and consultants have been appointed by the Government of Mozambique for the implementation of the project. However, in areas where animal movement cannot be controlled, and especially in border areas, FMD control should be based on coordinated programmes at sub-regional or regional level.

In those areas where the disease is endemic no livestock improvement schemes are operating, all cattle are indigenous, mainly Zebu race, and there is a low but persistent incidence of FMD. The infrequent epidemics, with mild clinical symptoms of the disease, give a false picture of the disease position. However, where exotic breeds have been introduced or where livestock improvement schemes and artificial insemination are being applied, disease spreads more rapidly following its introduction and epidemics are likely to occur more frequently

with severe clinical symptoms. In addition National Game Parks or remote areas constitute a natural reservoir of FMD virus from where outbreaks frequently originate. For these reasons, the FMD situation in many of the African countries should be considered not only on the basis of the number of FMD outbreaks reported by individual countries but also on the basis of breed of animals and system of breeding. In addition, the ecological situation in each country is a factor which must be taken into account in the preparation and implementation of national or regional programmes for FMD.

Asia

The epidemiology of the disease on the continent can be divided into two FMD situations: the mainland situation and the island situation. On the mainland (India, Buthan, Nepal, Bangladesh, Burma, Thailand) the disease can be presumed to be endemic providing a reservoir of virus which is spread by movement of animals into the more developed areas where its presence can be more easily detected and reported.

It is generally accepted that FMD infection moves downwards from north to south involving Thailand and from there through uncontrolled movement of animals and export of cattle and sheep it spreads sporadically into the northern state of Malaysia. From India and Pakistan the disease is transferred to the Near East Region through the extensive trade in cattle and sheep which is carried out between these regions.

In the southeastern region of Asia, owing to its geographical conformation (islands) the disease situation has improved; Singapore, Taiwan and South Korea are free of FMD and not all the islands of the Philippines and Indonesia are included in the infected areas. In Lao, Kampuchea, and Viet Nam the disease is endemic with outbreaks of types O, A and ASIA-1 on record (Table 2).

Indonesia, after almost three years of FMD freedom, in 1983 suffered several FMD outbreaks on the island of Java. The responsible virus was identified as type O1. Tests carried out at the WRL, Pirbright, showed a very close relationship with the S.American virus strain O Campos. A mass vaccination programme was launched by the Government of all cattle and buffaloes on the island with O1 BFS vaccine. Because of failure of the O1 BFS vaccine and following the typing results from the WRL, a second vaccination was carried out with O Campos vaccine produced by Wellcome as well as homologous O1 Java 83 vaccine produced by Rhone Merieux, Lyons. More than eight million doses of FMD vaccine was purchased by the Government for a double vaccination of all cattle and buffaloes in Java. Up to the end of November 1983, 6 167 000 doses of FMD vaccine had been used and as a result of this the number of outbreaks in Java had decreased considerably.

FAO has followed closely the FMD situation in Indonesia, and the Secretary of the Commission, together with the OIE representative, visited Indonesia from 15 to 20 December 1983. The FMD situation was reviewed and discussed with the national authorities and advice was given on the disease control programme to be followed in Java. The Government policy is to continue vaccinating every year with imported vaccine until 1986 since the vaccine production capacity at the Surabaya FMD laboratory is limited to a hundred thousand doses per year. The infrastructure for FMD vaccine production in Asia is very poor and the existing vaccine production plants in Thailand and India do not meet the national requirements for the vaccination programmes. It is not expected that the situation will improve in the near future.

South America

The FMD situation during 1983/1984 did not change significantly as compared with the previous two years, with the exception of Chile where after five years of disease freedom two outbreaks of type O1 were reported in cattle in the frontier area with Argentina. Stamping out policy and ring vaccination brought the situation back to normal. In the region as a whole, the diagnosis of O virus rose 262% and C virus was up 609% while diagnosis of A virus was down by 61% in 1983. Some 151 019 cattle cases were reported during 1983, giving an overall morbidity rate in South America of almost 7 per 10 000 animals. This data shows a predominant presence of virus type O; virus type C increased significantly while with the exception of Brasil, there was a decrease in the incidence of virus type A in the whole region.

Type A/81 strain was present in Argentina and Brasil in 1981 and was brought under control through ring vaccination. It had not been identified in Brasil since 1981 while in Argentina it had been isolated occasionally during 1982. In 1983 the predominant A virus strain in Brasil and Argentina was related to A79 strain which is included in the vaccine. As regards C virus strain, its increase was the highest in the last eight years. This incidence was further increased in 1984 with 243 outbreaks reported in Argentina and in 1985 it was introduced in the south-east part of Bolivia causing several outbreaks. From information received from the Pan-American Center, Rio de Janeiro, immunological trials in cattle carried out showed that vaccine strain C3 Resende against field virus strain Argentina 84 protects 73% at 30 days post-vaccination and over 90% at 30 days post-vaccination as measured in serum protection test. As a result of these trials, vaccination campaigns were carried out in Argentina in February 1985 with monovalent C/84 vaccine used simultaneously with the normal OAC trivalent vaccine .

Type C Argentina 84 virus strains were sent to the WRL, Pirbright, from PANAFTOSA. It should be noted that other South American strains of A24 Cruziero, A27 Colombia, A32 Venezuela, A Venceslau, A Brasil/75, A Argentina/79, A Uruguaiana /81 with their respective antisera were already submitted to the WRL by the Center on previous occasions. This was discussed at the Twenty-fifth Session of the ECCFMD held in April 1983, and it is gratifying to note that the collaboration established between the PANAFTOSA Center and the WRL is continuing.

Detailed information on the FMD situation in South America during 1983/1984 is expected to be presented at the Twenty-sixth Session of the Commission in April 1985 by the Director of PANAFTOSA.

South America - Herds affected by FMD, 1983-1984

Country	Virus type*	1983	1984
Argentina	O1	352	
	A79	23	
	C3+C84	196	243
Bolivia**	O1	1	
	A24	1	
	C3+C24	2	
Brasil	O1	50	
	A79	143	
	C3	13	
Colombia	O1	192	
	A27	21	
Chile***	O		2
	A		
	C		
Ecuador	O1	22	
	A24-27	37	
Paraguay	O1	9	
	A24	1	
	C	-	
Peru	O	-	
	A24	1	
	C3	4	
Uruguay	O	-	
	A24	1	
	C3	4	
Venezuela	O1	12	
	A32	5	

* FMD virus subtypes refer only to 1983 and partially to 1984
** Partial data - C84 reported in 1985
*** No outbreaks registered from 1979 to 1983. Country officially declared free of FMD and other vesicular diseases as of 1981.

Source: Reports from COSALFA-XI Ordinary Meeting and Situation of FMD Control Programmes in South America, 1983, CPFA, May 1984.

Table 1

Country	No. of outbreaks 1983	1984	No./type animals involved		Virus type	FMD control policy
Morocco*	34	-	209 504	cattle sheep and goats	A5	Mass vaccination, ring vaccination, sanitary measures
Tunisia**						
Libya	104	12	1 895 46 120 2 049	cattle sheep goats	01	Sanitary measures; vaccination
Egypt	5	2	?	cattle	01	Sanitary measures; vaccination
Sudan	2	2	?	cattle	01/A	
Israel***	-	2	330	cattle	ASIA-1	Sanitary measures, vaccination, slaughter
Lebanon	62	59	930	cattle/sheep	01/A22/ ASIA-1/C	Vaccination whole country with 01/A22/ASIA-1 vaccine
Syria	174	19	5 385	cattle/sheep	01/A22/ ASIA-1	
Iraq	?	?	?	cattle	?	Sanitary measures; vaccination
Iran	151	189	?	cattle/sheep	01/A22/ ASIA-1	
S. Arabia****	15	28		cattle	A22/C/01	
Kuwait	7	9	4303	cattle	01	Vaccination with quadrivalent vaccine A22/ 0/C/ASIA-1 twice a year
Oman	11	1	7	cattle	01	
U.A.E.	6			cattle	01	
Yemen Arab Republic	6	16		cattle	SAT-1/01	
Qatar						

* Last outbreak November 1983
** no information
*** FMD free since 1981
**** FMD type C reported in 1984

Table 2

Type of FMD virus detected in African and Asian Countries in 1983-1984 (OIE, WRL)

