



PAN AMERICAN HEALTH ORGANIZATION



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

WORLD HEALTH ORGANIZATION

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STATUS OF FOOT-AND-MOUTH DISEASE

CONTROL PROGRAMS (Summary) * 1968

ARGENTINA

BOLIVIA

BRAZIL

CHILE

COLOMBIA

ECUADOR

PARAGUAY

PERU

URUGUAY

VENEZUELA

* This document summarizes the information supplied by the countries in response to the corresponding questionnaire circulated by the Pan American Foot-and-Mouth Disease Center

ARGENTINA

The intensity of the foot-and-mouth disease control campaign shown in the last few years has not decreased, nor have any significant changes been made in the structure of the institution responsible for it. The budget assigned to it totalled US\$3,965,710, which represents more than 60% of the appropriation for animal health activities as a whole. A similar figure is earmarked for 1969 (see Table 1).

In the legislative domain a few changes have been made which will, no doubt, have a favorable repercussion on the program for the prevention of foot-and-mouth disease. Foremost among these new measures are compulsory vaccination of sheep and calves of any age and the lengthening of quarantine of infected premises.

Production and application of the vaccine can be seen on Table 2, which also lists these data for the other countries. There was an increase of 30 million doses over the production figures for the previous year, a small part being exported to Bolivia, Paraguay and Peru. The number of cattle vaccinated was approximately the same as for 1967, and represented about 90% of the total population.

The disease continued to appear with a fairly low prevalence, without causing outbreaks of an epizootic nature. Table 3 gives some data on the incidence and typing of the virus for all the South American countries. In Argentina it was possible to identify the causative agent in 1,427 establishments attacked by foot-and-mouth disease where the overall infection and lethality of the disease were rated at 10,6% and 0,05% respectively. In 1,073 cases virus A was typed, in 329 virus O, and in 20 virus C.

The general morbidity for cattle was estimated at 0,6%, the direct effect of which, added to the cost of the campaign, would amount to six and a half thousand million pesos. Without the vaccination campaign, the loss would have been twenty-seven million pesos, on the base of a presumed morbidity of 10%.

In August the Animal Health Branch of the Ministry of Agriculture announced that the Government had declared the province of Santa Cruz and the national territory of Tierra del Fuego, in the Patagonian region, free from foot-and-mouth disease.

Argentina concluded agreements with Chile and Paraguay, separately, to coordinate the fight against foot-and-mouth disease, and obtained from the Inter American Development Bank (IDB) a loan of ten and a half million dollars for expansion of the official vaccine control laboratory and renewal of the field equipment of the campaign.

BOLIVIA

The general picture of foot-and-mouth disease has not undergone any important change, and progress continues to be made with the study and planning for a nation-wide program that is to be set up.

It is expected that by the middle of this year, it will be possible to submit a project for structuration of a program for the control of foot-and-mouth and other animal diseases to the consideration of the Inter American Development Bank - a program that it is expected will be carried out with the financial help of the Bank.

Presently, and apart from a small vaccination pilot plan in Cochabamba - which is being carried out in cooperation with the Pan American Foot-and-Mouth Disease Center - control activities are restricted to cattlemen in some areas of the country who continue to vaccinate on their own. The National Animal Biology Institute of the Ministry of Agriculture produced 500,000 doses of vaccine against foot-and-mouth disease, which represents an increase of one-third over the previous year's output. Even so, about 600,000 doses were imported from Argentina and Brazil.

During 1963, the Bolivian authorities recorded 15 cases of foot-and-mouth disease, identifying a predominance of virus types C and A. It is estimated that the yearly loss entailed by the disease runs to around US\$7,800,000.

Negotiations are being pursued with Peru with a view to establishing a coordinate foot-and-mouth disease control program in the border regions of the two countries.

BRAZIL

The National Foot-and-Mouth Disease Campaign of the Ministry of Agriculture has been transferred to the Central Office of Planning and Control, where it is the responsibility of an Animal Production Office. The Federal program continues to cover promotion and coordination of the State programs, which now include Bahia and new areas in the southern region.

