# SOUTH AMERICAN COMMISSION FOR THE CONTROL OF FOOT-AND-MOUTH DISEASE XI REGULAR MEETING

Rio de Janeiro, Brazil, May 10-11, 1984

FINAL REPORT

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The XIth Regular Meeting of the South American Commission for the Control of Foot-and-Mouth Disease (COSALFA) was held on May 10 & 11, 1984, at the Pan American Foot-and-Mouth Disease Center (PAFMDC) in Rio de Janeiro, Brazil. The meeting was attended by representatives from Argentina, Bolivia, Brazil, Colombia, Chile, Ecuador, Guyana, Paraguay, Peru, Uruguay and Venezuela. Observers were also present from those countries, as well as from the United States of America, Suriname, the Inter-American Development Bank (IDB), Commission of the European Communities (EEC), European Commission for the Control of Foot-and-Mouth Disease (ECCFMD), Food and Agriculture Organization of the United Nations (FAO), Inter-American Institute for Cooperation on Agriculture (IICA), International Office of Epizootics (OIE) and the Pan American Health Organization (PAHO) (Appendix I).

The answers received to the correspondence sent out by the Secretary ex officio included confirmation of the attendance of international agencies, while several countries regretted being unable to honor us with their presence.

In accordance with the COSALFA bylaws, Dr. Patrick L. McKenzie, the Representative from Guyana, chaired the Meeting. After cordially welcoming the representatives and observers from the countries and international agencies, he emphasized that despite the economic hardships facing the member countries, COSALFA has been the coordinating mechanism for establishing the bases for foot-and-mouth disease control and eradication. Of significant importance have been the decisions regarding sanitary procedures to facilitate the production, control and marketing of foot-and-mouth disease vaccine, the criteria for achieving disease-free areas and, especially, the strategic alternatives for combating the disease. As examples of eradication goals he mentioned foot-and-mouth disease in Mexico and Denmark, and African swine fever in countries of the region.

The Secretary proposed the Meeting agenda based on the recommendations passed at the preceding Regular Meeting of COSALFA. The agenda was approved without modification (Appendix II).

## A. REPORT OF THE SECRETARY EX OFFICIO

Dr. Raul Casas Olascoaga, Director of the PAFMDC and Secretary ex officio of COSALFA, presented a report on the action carried out by the Secretariat since the conclusion of COSALFA-X:

- Compliance with the resolutions passed at that Meeting;
- Other matters.

## 1. COMPLIANCE WITH THE RESOLUTIONS PASSED AT COSALFA X

## Resolution II - COSALFA Bylaws

The Member Countries had approved the new COSALFA Bylaws by means of Resolution II passed at the Xth Regular Meeting held in Asunción, Paraguay, on March 10 & 11, 1983.

Some of the Bylaws' articles can not be put into practice until the Bylaws are recognized by the Foreign Ministries of the Member Countries. This is particularly true with respect to the active exercise of the Chairmanship, the appointing of committees, and funding. However, action proceded with the intention of attaining the Commission's objectives.

## Resolution III - Procedures to obtain recognition of the COSALFA Bylaws by the Countries' Foreign Ministries

In conjunction with the Brazilian Ministry of Agriculture, the Secretary ex officio put forth great effort during the entire period to comply with this Resolution. On behalf of COSALFA, the Secretary personally delivered to the Secretary-General of the Brazilian Foreign Ministry a document dated May 2, requesting recognition of COSALFA as a Subregional Institutionalized Commission. The request, submitted with a copy of the new Bylaws, was explicitly supported by Brazil's Minister of Agriculture. On May 12th, he forwarded a letter to his colleague, the Foreign Affairs Minister, recommending favorable action on the matter.

During the period the ex officio Secretary had several meetings and telephone contacts with staff of the various divisions of the Ministry of Foreign Relations, in order to speed up action on the request for official recognition.

On March 20, 1984, the National Secretary of Brazil's Department of Agricultural Defense sent to the Secretary of COSALFA a copy of the official opinion issued by the Foreign Minister to the Minister of Agriculture. A copy of that opinion has been passed out among the Members. It is believed that this matter deserves further attention under the Other Matters section of this Meeting's agenda.

# Resolution IV - Action by the COSALFA representatives to obtain recognition of the Bylaws from the Foreign Ministries of their respective countries

Action on this Resolution, with regard to steps to be taken in each of the member countries for recognition of the COSALFA Bylaws, is pending a final decision by Brazil's Ministry of Foreign Affairs.

# Resolution V - Document "Facts and progress in foot-and-mouth disease control in South America during the 1971-1981 Ten-year period"

In accordance with this Resolution, the PAFMDC, on December 1, 1983, sent out to all countries in South America, Central America and Panama, the final edition of the document entitled "Facts and progress in foot-and-mouth disease control in South America in the 1971-1981 ten-year period".