Countries	Number of outbreaks 1983	1984	Type of virus
AFRICA			
S. Africa	10	+	SAT-2
Mozambique	+	2	SAT-2
Zimbabwe	5	2	SAT-2/SAT-3
Malawi	13	+	?
Tanzania	6	2	SAT-2/O_1
Kenya	207	+	4-A/42-O_1/5-C/ 2 SAT-1/200 SAT-2
Burundi	+	1	O_1
Somalia	1	+	O_1
Ethiopia	+	4	A
Sudan	4	1	O_1/A
Senegal	6	+	SAT-2
Nigeria	15	10	?
Ivory Coast	2	+	?
Mauritania	+	5	SAT-2 ?
ASIA			
Nepal	5	26	O_1/A22
Bangladesh	+	+	O/ASIA-1
India	9	+	O_1/C/ASIA-1
Burma	+	+	O_1/ASIA-1
Buthan	1	1	O_1/A
Thailand	151	108	O_1/ASIA-1
Malaysia	2	1	O_1
Indonesia	160	-	O_1
Hong Kong	20	5	O_1
Philippines	+	+	O/C
China	no information		
Laos	+	+	O/A_{22}/ASIA-1
Kampuchea	+	+	O/A_{22}/ASIA-1
Vietnam	+	+	O/A22/ASIA-1

ANIMAL VIRUS RESEARCH INSTITUTE

WORLD REFERENCE LABORATORY FOR FOOT AND MOUTH DISEASE

Pirbright, Woking, Surrey, GU24 ONF, U.K.

CUMULATIVE REPORT FOR 1983

During 1983 240 samples from 25 countries have been examined for type of virus. Virus was demonstrated in 142 of these samples and the types of virus recovered are tabulated below.

COUNTRY	No. of Samples	O	A	C	SAT 1	SAT 2	SAT 3	Asia 1	SVD	No virus detected
AUSTRALIA	6	-	-	-	-	-	-	-	-	6
BHUTAN	1	1	-	-	-	-	-	-	-	-
CAMEROONS	3	-	-	-	-	-	-	-	-	3
DENMARK	4	3	-	-	-	-	-	-	-	1
HONG KONG	40	20	-	-	-	-	-	-	-	20
INDIA	11	8	-	1	-	-	-	-	-	2
INDONESIA	23	9	-	-	-	-	-	-	-	14
KUWAIT	3	-	-	-	-	-	-	-	-	3
LAOS	1	-	-	-	-	-	-	-	-	1
LEBANON	5	-	-	-	-	-	-	4	-	1
LIBYA	8	3	-	-	-	-	-	-	-	5
MALAYSIA	4	2	-	-	-	-	-	-	-	2
MOROCCO	10	-	9	-	-	-	-	-	-	1
OMAN	31	18	-	-	-	-	-	-	-	13
PORTUGAL	2	-	2	-	-	-	-	-	-	-
SAUDI ARABIA	28	19	-	-	-	-	-	-	-	9
SENEGAL	7	-	-	-	-	6	-	-	-	1
SOMALIA	2	1	-	-	-	-	-	-	-	1
SOUTH AFRICA	16	-	-	-	-	12	-	-	-	4
SPAIN	1	-	1	-	-	-	-	-	-	-
SUDAN	4	2	-	-	-	-	-	-	-	2
UNITED ARAB EMIRATES	6	5	-	-	-	-	-	-	-	1
YEMEN	14	11	-	-	-	-	-	-	-	3
ZAMBIA	5	-	-	-	-	-	-	-	-	5
ZIMBABWE	5	-	-	-	-	1	4	-	-	-
TOTALS	240	102	12	1	-	19	4	4	-	98

23 out of the 142 positive samples (16%) were typed as original suspensions and 119 (84%) after tissue culture.

ANIMAL VIRUS RESEARCH INSTITUTE

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CUMULATIVE REPORT FOR 1984

During 1984 178 samples from 23 countries have been examined for type of virus. Virus was demonstrated in 108 of these samples and the types of virus recovered are tabulated below.

COUNTRY	NO. OF SAMPLES	O	A	C	SAT 1	SAT 2	SAT 3	ASIA 1	SVD	NO VIRUS DETECTED
BHUTAN	1	-	1	-	-	-	-	-	-	-
BURUNDI	1	1	-	-	-	-	-	-	-	-
GREECE	3	-	-	-	-	-	-	3	-	-
HONG KONG	6	5	-	-	-	-	-	-	-	1
INDIA	1	1	-	-	-	-	-	-	-	-
ISRAEL	1	-	-	-	-	-	-	1	-	-
KUWAIT	1	-	-	-	-	-	-	-	-	1
LAOS	9	1	-	-	-	-	-	6	-	2
LEBANON	1	-	-	-	-	-	-	1	-	-
MALAYSIA	4	1	-	-	-	-	-	-	-	3
NEPAL	44	17	9	-	-	-	-	4	-	14
NIGERIA	10	-	-	-	-	-	-	-	-	10
OMAN	8	1	-	-	-	-	-	-	-	7
PHILIPPINES	9	-	-	2	-	-	-	-	-	7
RWANDA	2	-	-	-	-	-	-	-	-	2
SAUDI ARABIA	36	13*	1	14*	-	-	-	-	-	9
SRI LANKA	4	2	-	2	-	-	-	-	-	-
SUDAN	2	-	1	-	-	-	-	-	-	1
SYRIA	2	2	-	-	-	-	-	-	-	-
TANZANIA	3	2	-	-	-	-	-	-	-	1
YEMEN	23	13	-	-	3	-	-	-	-	7
ZAMBIA	5	-	-	-	-	-	-	-	-	5
ZIMBABWE	2	-	-	-	-	-	2	-	-	-
TOTALS	178	59	12	18	3	-	2	15	-	70

* includes types O and C viruses isolated from a single sample (SAU 1/84)

10 out of the 108 positive samples (9.25%) were typed as original suspensions and 98 (90.75%) after tissue culture.

15.1.1985

Provisional Agenda Item 2.4

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

Forty-seventh Session of the Executive Committee

The Hague, 5-8 March 1985

Swine Vesicular Disease (SVD) in Europe

There has been a remarkable decrease in the incidence of SVD in Europe during 1983; outbreaks were reported only in Italy and France. Positive serological reactions for SVD were detected in Hungary in pigs imported from Sweden. Serological investigations carried out in Sweden on all pigs on the farms from which pigs were exported to Hungary were found negative for SVD.

U.K. No outbreaks of SVD have been reported since 21 May 1982. Extensive serological surveys carried out subsequently did not reveal any evidence of the disease. In these circumstances, the U.K. should now be considered free from swine vesicular disease. Sanitary measures applied in the U.K. for the control and eradication of the disease were reported to the Twenty-fifth Session of the Commission in April 1983, and were subsequently published in the relevant report. Current legislation requires (with some exceptions) all movement of pigs to be licensed, the separation of slaughter and store pigs during transport and at markets and prescribes stringent standards for the handling and processig of waste food which is to be fed to swine. A further requirement, is the thorough cleansing and disinfection of lorries transporting pigs, after each movement. The importation of live pigs and pig meat from abroad is controlled.

Italy. In 1983 four outbreaks of SVD were reported in Italy, three in the province of Milan and one in the province of Pescara in herds comprising a total of 7 000 pigs, with 274 pigs

affected. In 1984 only one outbreak was reported in the province of Mantova.

Portugal. Although SVD was clinically suspected it was not confirmed by laboratory tests. Current legislation provides, in addition to the strict sanitary measures, the stamping out of all affected animals with the prior approval of the Minister of Health.

France. Two outbreaks of SVD were reported in 1983 in Haute-Loire. Only sanitary measures were applied.

Provisional Agenda Item 2.5

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

Forty-seventh Session of the Executive Committee
The Hague, Netherlands, 5-8 March 1985

Treatment of Swill

The use of swill for feeding pigs has been a matter for concern for all international bodies concerned with animal health and many countries have specific regulations relating to the treatment of swill destined for feeding pigs. In the field of FMD, the European Commission and its Research Group on many occasions during its Sessions drew the attention of all member countries to the risk related to the use of untreated swill for feeding pigs since such by-products may constitute a source of FMD infection as was demonstrated in many cases of FMD outbreaks in pigs reported in the past in Europe. The conditions vary considerably from country to country in Europe. Some countries have regulations and implement them; in other countries there are no regulations. For the purpose of reviewing the conditions of swill treatment destined for feeding pigs in Europe, a survey has been carried out requesting information from all member countries on policies applied for treatment of swill.