The Federal appropriation for combatting foot-and-mouth disease amounted to 2,300,000 new cruzeiros for 1963, and 6,200,000 are earmarked for 1969. This does not include the State campaigns.

New legislation is being studied for the control of vaccines and sera against foot-and-mouth disease. Furthermore, substantial alterations are to be made in the organization of programs for the regions that do not yet have any, derived from the new policy of stimulating private professional activity.

The most important working area continues to be the state of Rio Grande do Sul, where more than 24 million doses of vaccine were applied in more than 3 million head of cattle that represent 70% of the total herd in that state. The overall mortality of the disease in Rio Grande do Sul is estimated at 0,25%, with a lethality of 0.5%.

In the rest of Brazilian territory, about 55 million doses of vaccine were given, and while this represents a considerable increase, it is still not enough adequately to immunize the national herd of cattle, estimated at 30 million head. The installed production capacity of private laboratories in Brazil amounts to 140 million doses. Hence, if this index is to be raised, new areas must be brought within the scope of the national plan.

To appreciate the effect of the campaign for the prevention of foot-and-mouth disease, it has been estimated that 3 years of activity in Rio Grande do Sul have meant for the economy of this state the possibility of avoiding the death of about 250,000 head of cattle and infection of a total 3¹/₂ million.

On the international level, it may be mentioned that Brazil is developing a campaign to promote foot-and-mouth disease vaccination in Roraima Territory, so as to prevent the spread of the disease to the neighboring stockraising areas of Guyana and Venezuela, countries with which an agreement is being considered that will strengthen action and ensure continuity. At the same time, a cooperative foot-and-mouth disease agreement with Paraguay is being studied.

The government has submitted to the IDB a project of financial aid to the value of 9 million dollars to enable integration of the national campaign against foot-and-mouth disease to be accelerated.

COLOMBIA

The reorganization of public administration in this country in 1968 hampered the normal development of official activities relating to the combat of foot-and-mouth disease, which remained at much the same level as described in the report for 1967. The Colombian Institute of Agriculture (ICA) assumed all responsibility for animal health, top priority has been accorded to the prevention of foot-and-mouth disease. The animal health appropriation of the Ministry of Agriculture, which was 9 million Colombian pesos in 1968, is estimated at 40 million for 1969.

The former Colombian Zooprophyllactic Institute, now the Colombian Enterprise of Veterinary Products (Empresa Colombiana de Productos Veterinarios) is the only laboratory authorized to produce vaccine against foot-and-mouth disease. Apart from an official vaccination program on

the Ecuadorian frontier and another near Panama, the use of vaccine falls very largely to the initiative of the cattle owners under the advice and supervision of official veterinary services. In 1968 the production of vaccine was estimated at 15 to 18 million doses, but potential capacity is almost 3 times that figure.

There are no reliable statistics of the incidence of the disease. Samples from 362 establishments affected by vesicular diseases were tested, results being 243 positive to foot-and-mouth disease, 49 to vesicular stomatitis and 120 negative (see Table 3).

The small cattle population of Leticia, situated on the Amazon River and separated from the greater part of the Colombian herd by a large area of uninhabited forest was declared free of foot-and-mouth disease after the outbreak in the second half of 1967 - the first ever reported in this area - had been eradicated.

Colombia has not made detail studies on the economic losses caused by the disease, which is estimated at 200 million Colombian pesos. The negative effect of its prevalence, however, is reflected in the difficulties and limitations met with by the country in developing its potential export markets for cattle and animal products.

In 1968 a loan was obtained from the Inter American Development Bank for the construction of a new laboratory for the production of foot-and-mouth disease vaccine and other biological products for veterinary use. A national project for the control of foot-and-mouth disease is now being prepared, and financial aid from IDB will be requested.

The official vaccination campaign in cattle raising zones near Ecuador and Panama has continued in fulfillment of the existing agreements with those countries.

CHILE

The foot-and-mouth disease control activities in the country have not altered to any extent worth mentioning.