## Resolution VI - Evaluation of the progress achieved in the implementation of foot-and-mouth disease control policy and strategies

A discussion of the progress achieved in the implementation of the recomendations of the document "Policy and strategies for foot-and-mouth disease control in South America during the 1981-1990 ten-year period" has been placed on the agenda of this Meeting.

All the countries have sent to the Secretary their comments on the respective plan of action. Based on those documents the PAFMDC has prepared a consolidated report with special emphasis on the subregional spheres. This report has been distributed to the participating Members (Appendix III).

## Resolution VII - "Manual of procedures to preserve, expand and achieve footand-mouth disease-free areas in South America"

The Pan-American Foot-and-Mouth Disease Center has issued the final version of the document entitled "Manual of procedures to preserve, and achieve foot-and-mouth disease-free areas in South America." The document contains observations made during the Tenth Regular meeting of COSALFA. Copies have been passed out to the participants at the present Meeting.

Although during the period in review the PAFMDC's cooperation was not specifically requested for the implementation of the Manual, the matter has been incorporated in detail in the assistance rendered by the Genter to Argentina, Brazil, Colombia and Peru in the analysis of the feasibility of establishing disease-free areas in those countries.

## Resolution VIII - International seminar on Epidemiological Surveillance and Information Systems

The recommendations issued by the International Seminar on Epidemiological Surveillance and Information Systems were analyzed. By means of this

Resolution COSALFA adopted the following recommendations:

## Recommendation I - Orientation of the vesicular disease epidemiological surveillance and information systems

All the national foot-and-mouth disease control programs in the South American countries are currently in a phase of readjusting for a new stage based on the knowledge of the disease's regional behavior, which they have acquired over the years. This knowledge is the result of the development of their epidemiological surveillance and information systems. However, Uruguay, Rio Grande do Sul (Brazil) -- with regard to control actions -- and Chile -- with regard to preventive action -- have achieved important advances in the systematic application of epidemiological maps based on the temporal behavior of foot-and-mouth disease and on the flows of animal transit. These maps have facilitated coordinated action with very favorable results on footand-mouth disease control, as both the area of occurrence and the frequency of outbreaks have been significantly reduced. Moreover, Chile has modified the monitoring and communication procedures and implemented a followup of the epidemiological situation in the neighboring countries. Ad-hoc communication mechanisms have also been setup as, for example, within the animal health services in Argentina.

# Recommendation II - Organization of the use of information in the epidemiological surveillance of vesicular disease

No relevant advances have been recorded.

# Recommendation III - Use and handling of the indicators for epide-miological surveillance of the vesicular disease

During the past two years all the national foot-and-mouth disease control programs have characterized the disease's epidemiological behavior in the respective countries, by utilizing the information produced over the years by the information and surveillance system. To achieve this characterization, the indicators proposed by the Pan American Foot-and-Mouth Disease Center have been extensively applied.

A methodological description of those indicators, applied specifically to the epidemiological situation in the state of Rio Grande do Sul, Brazil, was recently published in Portuguese.

The PAFMDC began to provide the countries with consolidated information on the level of endemism.

# Recommendation IV - Use of socio-economic indicators in epidemiolo-gical surveillance of vesicular diseases

Socio-economic indicators have not yet been incorporated into systematic use in the national epidemiological surveillance programs. In most of the countries significant progress has been made in the characterization of the socio-economic structure of the livestock production as an indicator of the risk and interpretation of foot-and-mouth disease outbreaks. In this regard Ecuador has undertaken an analysis of the livestock production structure to explain and control an epidemic outbreak in the eastern section of that country. On the other hand, the evolution of the livestock cycles and, consequently, of the prices of cattle, have demonstrated their usefulness in Argentina for interpreting the foot-and-mouth disease outbreak in the provinces of Río Negro and Neuquén, beginning in 1983, and also including the prediction of the risk of introducing the virus into Chile.

This same livestock cycle, together with the economic recession, permitted a better understanding of the sharp drop in the disease during 1982, its increase in 1983, and the prediction of a major increase in epidemiological risk in 1984. This situation had in fact been anticipated in the report "Situation of the Foot-and-mouth Disease Control Programs in South America" submitted to COSALFA X last year.

# Recommendation V - Adjustment of epidemiological surveillance and control measures in low - or no - frequency areas

Due to the very low frequency of foot-and-mouth disease in Uruguay and Brazil's state of Rio Grande do Sul, alarm mechanisms have been instituted to hasten the control and extermination of outbreaks, thus prevent the appearance of secondary outbreaks.

Only slight progress has been achieved with respect to ongoing observation of those areas where virus is handled (vaccine-production and efficiency-control laboratories).