The results of the survey undertaken, based on the information provided by those member countries which have replied are shown in the relevant table attached hereto. There is evidence that the question of swill treatment needs to have uniform practice in Europe.

Regulations in force regarding treatment of swill

Austria

Feeding of swill is covered by the Decree of the Minister of Health and Environment Protection dated 18 March 1974 according to which swill may be fed to cloven-hooved animals only after it has been cooked.

Belgium

Since 1969 a Royal Decree regulates the use of swill. In principle the use of swill collected from restaurants is prohibited. However, this is authorized under certain conditions (sterilization, disinfection etc.)

Cyprus

In 1976 an Order was printed in the Official Gazette of the Republic in accordance with the Contagious Animal Diseases Law (Cap. 45, Law 1959 and Law 28 of 1966) which governs the collection, transportation and processing of kitchen waste food and by-products of slaughter-houses intended to be used for feeding animals.

Denmark

The Danish legislation pertinent to the use of swill as animal feed is laid down in Order No. 454 of September 21, 1983 concerning the use of swill for feeding of animals. As a result of this legislation, collection, treatment and distribution of swill for animal feed can only be carried out by establishments authorized by the Danish Veterinary Services. To date (November 1984) a total of 8 establishments have obtained such authorizations.

Finland	Present regulations prohibit the use as animal feed of untreated swill from aeroplanes, ships, trains etc. Because of the favourable disease situation in Finland and due to the prohibition of importation of meat etc. from countries which are not disease-free domestic swill can at present be used as animal feed.
France	The use of swill and kitchen wastes is regulated by a Ministerial Decree dated 11 May 1964, which inter alia prohibits the use of swill for fattening pigs. Authorization to use swill and kitchen wastes for fattening pigs may, however, be granted under certain conditions by the Commissaire de la République following consultation with the Directeur Départmental des Services Vétérinaires. A new Ministerial Decree will be published shortly which will make it compulsory for the supplier of swill and kitchen wastes to obtain from the buyer a certificate released by the Commissaire de la République authorizing the use of swill and kitchen wastes. In addition this new Decree will prohibit the importation of swill and kitchen wastes from abroad.
Germany, Fed. Rep.	Regulations for feeding of swill to pigs are harmonized with EEc guidelines 80/217/EWG which have been adopted by the Federal Republic.

Iceland

Swill can be used for feeding pigs after thorough cooking, but only when a special licence has been given by the Ministry of Agriculture.

Ireland

The regulations relating to feeding of swill are contained in the FMD and Swine Fever (Boiling of Animal Foodstuffs) Order, 1933. Under this order, swill cannot be fed to any animals unless it has first been boiled. Legislation is presently being prepared introducing stringent controls on swill. These are necessary to comply with certain provisions of the EEC Directive 80/217 EWG on the control of Classical Swine Fever.

Luxembourg

Art. 14 of "Réglement grand-ducal" of 20 April 1983 stipulates that

(1) The utilization of swill coming from international transport such as ships, vehicles and aircraft, for feeding animals is prohibited. Such swill must be collected and destroyed under control of a Veterinary Inspector.

(2) Swill, other than that mentioned under (1) which is intended for fattening animals must be subjected to heat treatment so as to ensure the destruction of infectious virus. Following such treatment it can be used only for feeding fattening pigs, it being understood that the pigs which are fattened on a farm where such swill is used will leave the farm only for slaughter.

Malta

The feeding of uncooked swill and its collection by private individuals is prohibited on the Island of Malta. This is covered by Legal Notice. The Government, following the outbreak of African Swine Fever, has set up a Swill Cooking Plant which provides cooked swill for ten pig-fattening units. The collection of raw swill and its distribution is carried out by a semi-State Company supervised daily by The Veterinary Division.

Netherlands

Since 1968 it is prohibited for pig farmers to have kitchen wastes in stock without a licence except for kitchen wastes obtained from private households (Decree on the Sterilization of Kitchen Wastes 1968). This licence is only distributed to pig fatteners who do not keep breeding pigs and and on condition that an effective sterilization appliance is present. The Decree on the Sterilization of Kitchen Wastes 1968 and Decree on Imported Kitchen Wastes 1961 were withdrawn and in 1972 replaced by the Decree on Swill. In order to obtain a licence for the storage of swill, the following conditions must be fulfilled:

- the pig stock has to consist exclusively of fattening pigs;

- a boiling appliance considered suitable by the Veterinary Services must be available on the farm;

- the farm has to have sufficient space for this and it should be in a place which is inaccessible to cattle, dogs, cats, rodents and birds;

- in this space, boiled as well as unboiled swill has to be stored separately, in easy-to-clean and well locked barrels, which must be labelled on the outside boiled and unboiled respectively.

Norway

Regulations are in force which ban the use of swill for animal feed unless it has been sterilized (120 C/20 min.) in an officially approved sterilization plant. Only bread and waste from the farmer's own household are exempted. Requirements are laid down which have to be met before a sterilization plant can be approved by the Ministry of Agriculture. Records of suppliers of raw swill and recipients of sterilized swill have to be kept. Each sterilization plant is subject to supervision by an officially appointed veterinarian.

Poland

It is compulsory to treat swill with the use of appropriate high temperature; the herds using such feed are vaccinated against hog cholera .

Sweden

Some years ago regulations for feeding swill to pigs required that it be sterilized. These regulations were abolished because the Veterinary Authorities found that the use of swill for feeding was not very widespread. Recently, however, there has been an increase in its use and Regional Veterinary Officers have been requested to report on this. If the increase is such as to warrant control measures, the Veterinary Authorities will decide on the action to be taken.

Switzerland

Treatment is divided into three categories:

1. Carcasses and confiscated meat products must be sterilized in special establishments producing meat-meal or similar products;

2. Abattoir offal may be collected directly by owners of fattening pigs who have recognized equipment (Sterilisations-Anlage);

3. Offals from collective kitchens (restaurants, hospitals etc.) may be fed to pigs if the owner has recognized cooking facilities.

United Kingdom

Under the Disease of Animals (Waste Food) Order 1973 "waste food" is defined as:

(i) any meat, bones, blood, offal or other part of the carcass of any livestock or of any poultry, or product derived therefrom of hatchery waste or eggs or egg shells;

(ii) any broken or waste foodstuffs (including table or kitchen refuse, scraps or waste) which contain or have been in contact with any meat, bones, blood, offal or with any other part of the carcass of any livestock or of any poultry;

but does not include meal manufactured from protein originating from livestock or poultry.

The principal requirement of the Order is that waste food shall be heat treated to the required temperature by approved plant and equipment before being fed to animals. In addition any waste food landed in Great Britain from any means of international transport is not permitted to be fed to livestock.

Provisional Agenda Item 3.

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

Forty-seventh Session of the Executive Committee

The Hague, Netherlands, 5-8 March 1985

Research Group activities and items raised by the Forty-sixth Session of the Executive Committee

A Session of the Research Group of the Standing Technical Committee of the European Commission for the Control of Foot-and-Mouth Disease was held at the Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia, Brescia, Italy, from 26 to 28 June 1984.

The report of the Session has been distributed. The conclusions and recommendations of this Session are given hereunder:

Item 1 -Innocuity testing of vaccines

Two papers were given under this heading. 1) Dr. Donaldson presented results obtained at AVRI, Pirbright, showing that FMDV grown in BHK-21 cells produced higher infectivity end-points in bovine thyroid cells than in BHK-21 cells. FMD virus antigen preparations obtained from BHK-21 cells and inactivated by formaldehyde and AEI or AEI alone were innocuous when tested for infectivity in BHK cells both before and after the concerntration of antigen but on 4 of 25 occassions concentrated antigens were

found to contain infectious virus when tested in bovine thyroid cells. The importance of monitoring the kinetics of the extinction slope of viral infectivity during inactivation was emphasised.