The Animal Health Subdivision of the Ministry of Agriculture has proceeded with its normal operations of controlling cases of foot-and-mouth disease, encouraging voluntary vaccination, educating the public and promoting a certain number of local vaccination campaigns to be used as preparatory examples for the national plan now ready to start.

Towards the middle of the year, the Inter American Development Bank approved the application for a loan made by the Chilean Government

to help in financing the National Foot-and-Mouth Disease Control Plan. The negotiations were highly successful and the IDB granted a loan of US\$2,300,000. In 1969 it is proposed to invest about half this sum, while the Government is to contribute US\$773,705. The final steps are being taken and preparations made to get the program under way.

Meanwhile, in 1963 Chile produced $4\frac{1}{2}$ million doses of foot-and-mouth disease vaccine out of a potential capacity a little higher than 10 million. Theoretically, this output should be sufficient to meet the total requirements of the country.

During the year considered in the report, outbreaks of foot-and-mouth disease on 1,654 cattle ranches were reported to the animal health authorities (see Table 3). Where it was possible to collect data, a morbidity of 14% was determined and a lethality of 0.6%.

In September an Animal Health Agreement was concluded between Chile and Argentina dealing with foot-and-mouth disease, the main object being to coordinate the efforts of the two countries to control the disease.

ECUADOR

The Animal Health Center of the Ministry of Agriculture continued to tackle the problems of foot-and-mouth disease by controlling cases and regular vaccination, the vaccine used being prepared in the official laboratory at Guayaquil or imported in small quantities from Colombia (Table 2).

The services of a technical firm were contracted to cooperate with the animal health authorities in the preparation of a Program for the control of Foot-and-Mouth Disease, on a nation-wide scale. This program will form part of the national plan for developing stockraising, for which financial support from the Inter American Development Bank is expected. An investment of 5 million dollars spread out over 5 years, including the probable loan of a quarter of this sum from the IDB, is estimated as being necessary for a program of control of foot-and-mouth disease. At the beginning of this year, the Bank granted an application for technical assistance to Ecuador to partially finance the preparation of the final plan for the national foot-and-mouth disease campaign.

During 1968, Ecuador identified foot-and-mouth disease on 103 properties (Table 3). No information is available on morbidity or losses incurred.

About half a million head of cattle were vaccinated in different regions of the country.

Ecuador suggested that it would be advisable to review the agreement in force with Colombia since 1964 for control of the disease in the border region of the two countries, so as to adjust it to current requirements.

PARAGUAY

As foreseen, the National Foot-and-Mouth Disease Control Campaign came into action in June 1968, under the responsibility of the National Foot-and-Mouth Disease Control Service (SENALFA). To this end, a number of decrees and resolutions were dictated in accordance with Law 1267 for the purpose of normalizing the trade in vaccines, control and injection procedures, zoning campaign areas, fixing compulsory vaccination periods, etc.

As Paraguay is not yet in a position to prepare its own vaccine (plans for building the laboratory are ready), the necessary quantity for the campaign was imported from Argentina, in accordance with an agreement between the two countries (see Table 2). By the end of the year the campaign had covered almost 420,000 head of cattle, in 26 districts in the departments of Itapúa and Misiones and 5 in Neembucú, and representing 7% of the estimated total cattle in the country.

In the course of one year (April 1968 and March 1969), SENALFA recorded the presence of foot-and-mouth disease on 87 cattle ranches, and succeeded in determining the causative virus in 44 cases (Table 3), by diagnosis performed at the Pan American Foot-and-Mouth Disease Center. A diagnosis service for vesicular diseases in Paraguay forms part of project for a foot-and-mouth disease laboratory to be built with the financial assistance of the Inter American Development Bank. In response to an application from Paraguay, the IDB approved, in 1968, a loan of US\$2,300,000 for the laboratory project and other campaign requirements.

The estimate of the annual losses caused by the disease, formerly evaluated at 8 million dollars, have not been brought up to date. It is considered nevertheless that the campaign for the prevention of foot-and-mouth disease, besides lowering the incidence of the disease, is bringing multiple indirect benefits, the most important of which are an improvement in the organization and management of the herds, and the assistance and advice on general matters of animal health and production provided by the campaign veterinarians.