# Recommendation VI - Epidemiological studies and special measures for control of foot-and-mouth disease type C virus

No progress has been made in complying with this recommendation. It would be necessary to increase the collection of specimens in order to attain a more intense tracking and more accurately identify the areas with type C virus activity.

# Recommendation VII - Epidemiological surveillance for the prevention of exotic diseases

An outstanding example in this regard is the effort expended by the

Division of Livestock Protection in Chile, which has organized an "Epidemiological surveillance and information system for the prevention of exotic diseases." Through this system Chile has been able to characterize the risks of introduction via several points of entry. Chile has characterized its borders with neighboring countries, especially focusing on the risk of introducing foot—and—mouth disease through the summer pastures in the Andean mountains located near similar pasturelands on the Argentine side of the border. Chile has also characterized the risks of introducing the disease through ports and airports by means of goods, passengers, equipment, waste and garbage. The risks of spreading foot—and—mouth disease within Chile have also been characterized, depending on the material entering the country, the point of entry and the manner in which the material enters Chile.

# Recommendation VIII - Expansion of the Epidemiological Surveillance and Information System

Generally speaking, most of the South American countries have made extensive use of the system for several years. They have likewise extended it to disease like hog cholera, rabies in cattle, equine encephalitis and other infectious diseases, plus some parasitic diseases. Nevertheless, no coordination or agreement has been reached with other international agencies that develop technical cooperation in these aspects with the countries of the region.

However, significant progress has been achieved with the Epidemiological Surveillance System in Central America, Mexico and Panama. National systems have been implemented in those countries and linked up to the Continental System.

## Recommendation IX - Inclusion of other subsystems in the Vesicular Disease Surveillance and Information System

No important progress has been made in this regard.

# Recommendation X - Laboratory support for the vesicular disease epidemiological surveillance systems

Some countries must continue to seek greater coordination and integration between the laboratories and the Epidemiological Surveillance System. The tendency toward non-linked Departments among the laboratory diagnosis, control and research activities and the other activities inherent in epidemiological surveillance must be avoided. Effective coordination is imperative in the countries where laboratory activities are subjunct to the Ministries of Health and epidemiological surveillance systems are attached to the Ministry of Agriculture.

With reference to the second point regarding the development of the Project for Epidemiology and Diagnosis of other Viral Diseases, effective

support has been received from Argentina, Brazil and Colombia through their respective negotiations with the French diplomatic representations. However, to date, no reply has been received from the French Embassy in Brazil.

# Resolution IX - International Seminar on the Evaluation of the Oil-Adjuvanted Vaccines Subprogram of the Animal Health Program in South America (PROASA)

This Resolution was incorporated into the activities of the Pan American Foot-and-Mouth Disease Center and communicated to the Member countries on November 16, 1983. The results of the Seminar in question, held on May 2-9, were presented during this COSALFA Meeting.

## Resolution X - Border Agreements

In accordance with the Resolution, the PAFMDC drafted a preliminary document on the development of the Animal Health Bilateral Agreements, with special reference to foot-and-mouth disease. The document was forwarded to all the member countries on March 27, 1984, and has been included for study on the agenda of this Meeting.

## 2. OTHER MATTERS

## a) - Foot-and-Mouth Disease in Chile

On March 16, 1984, Chile sent to the Pan American Foot-and-Mouth Disease Center epithelial samples that were immediately diagnosed as FMD virus type  $0_1$ . On Monday, March 19th, the diagnosis was immediately communicated by telephone to the Livestock Protection Division of the Agriculture and Livestock Service (SAG). On March 23rd, SAG officially advised the PAFMDC, by telex, that foot-and-mouth disease had been confirmed in Chile. On March 26th, the PAFMDC sent to Chile 50,000 doses of monovalent  $0_1$  oil-adjuvanted foot-and-mouth disease vaccine and immediately retransmitted the official information received to the animal health authorities in Argentina, as well as to the IICA, APHIS, USDA, PAHO Washington, WRL England, OIE France and FAO Rome.

From the date on, the PAFMDC maintained permanent telex and telephone contact with the Chilean animal health authorities. The Head of the PAFMDC Laboratories was sent on March 29th to the site of the outbreak in Chile, where he remained until April 3rd. The subsequent communiques from SAG were retransmitted to Argentina and to international agencies or reference agencies; they were also published in the weekly epidemiological reports.

It should be remembered that prior to the occurrence of foot-and-mouth disease in Chile, the Pan American Foot-and-Mouth Disease Center had advised that nation about the epidemiological situation along the Argentine border. The first alert was sent on the 11th of January and suggested intensification of epidemiological surveillance in the high mountain pasture lands.