Dr. Lombard presented results on investigations carried out at the IFFA Laboratory, Lyon, on the safety testing of both non-concentrated and concentrated FMD antigens. Purified ethyleneimine was used for non-concentrated virus inactivation and binayr-ethyleneimine for concentrated purified virus inactivation. Residual viral infectivity was detected by inoculation of secondary lamb kidney cells. The results indicated that this system offered advantages over innocuity testing in cattle in terms of sensitivity of virus detection and practicality.

A draft proposal on the requirements for the innocuity testing of FMD vaccines intended for submission to the European Pharmacopoeia was considered to be incomplete by the Researach Group and was withdrawn. The Group directed that the members of the drafting committee involved should prepare a revised document for circulation to members of the Group before the next Session.

Item 2 - Further data on the use of concentrated virus preparations stored at low temperature

Two papers were presented under this heading.

In the first paper the stability of 146S particles in PEG-precipitated FMD virus harvests stored in Kieselguhr filter-cakes over liquid nitrogen was examined at intervals over a period of 7 years. The data pointed to excellent stability of 146S particles of all 3 serotypes during storage in accordance with previous findings. The potency of vaccine prepared from filter-cakes stored for 7 years is under investigation.

The second paper described the storage of inactivated, two step PEG-precipitated FMD virus of sero-type A_{10}, C-Detmold and O_1 BFS 1860 stored as Kieselguhr filter-cakes at -70°C. Complete recoveries of 146S particles of all 3 serotypes were obtained after 2-4 years of storage. The double oil emulsion formulation was found to be considerably more efficient than the single oil emulsion vaccine with efficiency equaling that of the standard vaccine.

The standard vaccine tended to induce high levels of neutralising antibodies more rapidly, whereas the double oil emulsion vaccine gave a more sustained response.

During discussion, the question of shelf life of vaccines prepared from concentrated stored antigen was posed. No experience on this aspect of the use of concentrated antigen seemed to be available.

Item 3 Use of monoclonal antibodies against FMD virus

Three presentations on the characterisation and potential application of monoclonal antibodies (MAb's) were given.

The Group felt that in order to optimise the development and use of MAb's the cooperation taking place between FMD laboratories in this field should be further expanded and strongly promoted.

Item 4 - FAO international collaborative laboratory study

A paper dealing with matters relating to Phase I of the International Collaborative Study on FMD virus assay methods prepared by Dr. Mowat of AVRI, Pirbright, has been accepted for publication in the Journal of Biological Standardization. A draft of a second paper written by Drs. Doel and Mowat, AVRI, and describing progress under Phase 2, was submitted to the Research

Group but was received too late for scrutiny and comment. However, since the meeting it has been circulated to the Group for amendments and/or comments and thereafter has been submitted for publication in the Journal of Biological Standardization.

It was requested that Dr. Lombard, IFFA Laboratory, Lyons, should, subject to availability, send type A5 and C1 antisera resulting from both one and two inoculations of vaccination to AVRI Pirbright for distribution to collaborating laboratories in their routine tests as standards. The results obtained should be reported at the next meeting of the Research Group.

Item 5 - Miscellaneous contributions

In two papers presented by Dr. Sellers, the procedures employed at AVRI, Pirbright for the typing and characterisation of vesicular viruses were reviewed. The speed of routine diagnosis is mainly influenced by (i) time of day when the sample reaches the laboratory; (ii) the quantity and quality of material in the specimen; and (iii) the necessity for passage in tissue culture. An analysis of 1,085 specimens submitted from 51 overseas countries between 1979 and 1983 showed that the likelihood of obtaining positive results was highest when four or more samples were submitted at a time. The spectrum of tests used for differentiating the viruses was outlined and the priority objectives were described. In the case of FMD virus strains these are: (a) to attempt to relate the strain isolated to available vaccine(s) and to advise on whether protection is likely to be achieved after one or two vaccinations; and (b) to characterise the strain both immunologically and physico-chemically in order to try to establish its source of origin.

Dr. McKercher, Plum Island Animal Disease Center, U.S.A., outlined results obtained in a collaborative study with the laboratory at Brescia, Italy, on the survival of swine vesicular disease virus (SVDV) in Parma hams. The results obtained showed

that SVDV was inactivated between 180 and 300 days post-slaughter in the U.S. experiments and between 90 and 182 days in the Italian experiments, which ensures that such products are free of SVD virus at the end of the maturation period (12 months).

The final paper under this heading presented by Dr. Lombard, IFFA Laboratory, Lyons, dealt with the serological characterisation of type O virus strains from Indonesia. The "r" values obtained indicated that strains obtained from Indonesia between 1962 and 1975 were related to each other but different compared to those from Europe, Turkey, Brasil, Thailand and Hong Kong. The 1983 Indonesia strain was different from older O1 strains isolated in Indonesia and from the other O1 strains examined.

Item 6 - Items referred to the Research Group by the European Commission for the Control of FMD at previous Sessions.

The following topics were discussed by the members of the Research Group in closed session:

Topic (1) Minimum standards for laboratories working with foot-and-mouth disease both in vitro and in vivo

A revised paper by Dr. Mann and Dr. Sellers was discussed and certain alterations and additions to the text were proposed by the Group; the revised final version of this is presented under Agenda Item 3.1.

Topic (2) Trials on FMD strains, Argentina (evaluation)

The results of trials carried out to test the resistance of cattle vaccinated with trivalent European and South American vaccines against challenge with A/79 and A/81 strains from South America were reported by Dr. Leunen, INVR, Brussels. The Group commented upon the results and recommended that trials should be continued. The Group urged that future trials should be

carefully co-ordinated between the collaborating investigators involved to ensure the maximum validity of the results.

Topic (3) Trials carried out at AVRI, Pirbright, on A24 and A5 cross protection (financial support provided by FAO)

A preliminary report of tests carried out at AVRI to determine whether immunisation with commercial A24 vaccine will protect against challenge with an A5 virus was examined by the Group: the results were accepted and the Group recommended that this study be completed by challenge of A5 vaccinated cattle with A24 virus.

Topic (4) Zoosanitary code

Under this heading previous recommendations made by the Research Group with respect to the survival of FMD virus in milk, semen and meat were reviewed and compared with stand-points taken by the Permanent Commission on FMD of O.I.E. as laid down in the Zoosanitary Code.

In regard to the heat treatment of milk, the Group reconsidered the proposals which were made at the 1979 meeting in Lindholm and which are contained in the report of that meeting (Lindholm Report, page 12) and concluded that those recommendations are still valid.

The Group compared the recommendations which it made for FMD and semen at the Lelystad meeting in 1983 (Lelystad Report, page 4) with those in the O.I.E. Zoosanitary Code and found no essential differences.

The Group felt that in regard to FMD in meat, its recommendations in the past (Tubingen Report 1981, page 6; Lelystad Report 1983, page 4) have dealt with specific questions, therefore, some of the wider aspects covered by O.I.E. in the Zoosanitary Code are not always relevant.

Topic (5) Disinfection of vehicles at check points

The Group concluded that disinfection was an impracticable proposition and since it is unlikely that sufficient FMD virus would be carried on vehicles to constitute a risk of FMD transmission to animals and since there is no evidence to indicate that virus can be transmitted in this way, the enforced washing of vehicles was neither necessary nor an effective operation.

Item 7 - Any other business

Dr. R. Casas Olascoaga, Director, Pan-American FMD Center, on behalf of the Pan-American Health Organization, kindly invited the Research Group to hold its next meeting at the Pan-American FMD Center in Rio de Janeiro between 15 and 18 October, 1985. This invitation was accepted by the Group and it was agreed that the following items should be included in the Agenda for discussion:

- evaluation of FMD vaccine potency
- importance of strains of different sub-types
- epidemiology of FMD in South America
- items referred to the Research Group by the European Commission for the Control of FMD

It was recommended that keynote speakers should be invited by the Research Group to present general papers on these topics which could then be followed by more specific contributions. The Secretary emphasized the necessity for papers to be available for distribution well in advance of this meeting.

Provisional Agenda Item 3.1

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

Forty-seventh Session of the Executive Committee

The Hague, Netherlands, 5-8 March 1985

Minimum standards for laboratories working with FMDV in vitro and in vivo

GENERAL

Foot-and-mouth disease is one of the most infectious virus diseases known and handling the virus in the laboratory with due precautions is a hazard.

