



PAN AMERICAN HEALTH ORGANIZATION

# III INTER-AMERICAN MEETING ON FOOT-AND-MOUTH DISEASE AND ZONOSSES CONTROL

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PRESENT STATUS OF PROGRAMS FOR THE PREVENTION AND CONTROL  
OF FOOT-AND-MOUTH DISEASE AND OTHER LIVESTOCK  
VESICULAR DISEASES - COUNTRY REPORTS

STATUS OF FOOT-AND-MOUTH DISEASE  
CONTROL PROGRAMS (x) 1969

ARGENTINA  
BOLIVIA  
BRAZIL  
CHILE  
COLOMBIA  
ECUADOR  
PARAGUAY  
PERU  
URUGUAY  
VENEZUELA

(x) - This document summarizes the information supplied by the countries on response to the corresponding questionnaire circulated by the Pan American Foot-and-Mouth Disease Center.

BOLIVIA

To prepare a project for a national program foot-and-mouth disease combat, the government of Bolivia contracted the firm of Latinconsult, with the aid of a credit from the Inter-American Development Bank. This study also covers brucellosis and rabies.

In the meantime, some farmers, particularly the dairy farmers, continue vaccinating regularly with a national made vaccine, production of which amounted to 200,000 doses, and also with imported vaccine, estimated a little above 600,000 doses, made in Argentina. The total works out at less than the million doses reported for 1968 and the difference may be attributed to the favorable picture of the disease in Bolivia during the year under review, according to the General Management of Livestock (Dirección General de Ganadería).

With the object of adjusting the national legislation to the requirements of the program being prepared for foot-and-mouth disease brucellosis and rabies control, work was begun on bringing up to date the regulations on animal health inspection (Reglamento de Policía Sanitaria Animal). As regards the first of these diseases, the Government Decree on vaccination was expanded by complementary regulations.

In March 1970 further meetings were held with the Peruvian Animal Health authorities for the purpose of coordinating foot-and-mouth disease combat in the adjacent border regions of the two countries.

BRAZIL

The foot-and-mouth disease combat continued to develop according to foreseen plans, without any structural or technical changes. The federal budget amounted to MCR\$ 560,000 and in the same quantity is maintained in 1970.

It was reached the final study of legislation for vaccine control; the states of Amazonas, Espírito Santo, Pará, Paraíba, Paraná and São Paulo issued FMD laws and the federal government emended the functional rules of the Technical Coordination Team for FMD campaign.

The state of Rio Grande do Sul in mid 1969 had 10,000,000 cattle under systematic vaccination, equivalent to 86% of its total population, which is expected to be completed at the beginning of 1970. In the same manner others 5,000,000 cattle were inoculated in the state of Minas Gerais, Rio de Janeiro, Santa Catarina y São Paulo.

The national production of FMD vaccine went up from 80,000,000 doses in 1968 to 91,000,000 in 1969. It is estimated that besides the 15,000,000 cattle mentioned and which are under systematic vaccinations, there is an equal or higher number vaccinated out of private initiative of livestock farmers.

ARGENTINA

The Sanitary Campaigns' Service (Servicios de Luchas Sanitarias, SELSA), a branch of the Agriculture and Livestock Department, continues to be develop the program against FMD at a national level. There were no structural changes and the budget for 1970 was established at about 45,000,000 pesos, a figure markedly higher than the one corresponding to the fiscal year of 1969.

In June the General Direction of Animal Health issued an official statement determining the province of Chubut as free of FMD. Such, the entire territory (area) located South of the 42nd parallel is considered to be free of this disease. In order to support this action were established several decrees and resolutions, aimed mainly to block or to control animals movement among the affected and the undamaged zones of the country, including the traffic of animals from one area of Chile to another via the Argentinian territory situated south of Colorado and Barrancas rivers. Other legal tools refer to the duty of washing and desinfection of vehicles which transport animals and also for control, marketing and use of vaccines for prevention of FMD in the vaccination area.

Vaccine production reached the figure of 146,000,000 OAC tri-valent doses, according to the necessity and requirements of the program, but only 144,000,000 doses passed the potency test.

SELSA's Diagnosis Laboratory identified FMDV in 1954 establishments with animals affected by vesicular disease, which represents 0,6% of the total 314,000 farms registered in the national program. Virus A Vallée was typed in 58% of the cases, C Waldmann in 30% and O Vallée in the remaining 12%. The respective percentages for 1968 were 76%, 23% and 1%. The significant increase in virus C was due to the appearance of a new subtype, confirmed at the Pan American Foot-and-Mouth Disease Center and its definitive classification depends on essays performed at the World Reference Laboratory for FMD of Pirbright in Great Britain.