To coordinate the work of control with neighboring countries, an agreement of technical cooperation in the field of foot-and-mouth disease has been concluded with Argentina and the first steps are now being taken to establish similar agreements with Brazil and Uruguay, respectively.

PERU

Owing to budget trouble and the difficulties common to any administrative reorganization, it has not been possible to make any headway with the national projects for control of foot-and-mouth disease, most of the action taken being restricted to what has already been described in the report for 1967.

The establishment of the National Corporation of Agricultural and Animal Production, which has been commissioned to deal with animal health problems, opens up a prospect of definitively embarking on an integral plan, which will be submitted to the Inter American Development Bank, whose financial cooperation is requested.

In preparation for this campaign, new legislation is being studied. It is estimated that the government outlay on control of the disease amounted to about 200,000 dollars in 1968 and a similar sum is expected to be spent in the course of the present year.

The official laboratory for the production of foot-and-mouth disease vaccine, which has a capacity of 5 million doses, prepared a quantity equivalent to about half this figure. On the other hand, small amounts were imported from Uruguay and Argentina (Table 2).

On 39 ranches that suffered from foot-and-mouth disease, it was possible to type the causative virus, type O being found 6 times and virus A 33 times. The total number of establishments affected is unknown.

For the reason specified in the previous report, agreements have not been signed with Bolivia and Ecuador for the coordination of the foot-and-mouth disease control activities on their border. Nonetheless, considerable benefit has been derived from a permanent exchange of technical information.

URUGUAY

Highly significant efforts have been made to fight the disease. In March, the official animal health laboratory started an effective control of all the vaccine produced in the country, which amounted to 15 million doses. In the month of August, the personnel of the campaign began the first stage of systematic government-supervised vaccination assigning priority to the zones bordering Brazil. By the end of the year, about 4½ million head of cattle, or more than half the country's total holdings, had been covered by the program.

In 1968, US\$432,000 were earmarked for the control of foot-and-mouth disease.

The animal health situation as regards foot-and-mouth disease was most satisfactory. Only 5 cases were reported, on 5 ranches, and the animals had either not been vaccinated or the vaccination was out-of-date. One case was caused by type O virus and the others by virus A. Virus C has not been diagnosed in Uruguay for 2 years.

Agreements of technical assistance have been worked out and are ready for signing with Argentina and Paraguay, dealing especially with the exchange of technicians, information and materials for study.

In the course of the year, Uruguay received the visit of an IDB mission, which was acquainted with the interest of the country in receiving financial assistance in order to strengthen and speed up campaign activities for the prevention of foot-and-mouth disease.

VENEZUELA

The control of foot-and-mouth disease in Venezuela has followed the same general lines as previously. The Ministry of Agriculture appropriation for these activities in 1968 totalled 8,776,000 bolivares and for the current year an outlay of more than 9 million is foreseen.

The production of vaccine, handled by the Veterinary Research Center, amounted to 3 million doses, which were applied by the official veterinary services in the various states.

The number of establishments attacked by foot-and-mouth disease was recorded as 67. On 5 occasions virus A was identified and virus O in 62 cases. The morbidity for the bovines infected was estimated at 15% and the mortality at 1%. The consequent losses were evaluated at 31 1/2 million bolivares, whereas, without the campaign, they might well have been above 42 million.

Like other countries, Venezuela believes that a side benefit of the campaign for control of foot-and-mouth disease consists in the introduction of better techniques for handling and taking care of the herds and the indispensable communication between the cattle ranchers and the technical services of the government.

Venezuela is examining the project of an agreement to control the disease together with Guyana and Brazil in the border zone of the three countries.

AFFECTED COUNTRIES SUMMARY

In South American countries as a whole, priority continues to be accorded to the fight against foot-and-mouth disease, within the animal health programs intended to protect the livestock industry, with direct repercussion on the international market and the domestic supply of high-quality protein.

Argentina, Brazil, Paraguay, Uruguay and Venezuela maintained or began campaigns of nation-wide scope. The other countries affected continued to promote local plans and the voluntary use of vaccines by the cattlemen themselves, while all are making preparations and entering into negotiations for organizing action in a multinational way over the whole continent.