Route of infection

Investigations have been made of the amount of virus required to infect susceptible animals by different routes. The results of such work indicate variation in susceptiblity both between and within species by various routes of infection and with different virus strains. However, it is always possible that one infectious virus unit or infectious RNA unit is capable of setting up infection in a susceptible animal.

Sources of virus or infectious RNA

The sources are:

(i) Infected susceptible catle, sheep, goats, pigs, wild ruminants and other susceptible wild animals.

(ii) Infected laboratory animals - mice, guinea pigs, rabbits, etc.

(iii) Infected tissue cultures: (a) small scale; (b) large scale.

(iv) Physical and chemical processes: (a) concentration; (b) purification; (c) inactivation.

The virus may be present as solids (e.g. in tissues, etc.), liquid (in fluids or suspensions), aerosol or particulate matter. The amounts of virus or infectious RNA present in the various tissues, secretions, excretions and preparations or arising as a result of handling have been published in the literature (Sellers, 1971) or are available from FMD laboratories.

Means by which virus can escape

Laboratories can be regarded as a series of boxes, one inside the other, starting with the safety cabinet or animal cage in the laboratory or room itself. The room may be situated in a suite of rooms which in turn may be part of a bigger building.

Each box or stage has an effect on the degree to which cross contamination or escape from the laboratory may occur.

The ways by which the virus or infectious RNA may be carried out or escape include:

- Animals (dead or alive)
- Tissues

- Secretions and excretions
- Unused foodstuffs
- Bedding
- Tissue cultures
- Virus/infectious RNA preparations of various kinds
- People
- Clothes
- Instruments
- Records
- Water
- Air
- Unwanted pests
- Mechanical and building materials

Minimum control measures

Various methods have been devised for ensuring that no infectious material is carried beyond limits to which it is permitted to be taken.

These include the use of heat in its various forms, chemicals and disinfectants, air filtration, etc., and laboratories working with foot-and-mouth disease have over the years amassed valuable information on the efficacy of the various methods (Sellers, 1981). It is suggested that the measures proposed in Sections A to H as follows represent the minimum safety procedures to ensure FMD containment.

A. PERSONNEL

1. Must be trained appropriately for the position held.

2. Must be prepared to change clothing on entering restricted area and shower on leaving.

3. Must agree to abide by minimum standards of quarantine, i.e. NO contact with animals susceptible to foot-and-mouth disease for periods according to virus exposure at work.

Minimum periods

(a) Involvement with normal laboratory techniques .. .. miminum of 2-day quarantine

(b) Following contact with animals infected with foot-and-mouth disease virus or involvement with large-scale virus production .. .. minimum of 2-day quarantine

B. CLOTHING

1. Regular supply of clean comfortable clothing.

2. Laundry process to involve at least a hot (90^{o}C) detergent wash at some stage of cycle.

N.B. Where clothing is not laundered on premises, it should be autoclaved before leaving restricted areas.

C. EXPERIMENTAL ANIMALS

1. Naturally susceptible animals should only be allowed to be kept in insecure houses in close proximity to the restricted areas if they are under close observation.

2. All animal carcasses to be sterilized by heat or incinerated at the end of experiment. (Salvage of carcass meat should only be permitted if proper steps are taken to ensure its innocuity.)

D. FOOD STUFF

1. Any excess food stuff which has been taken into a restricted area should be sterilized by heat or incinerated.

E. EQUIPMENT

1. Sterilize with heat (autoclave), if possible, to remove from restricted area.

2. Fumigate with formaldehyde (0.3 g/cu.ft/ at 70% RH) for at least 24 hours or equivalent with other aldehydes, e.g. glutaraldehyde.

3. Thoroughly wash in an appropriate chemical disinfectant:

   4% washing soda (Na_2HCO_3)
   0.2% caustic soda (NaOH)
   2% citric acid ($C_6H_8O_7$)

Note: The efficiency of these chemical disinfectants is considerably improved by the addition of detergents.

F. VENTILATION

1. All virus handling areas held at pressures negative to atmospheric.

2. Negative pressure of at least 5 mm air pressure should be employed and the filtration system should be monitored to ensure that the negative pressure is being maintained.

3. Exhaust air must be passed through properly installed H.E.P.A. filters which are checked on a regular basis.

G. EFFLUENT TREATMENT

1. Effluent from laboratory area and from areas holding experimental animals should be treated in a manner which ensures that the inactivation of FMD virus has been achieved.

H. CODE OF PRACTICE

1. A detailed code of practice must be drawn up and readily available to all staff at all times.

   A person of suitable rank should be responsible for the strict implementation of all aspects of the code of practice.

   It is suggested that the various processes and procedures can be assessed qualitatively and quantitatively by means of a check such as that which follows:

1.	Locality	- Urban - Rural
2.	Proximity of susceptible stock	- Which stock
3.	Restricted public access	- Fenced - Guarded - Locks

4. Staff identification
   - Staff movement restrictions

5. Safety against
   - Flood
   - Subsidence
   - Landslide
   - Earthquake
   - Other

6. Is there room for development?

7. Buildings
   - Generally suitable
   - Old
   - New
   - Conventional/prefabricated/other

   - Windows
     - Double
     - Sealed
     - Shatterproof

   - Doors
     - Sealed
     - Self-closing
     - Interlocked at airlocks
     - Vision panel
     - Marked sign - HAZARDS

   - Walls, Floors, Ceilings
     - Suitable surfaces
     - Cleanable
     - Sealed entry of services

   - Lighting

8. Laboratory fittings

   - Benches
     - Surfaces
     - Impervious
     - Continuous

   - Safety equip.
     - Microbiological safety cabinets
       - Class 1
       - Class 2
       - Class 3
     - Protected centrifuges
     - Protected sonicators
     - Protected homogenisers

   - Taps
     - Hand
     - Wrist
     - Elbow
     - Foot
     - Electronic

   - Space
     - Adequate
     - Overcrowded

9. Ventilation: Virus handling area

   - Air pressure
     - Negative to atmosphere
     - Negative pressure

   - Monitoring
     - Manometers
     - Frequency observation

- Recording
- Electronic
- Temperature control
- Humidity

- Air locks
  - Sophisticated
  - Simple
  - Separately ventilated

- Exhaust air
  - H.E.P.A. Filters
    - Single
    - Double
  - Quality of Filter
  - Monitoring
  - Testing methods

- Filter container
  - Ladder frame
  - Canisters

- Input air
  - Filtered
  - Quality
  - Temperature, etc.

- Input/Extract
  - Interlocked

- Standby generating system

10. Range of work:

- Research
- Vaccine production
- Large animal work
- Small animal work
- Diagnosis
- Other

11. Effluent treatment:

- Heat
- Chemical
- Irradiation
- Other

12. Storage of viruses:
  - Location
  - minux 20°C
  - minus 70°C
  - Liquid nitrogen
  - Locked
  - Up to date records
  - Secure area

13. Pass-out facilities:
  - Autoclaves
  - Fumigation cabinets
  - Monitoring
  - Photocopying
  - Facsimile machine

14. Structure - Disease Security Department

15. Disease Security Regulations

16. Other security

17. Fire precautions

18. Staff training

19. Staff selection

20. Visitors

21. Procedure for emergencies

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1. Sellers, R.F. (1971). Quantitative aspects of the spread of foot-and-mouth disease. Veterinary Bulletin, 41, 431-439.

2. Sellers, R.F. (1981). Absolute safety in communicable diseases resulting from storage, handling, transport and landspreading of manures. CEC: Luxembourg, pp. 239-245.