SELSA estimated the morbidity during 1969 in 0,5% of the total cattle population, calculating the direct losses in US\$ 300,000. The vaccination program's expenses amounted to US\$ 1,500,000. If such program would have not existed, it is estimated that the losses would have been 20 times higher than the mentioned ones.

In order to coordinate general sanitary measures and the combat against FMD, Argentina signed agreements with Uruguay (7-24-69) and Chile (9-8-69). A draft agreement with Brazil is under study. Besides, an Agreement with BID was enforced for the allotted US\$ 10,500,000 as financial complementation during 4 years for the campaign against FMD which cost will reach a total of US\$ 48,500,000.

475 vesicular outbreaks were established, FMD virus being identified in 348 cases with the following type distribution: virus type O - 184; virus type A - 78; and virus type C - 86. The state of Rio Grande do Sul estimated that the disease reached 0,3% of the cattle belonging to vaccinated herds with a mortality of 0,4% of the affected animals.

The Department of Agriculture considers that the benefits of the campaign are reflected through the marked reduction of FMD incidence, in the milk and byproducts increase, and in the consolidation of the foreign markets for animal products.

For the current year is expected the notification of the financial aid from BID, requested in order to fill out the increase of investments required for the intensification activities of the states involved in the campaign, specially in the Central-south part of the country.

Brazil signed an agreement with Paraguay in order to coordinate the FMD combat within the two countries, with special emphasis on border regions and also in epizootic information exchange as well as technical aid of various forms.

#### COLOMBIA

The Colombian Agriculture and Livestock Institute (Instituto Colombiano Agropecuario - ICA) has continued to pursue the foot-and-mouth disease combat in accordance with the rules set up when the agricultural section of the public administration was reorganized in 1968, so as to assign preferences to the work of extension, education and promotion of private enterprises. Thus the official vaccinators were eliminated and their duties turned over to the responsibility of the stock-raisers themselves, to be carried out with the encouragement, control and supervision of the government.

Negotiations were initiated with the Inter-American Development Bank in order to obtain financial assistance for a National Animal Health Plan which would include a project for combating foot-and-mouth disease and another for brucellosis control. Both have now reached the final stages of preparation, including new legislation for the anti-FMD campaign, which awaits the necessary resolution of the Department of Agriculture. It is expected that the corresponding document will be presented to the IDB towards the middle of this year.

During 1969, four epidemic outbreaks of foot-and-mouth disease were recorded, involving in chronological order the southern center, east and southeast of the country, with greater intensity in the Departments of Cundinamarca, Narino, Meta and Valle del Cauca respectively. For cattle the average morbidity in the affected herds amounted to 11%. In Cundinamarca a new subtype of virus A was isolated, and its characteristics are under study for the corresponding classification.

Were identified viruses belonging to subtype O-1 in the areas of Mariño and Meta while in Valle del Cauca viruses A-27.

In 397 suspected foci of vesicular disease, samples were taken for laboratory diagnosis, resulting in 294 positive and 103 negative. Of the former, 254 (86%) corresponded to foot-and-mouth disease and 40 (14%) to vesicular stomatitis (see details in Table 3 attached).

The action taken and promoted by ICA enabled these outbreaks to be brought under control preventing the spread of the disease all over the country. It is estimated by the authorities that, were there to be no control measures, the annual losses to Colombia through foot-and-mouth disease would exceed 10 million dollars.

As expected from the preceding report, the Colombian Veterinary Products Enterprise (Empresa Colombiana de Productos Veterinarios), attached to the Department of Agriculture, has raised the output of anti-FMD vaccine considerably, from 10 to 14 million doses, with a potential capacity two and a half times greater, of which, 185,000 doses were exported to Ecuador. This laboratory is the only one authorized to prepare anti-FMD vaccine.

In November 1969, the Colombian government signed an agreement with Panama to prevent foot-and-mouth disease in the frontier region of the two countries and it is expected to be implemented in the course of this year.

## CHILE

Various agreements have been signed with the Inter-American Development Bank and the Pan-American Health Organization in order to complete the preparations of the National Plan for the Control of Foot-and-Mouth Disease, for which the commitment of financial aid was obtained from the Bank in July 1968. The first vaccination campaign was scheduled for the second quarter of 1970 in the 4 southern provinces of the affected territory in Chile.

The Agriculture and Livestock Service (Servicio Agrícola y Ganadero - SAG) has a budget of US\$ 2,351,000 to cover activities in connection with foot-and-mouth diseases in 1970, about a quarter of which corresponds to the IDB contribution. The responsibility for carrying out the program is vested in a Specialized Unit for Foot-and-Mouth Disease Control, depending of the Animal Health Subdivision of the SAG. In order to facilitate the work studies are under way for drafting regulations to implement sanitary measures for the control of the disease.