A significant point of the greatest importance was the effective supply of financial assistance by the Bank of Interamerican Development to complement the countries' investments for the control of the disease. Three of them, Argentina, Chile and Paraguay, have been the first to benefit by this recourse which undoubtedly points to a sound way of supporting the fight against animal diseases.

An idea of the progress being made can be appreciated from the constant increase in the production of foot-and-mouth disease vaccine, which is a basic element of these campaigns. More than 300 million doses were prepared in South America during the year 1968 and almost all of them applied. This figure is more than one-tenth higher than that for the previous year and three times more than that for 1962, the year in which the first national campaign was launched in Argentina.

The favorable effect of permanent organized activities to prevent foot-and-mouth disease is to be seen in the lower incidence of the disease in the countries and areas with programs, in the lesser gravity of cases when they occur, and in the side effects derived from professional assistance, which has built up confidence and better communication between the cattlemen and the competent government authorities.

Another positive factor that is promoting indispensable continental action to combat this scourge has been the conclusion of binational and multinational animal health agreements, specifically for the control of foot-and-mouth disease, and likewise the negotiations now under way for arriving at new agreements. The Pan American Health Organization, through the Pan American Foot-and-Mouth Disease Center, and the Inter American Development Bank, in common accord, favor and support these negotiations.

**Table 1. INVESTMENT OF THE COUNTRIES IN THE AFFECTED AREA,
IN NATIONAL FOOT-AND-MOUTH DISEASE PROGRAMS**
(in US\$)

Country	1968	1969	Observations
Argentina	3,965,710	3,965,710	For 1969, the IDB approved a loan of US\$10,500,000
Bolivia	50,000	50,000	
Brazil *	703,750	1,554,250	
Colombia	529,410	2,352,940	For the whole Animal Health Program
Chile	-	2,006,377	Including US\$ 1,232,672 of financial aid from the IDB
Ecuador	...	...
Paraguay	168,223	1,090,566	Including US\$ 758,000 of financial aid from the IDB
Peru	200,000	200,000	
Uruguay	432,000	432,000	
Venezuela	1,956,690	2,094,190	
Total	8,005,783	13,746,033	

... Information not available

* Not including investments made by state governments

Table 2. PRODUCTION OF FOOT-AND-MOUTH DISEASE VACCINEIN COUNTRIES IN THE AFFECTED AREA

(in millions of doses)

Countries	Doses approved	Potential capacity	Vaccines exported	
			Doses	Destination
Argentina	185	300	0,042 2,533 0,025	Bolivia* Paraguay Peru
Bolivia	0,5	0,7	-	-
Brazil	80	140	0,030	Paraguay Bolivia*
Colombia	10	40	0,260	Ecuador
Chile	4,5	10	-	-
Ecuador	...	...	...	...
Paraguay	-	-	-	-
Peru	2,3	5	-	-
Uruguay	15	60	0,055	Peru
Venezuela	8,5	12	-	-
Total	305,8	567,7	2,945	

... Information not available

* Bolivia reports an approximate importation of 600,000 doses, probably divided up between Argentina and Brazil

Table 3. INCIDENCE OF VESICULAR DISEASES IN THE COUNTRIES
IN THE AFFECTED AREA IN 1968

Countries	FOOT-AND-MOUTH DISEASE					VESICULAR STOMATITIS	
	No of typings	Types of virus identified				N.J.	Ind.
		O	A	C	without diagnostic		
Argentina	1,427	329	1,078	20	...	...	...
Bolivia	29	...	...	...	...	...	...
Brazil	268	177	55	36	...	...	...
Colombia	243	166	77	-	120	38	11
Chile	250*	55	192	2	1,404	-	-
Ecuador	103	34	69	-	...	...	...
Paraguay	44	27	4	13	43	-	-
Peru	39	6	33	0	...	...	...
Uruguay	20	1	19	0	...	-	-
Venezuela	67	62	3	-	...	...	...

* One sample was found to be positive to viruses A and B

... No information available