Provisional Agenda Item 3.2

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

Forty-seventh Session of the Executive Committee

The Hague, Netherlands, 5-8 March 1985

Manipulation and transfer of FMD Genetic Material in Europe

The Committee of the Commission at its Forty-sixth Session held in Bonn in April 1984 reviewed and discussed some of the main conclusions and recommendations of the Commission on FMD control and their application by member countries (see Report of the Forty-sixth Session of the Executive Committee 1984). Among these the recommendation on firm control on genetic material derived from FMD virus transferred from other regions into Europe(Twenty-fifth Session, April 1983) was given special attention in view of extensive research work which is being carried out in many national or private research centers in Europe with FMD genetic material. Since this matter concerns all laboratories handling FMD genetic material in Europe, the Secretary as a follow-up to the Executive Committee recommendations had carried out a survey requesting information from all Commission members on the policy applied on importing and handling in this respect. The results of the survey

undertaken, based on the information provided by those countries which replied are given hereafter. There is evidence that the matter has been or is being considered in the national regulations in some countries while in other countries this matter has not been considered in view of the absence of FMD laboratories and disease freedom. Since the concept of genetic material derived from FMD virus or other microbial genetic material is new there is no clear definition of its nature and techniques for safety tests. It is therefore necessary to specify the component of such material deriving from genetic manipulation and their infectivity . At the meeting of the OIE FMD Commission held in Paris in November 1984, the matter was discussed and proposals were made in this respect as follows: "Among biological materials may be considered microbial genetic material. As far as foot-and-mouth disease virus is concerned, the following can be considered as non-infectious: cDNA copies of m RNA's or pieces of cDNA copies of viral RNA. However, these materials may be contaminated with FMD virus during preparation. Freedom from such contamination must be tested by inoculation of susceptible tissue cultures in mice or cattle handling of such material should be submitted under the same regulations applied in manipulation of FMD virus."

Considering the importance of this subject and its future importance, the genetic manipulation of bacteria and virus has now become the objective of research programmes in the most advanced laboratories in Europe and in the world and it is

expected that more laboratories will deal with this in the future. Therefore recent developments open the door to a much wider circulation of genetic material derived from FMD virus than was previously the case. The Commission's Research Group at its meeting held in Tubingen in 1981 and in Lelystad in 1983 was concerned about the release of possibly infective material from FMD laboratories. The opinion was further expressed that National Authorities should develop legislation covering this matter. Adequate tests for the absence of infective virus would be required.

Survey on policies in transfer and handling of genetically manipulated FMD virus in Europe

1.	Austria	No special regulations have been issued. No FMD genetic material is handled in Austria.
2.	Belgium	Supports the proposal made at OIE FMD Commission, March 1984. No specific regulations exist.
3.	Cyprus	FMD virus is not handled in Cyprus.
4.	Denmark	Work on and importation of FMD virus is strictly confined to the State Veterinary Institute for Veterinary Research, Lindholm. The Danish legislation concerning contagious diseases in domestic animals is at present being

		revised and in this connection similar rules as above will be included for importation and handling of FMD genetic material in the country.
5.	Finland	Import of FMD virus material as well as import of other microbes and micro biological material of infectious diseases is allowed with the authorization of the Veterinary Department. No permission is granted for importation of FMD virus or FMD virus material.
6.	France	No FMD virus can be imported without the authorization of la Direction de la Qualite. When such authorization is granted the importing laboratory gets in touch with the Laboratoire National de Pathologie Bovine, Lyons, to study the technical aspects of the imported material and in particular the risk of its dissemination. As far as genetically manipulated FMD virus is concerned, a request for import has never been presented and no authorization has to date been granted.
7.	Germany, Fed.Rep.	No specific guidelines. It has been established that protection measures have to be taken when experiments with recombinant FMD virus are undertaken. According to the origin of such material special permission is requested from the Central Commission for Biological Security following consultation that all measures are taken to control all possible dangers such as for instance importation of unknown genes of high virulence, increased risk of danger and expansion of resistent genes. Working with FMD virus can only be done under licence and is therefore only permitted at the Federal Research Institute for Animal Virus Diseases in Tubingen.
8.	Iceland	National rules on FMD applied also for FMD genetic material.
9.	Ireland	FMD virus is not handled in Ireland.
10.	Luxembourg	In force same rules for FMD as other

	infectious exotic virus diseases.
11. Malta	FMD virus is not handled in the country.
12. Netherlands	The only Institute dealing with FMD virus is the State Veterinary FMD Institute, Lelystad. All materials kept in the Institute are routinely disinfected and occasionally checked for infectivity. A new Act shortly to be passed by Parliament, will provide for stricter controls in the handling of infectious materials. might be dangerous for the health of animals. The Minister for Agriculture and Fisheries will be empowered to grant exemptions to this regulation to specific institutes under certain conditions such as production, destruction etc. of such materials.
13. Norway	No work is carried out on recombinant FMD virus material.
14. Poland	No work with recombinant DNA FMD virus is carried out in Polish laboratories.
15. Sweden	Only the national veterinary institute is allowed to handle FMD antigen for diagnostic purposes. No FMD vaccine is produced or will be produced. There are no plans to start working on recombinant FMD virus for the time being. At the moment there are no formal restrictions for scientists to import microorganisms; the import regulations are under review at present.
16. Switzerland	There is no special legislation concerning the transfer of genetically manipulated FMD virus. Since 1982 the Federal Veterinary Office requests a certificate from the exporting laboratory confirming the absence of infectivity for the importation of biological material such as c-DNA. The importation of viral RNA is not allowed. Freedom from live virus contamination must be tested by inoculation of susceptible tissue culture in mice or cattle. Any delivery of such biological material into Switzerland is reported by the FMD exporting laboratory and the importing Institute. It is

	considered that these regulations provide sufficient security that handling FMD imported genetic material is safe.
17. United Kingdom	Same regulations as those applied to FMD in general.

Provisional Agenda Item 4

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

Forty-seventh Session of the Executive Committee

The Hague, Netherlands, 5-8 March 1985

Regionalization of FMD vaccine production

The regional approach to the world problem of FMD control and prophylaxis has guided the FAO actions and policy in this field since the early fifties. To facilitate the implementation of the concept of regionalization, FAO supported the establishment of Commissions and Committees in all three regions in the world (eg. Europe, the Near and the Far East) where FMD represented one of the major constraints to the development of the livestock industry and collaboration among countries appeared to be essential for a coordinated action for FMD control at subregional or regional levels. To support national efforts, assistance in FMD control and vaccine production has been provided by FAO through the Regular Programme or in the case of emergencies through the TCP (Technical Cooperation Programme).

In Europe, the FAO European Commission for the Control of FMD was established for the purpose of ensuring collaboration among all European countries, especially in those areas exposed to both indigenous and exotic FMD virus. With this aim in mind technical

assistance was provided by FAO and the Commission particularly to south-eatern European countries.

The need for regionalization of FMD vaccine production became obvious when the procurement of regular supplies of FMD vaccine of exotic virus type had to be planned for the establishment and maintenance of a buffer zone in south-eastern Europe in 1962/63 against SAT-1, A22 and ASIA-1 FMD virus types which have been present in or have menaced the region, and consequently Europe.

At the OIE Conference held in Vienna in September 1962 and the subsequent joint FAO/OIE meeting held in Paris also in 1962 it was recommended that the production of exotic vaccine should not take place in countries which are not involved or menaced by the corresponding exotic viruses. This recommendation was endorsed also by the EEC (73/78 Decision du Conseil/26/March/73). FAO and the European Commission for FMD which are responsible for the execution of the campaigns in south-eastern Europe have endeavoured to procure the vaccines needed for the implementation of the vaccination campaigns in the buffer zone and also for emergency action against non-conventional European FMD virus strains, from producers outside the European continent.

In addition to the provision of vaccine for the maintenance of the buffer zone in the three countries concerned (Turkey, Bulgaria, Greece) FAO granted technical and financial assistance to countries engaged in the establishment of FMD vaccine production plants for the purpose of attaining regional autonomy and self-sufficiency in vaccine to meet the national needs for FMD control and consequently prophylactic programmes. Most important, as far as Europe is concerned, have been firstly, the project for large-scale vaccine production in Turkey started in 1969, which is expected to be completed in 1985 with additional financial assistance provided by EEC, and secondly the establishment of an FMD Vaccine Center in Bulgaria which was completed in 1984. UNDP/FAO assistance will be continued until the end of 1986.