During 1969, the SAG recorded 1,208 outbreaks of vesicular disease, a general morbidity of 1% and case fatality rate of 0.7%.

124 outbreaks were identified as FMD type O, 53 as type A and 7 as type C; 56 samples were found to be negative. Vaccine production amounted to 7,800,000 trivalent doses, tripling the figure for the preceding year.

About 90% of this production came from private laboratories. The government has gone ahead with various measures designed to set up official control of vaccine manufacture, which should come into force in the course of 1970.

At the beginning of this year, foot-and-mouth disease appeared in the province of Magallanes, where there has been no record of any outbreak of the disease for more than 40 years. The government immediately embarked on a plan of activities based on the method of stamping out the disease by slaughtering the sick and contact animals, and for strict measures of quarantine and disinfection.

#### ECUADOR

The Animal Health Center of the Agriculture and Livestock Department created a section for health publications and education, aiming to put more emphasis on the aspects related to the struggle against animal diseases.

During the year Ecuador had to put up with a national wide-spread foot-and-mouth disease epizootic which had severe characteristics.

To intensify the vaccination campaign it was necessary to import vaccines from Colombia (see table), the work being realized in close cooperation with the Sierra Livestock Farmers Association. The epizootic tapered off toward the end of the year.

The Laboratory Department of The Animal Health Center prepared 570,000 doses of foot-and-mouth disease vaccine. To amplify its capacity and to adapt it to requirements, the government ordered the construction and the equipment of various buildings which are now under way. At the same time, was completed the elaboration of a project designed to establish a national system of veterinary diagnostic laboratories, including vesicular diseases, and which will be financed with a special UN fund amounting to US\$ 800,000.

During 1969 were performed 342 laboratory diagnosis of vesicular diseases outbreaks, of which 194 were positive to foot-and-mouth disease virus type O Vallée, 53 positive to virus type A Vallée and 12 to vesicular stomatitis virus of which 11 correspond to virus type New Jersey and 1 to virus type Indiana and 83 samples were proved negative.

The Animal Health Center itself continues to elaborate the project for a National Control Program for foot-and-mouth disease, planned to be submitted to the consideration of the IDB in the middle

of this year to request its financial aid and which will be complemented by similar programs for brucellosis and tuberculosis control.

### PARAGUAY

The National Service of FMD Control (Servicio Nacional de Lucha Antiaftosa - SENALFA) has fulfilled the objectives planned by incorporating the county of Ñeembucú into the campaign area. Systematic vaccination was practiced on 722,600 cattle belonging to 19,444 owners in 39 districts of the Itapúa, Misiones and Ñeembucú counties. On the basis of prior census returns, vaccinations reached around 95% of the cattle population within the campaign area. In accordance with current regulations, the actual work of vaccinating was performed by cattle owners (69%), SENALFA personnel (8%) and certified private vaccinators (23%).

All the vaccine used was imported from Argentina (see Table 2). Meanwhile, plans have gone ahead for installing two producing laboratories, one private and the other official, which may start operating during 1970. In connection with this matter, a decree has been issued prohibiting the import and export of FMD virus and likewise the fractioning of imported FMD vaccines. The training program for the personnel that are to be in charge of the official laboratory for diagnosis, and vaccine production and control has been carried out satisfactorily.

The SENALFA budget for 1970 has been approved with an amount equivalent to 2 million dollars, a figure that duplicate that of the preceding year.

Throughout the country, 89 outbreaks of foot-and-mouth disease were recorded. 44 were traced to type O virus, 28 to type A and 17 to type C. In the campaign area, a morbidity of 0.7% and a mortality of 4 per million were registered for cattle.

Paraguay has signed sanitary agreements with Brazil and Uruguay with the purpose of coordinating the respective FMD campaigns, especially in the border regions, and promoting mutual cooperation.

### PERU

The Agriculture and livestock sections of the public administration has been the object of important structural alterations. The activities connected with foot-and-mouth disease remain under the direction of the Foot-and-Mouth Disease Control Division attached to the Subdivision of Animal Health of the Direction of Animal Production

(Dirección de Ganadería), itself under the General Management of Agriculture and Livestock Promotion (Dirección General de Promoción General Agropecuaria) of the Ministry of Agriculture. For its work in 1970, the equivalent of 255,000 dollars was budgeted.