Thus the first two objectives of the FAO and of the Commission, aimed at the regionalization of FMD vaccine production, and making the best use of local resources for the development of self-sufficiency in vaccine, have been pursued and partly attained. Greater difficulty has been encountered, however, in the attainment of the other two objectives (3 and 4)* of the regionalization policy which, as stated at the Twenty-First Session of the European Commission held in April 1975, should serve "To ensure availability of vaccine for use in other regions of the world and to cease vaccine production in countries which are not affected or threatened by strains of virus originating outside the region. A prerequisite for these vaccines as clearly indicated in the same document of the Commission, is that their quality should conform to the requirements for sterility, safety, potency, and storage as stipulated by countries or regions of destination." Such requirements have been met as far as FAO deliveries are concerned only when exotic vaccines have been produced under the direct responsibility of proven qualified producers, but owing to varying problems (political upheavel) in the region where the vaccine has originated from, the situation has now changed. As a result, the present production of vaccine is just sufficient to cover the amount needed for the maintenance of the buffer zone in south-eastern Europe while in the case of an emergency caused by FMD outbreaks, procurement of the vaccine in large amounts becomes extremely difficult.

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* "3. to ensure availability of vaccines for use in other regions of the world to meet emergencies arising from extra-regional spread of virus and to maintain reserve stocks;

* 4. to cease vaccine production in countries which are not affected or threatened by strains of virus originating outside the region."

The emergency created by the ASIA-1 outbreak in Greece in June 1984, is a clear demonstration of this; IFFA Rhône-Mérieux, France, had difficulty in supplying all the ASIA-1 vaccine (Teheran production) urgently required to meet the emergency situation in Greece and the prophylactic programme in Bulgaria. FAO following the decision taken at the FAO/EEC/OIE Tripartite Meeting held in Budapest in June 1984, arranged for the balance to be made available from Wellcome U.K. With the exception of the FMD laboratories in Botswana and Iraq, and three operating in S. America: the other national FMD laboratories in the developing countries can hardly meet national requirements for vaccine. At the FAO/EEC/OIE Tripartite Meeting held in Paris on the occasion of the OIE General Session in May 1984, this matter was discussed and concern was expressed regarding the problem of providing exotic vaccine promptly in the case of an emergency; EEC was requested to review and discuss this matter. In order to avoid such problems groups of countries in Europe and in North America have already established strategic reserves of vaccine or vaccine banks, including exotic types of FMD virus, independently from the OIE/FAO recommendation concerning their location in countries which are affected by the corresponding viruses. This is quite understandable.

In conclusion, since vaccine production technology, testing procedures and laboratory security measures, are becoming more and more sophisticated and effective, the criteria for selecting the source of exotic vaccines in view of their possible application in developed countries or disease-free continents, should be established or reviewed on realistic grounds and in the light of the experience acquired during the last 23 years by FAO and the European Commission for FMD in the implementation of the vaccination campaigns and also taking into consideration the experience of other International Organizations i.e. OIE, EEC.

It should be noted that the use of inactivated exotic vaccines obtained by FAO from Institutes which offer sufficient guarantees as to innocuity and safety of production have never over a period of 23 years caused problems attributable to residual infectivity. Furthermore there have been no cases of FMD outbreaks of exotic type in Europe, attributed to virus escape from the World Reference Laboratory, Pirbright U.K., which is handling FMD samples from all over the world.

FMD vaccine production plants, in the world

Country and/or Producer	Annual production (average and % for exportation)	Production capacity per month	Method of production (and average potency)	Cost	Number of doses per annum required for systematic prophylactic scheme
WELLCOME GROUP Production plants in U.K., Spain & Fed. Rep. of Germany	Trivalent OAC 14×10^6 doses - 10% exported Bivalent) various types Monovalent) 2 000 000 (100% exported)	30×10^6 (mono)	BHK suspended cells $6PD_{50}$ or $3DP_{50}$	Tri. L0.25 Mono L0.1	12×10^6 (tri)
ARGENTINA	Trivalent 20×10^6 OAC	2×10^6 (tri)	$3DP_{50}$	Tri. L0.20	20×10^6 (tri)
BRAZIL	Trivalent OAC $50\text{-}70 \times 10^6$	6×10^6 (tri)	Modified C Index 2	Tri. L0.14	$50\text{-}70 \times 10^6$ (tri or quad)
KENYA	OAC, Sat 1, Sat 2, Sat 3 Mono, bi, tr and quadrivalent Equivalent to 25 x 10 mono	2×10^6 (mono)	$6PD_{50}$	L0.05 - L0.10 per mono	20×10^6 (tri or quad)
PARAGUAY	Trivalent 10×10^6	1.5×10^6 (tri)	C Index 2 S Index 1.5	Tri L0.12 - L0.20	9×10^6 (tri)
URUGUAY	Trivalent 20×10^6	2×10^6 (tri)	C Index 2	Tri L0.08 - L0.15	20×10^6 (tri)
			Cell suspension 100% purification:Al(OH)3, adsorption. Inactivation A.E.I. Adjuvants: Al(OH)3 saponins Potency: $6PD_{50}$ (dilution of adjuvants)		

Country and/or Producer	Annual production (average and % for exportation)	Production capacity per month	Method of production (and average potency)	Cost	Number of doses per annum required for systematic prophylactic scheme
FRANCE Rhône Merieux Group (Lyons)	Trivalent OAC 25 000 000	10/12 million doses mono	Frenkel and cell suspension	2 F.F. the mono dose	20 000 000 doses trivalent trivalent
ROGER BELLON (Incorporated into Rhône Meriéux)	10 million trivalent	4 million doses mono	Note: R. Bellon's mehtod of virus purification covered by patent Frenkel 100%		
IRAN	15 000 000 O, A_{22}, C, ASIA-1				
ARGENTINA	175 000 000 OAC				
BRAZIL	300 000 000 OAC				
URUGUAY	45 000 000				
ITALY (Zooprophylactic Institutes)					Over 9 million doses trivalent
- Brescia	Trivalent OAC 10 000 000 doses	Trivalent OAC -Monolayer roller system 1 500 000 -Suspension 600 000	-BHK monolayer roller system -BHK suspension -Potency: 15 Pb_{50}	Sold to the State at Lit. 500 trivalent	
- Padova	Trivalent OAC doses 3 250 000 8% exported	Trivalent 500 000 doses	Cell suspension: potency between 8 and 23	Sold to the State at Lit. 500 trivalent	
- Perugia	1 500 000 trivalent	-Monovalent 750 000 -Trivalent 250 000	BHK 21 cells in suspension	Sold to the State at Lit. 500 trivalent	

Country and/or Producer	Annual production (average and % for exportation)	Production capacity per month	Method of production (and average potency)	Cost	Number of doses per annum required for systematic prophylactic scheme
HUNGARY Phylaxia	average 2 million doses trivalent and 1.5 million doses monovalent Exportation 0%	125 000 doses tri. or 375 000 doses mono	Frenkel International standard quality		2 240 000 doses trivalent vaccine
ROUMANIA Pasteur Institute	- 8 million monovalent doses A, 0, C - no export up to now - available for export about 40 million monovalent doses	5 million monovalent doses	Cell monolayers (on rollers) and Cell Suspension. The vaccine has been delivered with and average potency of 16 PD_{50} for cattle. On demand the vaccine can be delivered at a higher potency.	For export the price is negotiable, depending on the international prices, amount, type and potency required.	8 million monovalent doses
CZECHO-SLOVAKIA	5.5 million doses trivalent A, 0, C Export 0	500 000 doses	Cell suspension BH 21 Antigen concentration Inact A.E.I.	---	5.5 million doses

Country and/or Producer	Annual production (average and % for exportation)	Production capacity per month	Method of production (and average potency)	Cost	Number of doses per annum required for systematic prophylactic scheme
BULGARIA New Lab. Sliven	5 million doses	450 000 doses monovalent	BHK 1 Suspension and monolayer		10 million monovalent doses
GREECE FMD Institute	Bivalent OA_5 100 000 doses, as on stock	100 000 doses	Cell monolayers (on rollers) suspension Inactivation: formalin adjuvant: Al(OH)3 saponin		Vaccination in Buffer zone with FAO vaccine Prophylactic vaccination discontinued
TURKEY	Monovalent 3 600 000 doses O_1/A_{22}/ASIA-1 New Plant production capacity over 40 million doses monov.	 4 million	Cell suspension		15 million doses bivalent, 2 trivalent
BOTSWANA	21 000 000 SAT_1, SAT_2, SAT_3, O.A.C. mônov.	2,5 million	Frenkel		--
U.S.S.R.	150 000 000 monovalent O, A_{22} and C		Frenkel/Lapnized		Whole production for national requirements

Country and/or Producer	Annual production (average and % for exportation)	Production capacity per month	Method of production (and average potency)	Cost	Number of doses per annum required for systematic prophylactic scheme
DENMARK State Veterinary Institute for Virus Research, Lindholm	900 000 doses monov., i.e. 300 000 doses of the types O, A and C as a stock.	500 000 doses monov.	Virus production in BHK cells in suspension cultures. Purification: Chloroform treatment and Kieselguhrfiltration. When stock virus is used: PEG-precipitation prior to above processing. Inactivation: 0.05% formalin pH 8.7 Adjuvant: Aluminium hydroxide. Purified quillaja saponin (to be added immediately before distribution). The vaccines pass a challenge test in guinea pigs and a serological test in cattle.		Vaccination discontinued since 1977
BELGIUM National Institue of Uccle	Trivalent OAC 2 400 000 doses No export	200 000 doses	Frenkel - Potency Potency 4.8 PD_{50}	25 FB the trivalent dose	2 300 000 doses trivalent
NETHERLANDS Ministry of Agriculture Central Vet Institute, Lelystad	Trivalent A, O, C. 4 500 000 doses + monovalent 1 000 000 doses none exported	2 million doses May be doubled by increasing the supply of bovine tongue epithelium	Frenkel Potency: 10 PD_{50} type x dose	D.fl. 0,90+ V.A.T. per mono. dose for cattle D.fl. 1,73+ V.A.T. per mono. dose for pigs	4 500 000 trivalent doses

Country and/or Producer	Annual production (average and % for exportation	Production capacity per month	Method of production (and average potency)	Cost	Number of doses per annum required for systematic prophylactic scheme
AUSTRIA	1 200 000 mono. doses	400 000 mono. doses	Cell suspension Al (OH) adsorption inactivation: Formalin adjuvants Al(OH)$_3$ Quil A potency: A, C 34 PD_{50}		Vaccination at borders 9 000 trivalent doses Prophylactic vaccination around the Institute 3 500 doses trivalent
GERMANY FED. REP. Beringwerk & Bayer	Trivalent OAC 10 000 000 doses 3% export	3.2 million doses	Cell suspension Antigen concentration		
IRAQ	Trivalent O_1, A_{22}, ASIA-1 12 000 000		Cell suspension	US$ 0,48 per triv/dose Monov. ASIA-1 US$ 0,23/dose	
EGYPT	500 000 monovalent	500 000 doses monovalent	Cell suspension		
THAILAND	7 000 000 doses monovalent A, O ASIA-1		Cell suspension and monolayer		
INDIA	10 000 000 monovalent	4 million doses	Cell suspension	--	Cattle population over 200 millions.

Provisional Agenda Item 5

EUROPEAN COMMISSION FOR THE CONTROL OF FOT-AND-MOUTH DISEASE

Forty-seventh Session of the Executive Committee

The Hague, Netherlands, 5-8 March 1985

International Foot-and-Mouth Disease Vaccine Bank

1. Proposals for the introduction of a foot-and-mouth disease vaccine bank have been the subject of consideration and discussion by interested countries under the auspices of both FAO and OIE groups since early in the 1970s. The objective would be to provide an emergency facility for those countries which have never, or rarely in the past, had to use FMD vaccine but wish to be prepared for the remote possibility of having to vaccinate in the face of an outbreak.

2. Over the past year intensive discussions have taken place between the U.K. Republic of Ireland, Australia, New Zealand, Finland, Norway and Sweden about the possibility of establishing such a Bank. Excellent progress has been made and all these countries are now firmly committed to participating in the Bank. It is anticipated that it will be operational during the early part of 1985. The main features of the Vaccine Bank are that:-

(a) It will provide a facility for participating countries to have access to a source of high potency FMD vaccine at short notice should they decide to vaccinate in the face of outbreaks of foot-and-mouth disease.

(b) It will be situated in a special unit at the Animal Virus Research Institute, Pribright (AVRI) and will contain concentrated antigen consisting of the equivalent of 0.5 million cattle doses of each Type C (sub-type C1 - Oberbayern 1973), Type O (sub-type O1 - Lausanne), Type A (sub-type A22 - Iraq and Type A (sub-type A24 - Cruzeiro).

(c) Participating countries will pay a pro rata share (in line with their drawing rights) of the cost of establishing, equipping and initially stocking the Bank and thereafter a pro rata share of running costs.

(d) In the event of an outbreak of FMD occurring in a participating country, and should that country so request, vaccine will be prepared and then despatched by air. The receiving country will be responsible for the cost of replacement of an equivalent amount of antigen in the Bank. It is anticipated that reconstitution of the vaccine will be completed in 4 days.

(e) The Bank will be directed by a Commission made up of the Chief Veterinary Officers of each of the 7 participating countries.

3. An international legal agreement is being prepared which will embody the working arrangements for the Bank and is likely to be signed by all participants early in 1985. Once this is done and the facilities at AVRI have been completed, the antigen will be purchased from the manufacturers which have been agreed by the participating countries.

4. It is also intended to exchange protocols for vaccine production with the North American bank with a view to formulating reciprocal exchange arrangements.

5. FAO would maintain full details of the bank and assist the group in drawing arrangements with other banks.

Provisional Agenda Item 6

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

Forty-seventh Session of the Executive Committee

The Hague, 5-8 March 1985

Cost-benefit study on vaccination policy in Europe

At the Twenty-fifth Session of the European Commission for the Control of Foot-and-Mouth Disease held in Rome in April 1983, the position of FMD prophylactic schemes in Europe was discussed and the tendency to discontinue or reduce vaccination against FMD in a number of countries in Europe was considered to be a matter for concern.

The role played by compulsory vaccination campaigns in reducing the incidence of FMD in Europe has been discussed at almost all meetings of the Commission, and its importance cannot be over-emphasized. However, there is a risk, especially among administrators, that the favourable FMD position achieved to-date in Europe represents the attainment of complete eradication. Such a favourable disease position may be a strong temptation to decrease or change the system as has been the case in a number of countries in Europe. The Commission, having discussed this problem at its Twenty-fifth Session, recommended that European countries undertake a cost-benefit study of the FMD vaccination policy before any decision is taken to change it.

As a follow-up to this recommendation, the Executive Committee at its Forty-sixth Session held in Bonn, Fed. Republic of

Germany, in April 1984, discussed the results of a survey carried out in Europe on this subject (Appendix 3 of the Report of this Session refers) and agreed that data provided by the member countries showed that cost-benefit analysis and evaluation of the present prophylasctis scheme applied in different countries in Europe are not comparable because methods for FMD prophylaxis and control differ from country to country and the benefit to be obtained from each particular programme is very difficult to estimate. Furthermore, the Committee considered that since parameters for a cost-benefit study have now changed in Europe under the present FMD situation, results of cost-benefit analysis need to be reviewed. For this purpose the Committee agreed that a group of selected countries, representing both policies - vaccination and non-vaccination - would undertake a further study to establish a common basis for evaluation which would serve as a model for countries wishing to carry out cost-benefit analysis when reviewing their vaccination policy.

This task was undertaken by the Federal Republic of Germany, The Netherlands and the United Kingdom; a Working Group composed of experts from these three countries and the Secretary of the Commission was set up to study the subject and prepare common criteria which would serve as a model for European countries. The Working Group held two meetings: the first at Weybridge, U.K. on 19/20 July 1984 and the second in Bonn, Fed. Rep. of Germany on 25/26 November 1984.

Following an in-depth discussion and analysis of all factors concerned, common criteria were adopted for the setting up of a document entitled "A Guide to the Economic Evaluation of FMD Vaccination Programmes".

This document is hereby submitted to the Forty-seventh Session of the Executive Committee with a view to its being approved for submission as an Item on the Agenda for the Twenty-sixth Session of the Commission scheduled to be held in

Rome from 23 to 26 April 1985.

This work would not have been possible without the facilities made available by the U.K. and the Federal Republic of Germany who hosted the two meetings. The expertise and valuable contribution of the experts who participated in the preparation of this document is acknowledged: Drs. Mowat, Richardson, Power and Davies, U.K., Drs. Lorenz and Valder, Fed. Rep. of Germany, and Dr. Smak, The Netherlands.