On the other hand, the National Animal Pathology Center (Centro Nacional de Patología Animal), in charge of the disease and the preparation of FMD vaccines has become part of the National Health Institutes under the name of Zoonosis and Livestock Research Institute (Instituto de Zoonosis e Investigaciones Pecuarias), with no change in functions. In 1969, the production of FMD vaccines reached almost two million doses, but more than two and a half million doses were released for sale, by drawing on reserves carried over from the preceding year. The Institute is the only laboratory producing this vaccine in Peru, and by government Decree, issued in September 1969, the import of vaccines is prohibited.

Official vaccination activities were concentrated in areas bordering Bolivia and Ecuador and in the valleys where livestock is raised intensively, especially in those where dairy-farming is the major enterprise. Emphasis was laid on quarantine and disinfection wherever outbreaks of the disease were reported.

In the course of 1969, 46 outbreaks of foot-and-mouth disease and 9 of vesicular stomatitis were recorded. In the case of the former, the rate of infection was 7% in cattle, 9% in sheep and 80% in hogs on the affected farms. In 23 outbreaks, virus type O was diagnosed, and in 9 virus type C. The direct losses caused by foot-and-mouth disease were estimated closed to an amount of 70,000 dollars. In epizootic years, they have been estimated at more than 2 million dollars.

In accordance with the restructuration of the Ministry of Agriculture, steps were taken to review the project of the National Program for Combating Foot-and-Mouth Disease which is going to be submitted subject to prior acceptance by the National Planning Institute to the ~~Inter-American~~ Development Bank for the purpose of obtaining financial aid. The revision included the study of a Integral Regulations for the Anti-FMD Campaign (Reglamento Integral de la Campaña Antiaftosa) intended to replace the Anti-FMD Vaccination Regulations in force since July 1963.

In the field of international agreements, mention should be made of the meeting at the technical level recently held in La Paz to deal with the animal health problems common to Bolivia and Peru, including therein the consideration of an agreement to control foot-and-mouth disease in the adjacent border regions of the two countries. An agreement was also signed with Colombia to regulate the trade in cattle intended for the Peruvian market.



With Argentina and Chile, an agreement was signed with regard to the technical regulations for the shipment via Chile, of Argentina livestock for reproduction and consumption.

### URUGUAY

In April, the Direction of Combat against FMD (Dirección de Lucha contra la Fiebre Aftosa - DILFA) vaccination program to the entire territory, reaching already a high percentage of coverage. For reasons alien to the campaign, in August the vaccination passed severe upsettings, above all in the southern countries, favoring a temporary recrudescence of the disease. There was a marked intensification of vaccinations toward the end of the year.

In 1969, the uruguayan laboratories produced about 20,000,000 doses of trivalent FMD vaccine, compared to 15,000,000 during the previous year. In the Direction of Combat against FMD (DILFA), the Laboratory Division exerted a strict control of quality and potency of all batches produced, rejecting approximately 700,000 doses. In this work were employed 466 cattle, 2,100 guineapigs and 15,000 suckling mice.

In this span of time 51 FMD outbreaks were registered, the majority scattered in the meridional countries. In general the morbidity was low, the livestock situation continued to be highly satisfactory in what concerns FMD. In 41 cases was isolated virus type A, in 6 virus type C and in 4 virus type O.

A technical mission from IBD visited Uruguay in May and negotiated the use of preliminary funds in the preparation of an assistance plan for the FMD combat. The bank expects that the plan will be submitted during the first semester of 1970.

### VENEZUELA

As a result of the appearance of cases of foot-and-mouth disease in areas that used to be considered disease-free, the vaccination campaign was extended to the states of Ansuátegui, Sucre and part of Monagas. During 1969, 81 outbreaks of foot-and-mouth disease (28 caused by virus type A and 33 by virus type O) and 30 of vesicular stomatitis (28 New Jersey virus and 2 Indiana virus) were recorded throughout the country. Among the identified virus type A, the presence of a strain with the characteristics of a new subtype was observed and is now being studied.

There have been no structural changes in the Ministry of Agriculture, except for a new administrative division of the country into 8 zones for purposes within its own range of action. The budget for the anti-FMD campaign amounted to US\$ 2,178,00, which was about 5% above that of 1968. Animal Health Division studies assign a figure close to 10 million dollars to the average yearly losses suffered by Venezuela in the absence of the campaign now being carried out by the Ministry of Agriculture and Livestock.

The Veterinary Research Center (Centro de Investigaciones Veterinarias) produced 8,370,000 bivalent OA doses of anti-FMD vaccine, which is the only product authorized in the country. This quantity was enough for the routine requirements of the campaign. Negotiations are now being conducted with the Inter-American Development Bank for the grant of a credit of US\$..... 4,283,333 to finance part of the campaign to control foot-and-mouth disease and brucellosis and to build 6 regional diagnostic laboratories.

Venezuela continues collaborating with Brazil and Guyana in the control of foot-and-mouth disease in the border areas common to the 3 countries.

AFFECTED COUNTRIES SUMMARY

In South America the year 1969 was characterized by the sustained progress of activities devoted to the combat of FMD and is worth mentioning the increased participation of IED through its financial assistance, which started to overpass the FMD orbit and became interested in other animal diseases, a fact of outstanding socio-economic repercussion.

The complementary loans granted for the FMD programs in Argentina, Chile and Paraguay represent a figure higher than US\$ 15,000,000. In addition preliminary loans were granted to Bolivia, Ecuador and Uruguay in order to prepare their respective projects for presentation to IED during the current year. Brazil finished its project for the first step of FMD control, in the states of Bahia, Espirito Santo, Minas Gerais, Paraná, Rio Grande do Sul, Santa Catarina and São Paulo. For this project, the Bank is taking into consideration an aid request in the amount of US\$ 13,600,000. In the meantime it is expected the presentation of projects from Colombia, Peru and Venezuela, when all the South American affected countries will be backed by the financial aid of IED. This fact in addition with technical advice from Pan American Foot-and-Mouth Disease Center will constitute valuable elements bound to insure vital regional coordination.

Ecuador was the only country to suffer an wide spread attack of foot-and-mouth disease with epizootic characteristics. Argentina, Colombia, Chile, Paraguay and Venezuela had localized epizootics, while the disease was benign and of low incidence in the rest of the countries. This favorable picture reflects the development stage attained by the official veterinary services, the disponibility of wider resources and an ever growing participation of the livestock farmer's community. Are fully known the possibilities and the progress requirement in all these areas to strenghten the combat against FMD on the South American continent. For this reason, the activities and plans worked out by the countries, allow to assume that 1970 will be a year of significant improvement in the combat of FMD in South America.

Table 1. INVESTMENT OF THE COUNTRIES IN THE AFFECTED AREA,  
IN NATIONAL FOOT-AND-MOUTH DISEASE PROGRAMS

(in US\$)\*

Country	1969	1970	Observations
Argentina	3 965 710	12 838 000	
Bolivia	50 000	380 000	Overall budget of the Livestock Technical Service
Brazil	1 554 000	1 554 000	Overall budget of the Federal Government
Colombia	2 352 940	2 600 000	Animal Health in general
Chile	2 006 377	2 351 000	
Ecuador	735 000	735 000	
Paraguay	1 090 560	2 086 650	
Peru	200 000	255 000	
Uruguay	432 000	...	
Venezuela	2 094 190	2 178 000	

\* Official exchange rate

... Information not available

**Table 2. PRODUCTION OF FOOT-AND-MOUTH DISEASE VACCINE IN COUNTRIES**

**IN THE AFFRICA AREA**

( in millions of doses)

Countries	Doses approved	Potential capacity	Vaccines exported	
			Doses	Destination
Argentina	144,0	300,0	0,638 5,550 0,095	Bolivia Paraguay Peru
Bolivia	0,2	0,5	-	-
Brazil	91,5	140,0	-	-
Colombia	14,3	35,0	0,815	Ecuador
Chile	7,8	10,7	-	-
Ecuador	0,6	1,2	-	-
Paraguay *	-	-	-	-
Peru	1,9	5,0	-	-
Uruguay	20,0	60,0	-	-
Venezuela	8,4	12,5	-	-
<b>Total</b>	<b>288,7</b>	<b>564,9</b>	<b>7,098</b>	

\* Laboratories under construction

**Table 3. TYPING OF FOOT-AND-MOUTH DISEASE AND  
VESICULAR STOMATITIS SAMPLES\***

Countries	Foot-and-mouth disease			Vesicular stomatitis		Neg	Total
	O	A	C	NJ	Ind		
Argentina	235	1 114	575	-	-	...	1 954
Bolivia	16	3	...	-	-	...	19
Brazil	184	78	86	-	-	127	475
Colombia	123	131	-	27	13	103	397
Chile	123	52	7	-	-	59	241
Ecuador	194	53	-	11	1	83	342
Paraguay	44	28	17	-	-	-	89
Perú	23	14	9	3	6	...	55
Uruguay	4	41	6	-	-	...	51
Venezuela	33	48	-	28	2	...	111

\* Table published in "The Epidemiological Report on Foot-and-Mouth Disease and Vesicular Stomatitis" Vol. 1 N° 3, adapted according to data provided by the countries for RICAZ/3

... Unavailable data