Likewise aware that the Argentine summer pastures represented a risk to the livestock in Chile, the Argentine authorities requested technical cooperation from the PAFMDC. The Center therefore dispatched an epidemiologist to that country in February. He stayed in Argentina for three weeks, during which time he accompanied an Argentine technical team. An immediate and medium-range plan of action was then established for the provinces of Neuquén and Río Negro. As a result, the PAFMDC sent 600,000 doses of trivalent oil-adjuvanted vaccine to the area.

## b) - Convening of a Special Meeting of COSALFA

By request of the Brazilian Government, and with the concurrence of Argentina, Paraguay and Uruguay, the ex officio Secretary of COSALFA called a Special Meeting of COSALFA to be held in Brasilia on September 15 & 16, 1983. The strategic aspects of the foot-and-mouth disease control campaign in the Southern Cone and procedures for meat commerce with the EEC were discussed at the Meeting.

Due to the very short notice with which the Meeting was called, no other country was able to attend. The four countries, with cooperation from the PAFMDC, therefore decided to hold a meeting themselves. The minutes of that meeting have been distributed among the participants of this Meeting for their appreciation.

## c) - Study of Argentine virus strains and European vaccines

Due to the occurrence of foot-and-mouth disease caused by the  $A_{79}$  and  $A_{81}$  virus strains in the Republic of Argentina, the EEC authorities requested that the strains be sent through the PAFMDC/PAHO to the World Reference Laboratory (WRL) in Pirbright, England.

The National Animal Health Service (SENASA) of the Argentine Secretariat of Agriculture and Livestock proposed to the EEC a joint study to determine the relative efficacy of European foot-and-mouth disease vaccines prepared with the  $A_5$  subtype by comparing them with the Argentine vaccines (prepared with  $A_{79}$  and  $A_{81}$ ) when challenged with  $A_{79}$  and  $A_{81}$  virus strains.

The experimental program drafted by SENASA was approved by the EEC and the study was conducted from January through March, 1984, with cooperation from the PAFMDC/PAHO and the OIE.

Copies of the summarized results have been distributed to the members of this Meeting.

The PAFMDC is presently determining the antibodies by serum protection and serum neutralization tests on the sera of the vaccinated cattle, and controls against the different virus strains in the Argentine vaccine. The World Reference Laboratory is engaged in determining the antibodies against the European  $A_5$  virus.

## d) - Contraband of semen into Central America and Mexico

The authorities have for several years been aware of a frequent but clandestine flow of ampules of semen originating mainly in Brazil and shipped into Central America, Mexico and, apparently, also into Texas, USA.

On March 30, 1984, the PAFMDC received a telex from the PAHO representative in Panama, informing that approximately 1600 ampules of bovine semen from Brazil had been seized and confiscated on March 23rd, at the airport in San José, Costa Rica. The shipment of contraband semen was valued at approximately US\$147,000.

This event again points out an aspect related to international trade requirements: the stricter they become, the more they encourage such contraband action. It might be interesting for COSALFA to communicate its concern in this regard to international bodies like the Regional International Body of Agriculture and Animal Health (OIRSA) and to the International Livestock Raisers' Confederation (CIAGA), and to suggest a joint meeting to study the matter.

## e) - International trade in animals and products of animal origin

The COSALFA Secretary again manifests the PAFMDC's concern regarding intraregional trade between countries with differing epidemiological situations, involving species susceptible to foot-and-mouth disease, and their products, without complying with the respective sanitary requirements. At this time, when the COSALFA Member Countries have assumed a firm and decisive position with respect to the control of foot-and-mouth disease, it is imperative that this problem be studied with utmost attention.

## f) - Brazil's negotiations with the World Bank

The Brazilian Ministry of Agriculture has asked the World Bank for funding to proceed with its animal health program, including a second stage of the FMD control campaign. Within the framework of the respective negotiations, the World Bank sent a technical mission to Brazil. Part of its itinerary included a visit to the Pan American Foot-and-Mouth Disease Center to analyze specific questions related to the national project.

The World Bank has no previous experience in animal health projects in this region. Its technical advisory group for livestock development projects is composed of a specific division of global financial cooperation from the FAO in Rome. Under these circumstances, the technical mission was accompanied by an researcher from the WRL.

Meetings with this type of mission tend to take a long time and also require detailed technical explanations. The opinion of the Brazilian health authorities - an opinion which we share - is that, similar to the modus operandi involving the IDB, it is to the Latin American countries

best interests to have the PAFMDC/PAHO take part in these active technical advisory groups of missions related to international financing agencies, particularly the World Bank. This participation would permit better integration and coordination of the international technical cooperation agencies, facilitate their agreements with our countries, and enable policies and strategies to be applied in accordance with the resolutions passed by COSALFA.

## g) - Research into vesicular stomatitis

The Mexico-American Commission for the Prevention of Foot-and-Mouth Disease, jointly with the PAHO, is organizing a new seminar to analyze the epidemiology and alternatives for the control of vesicular stomatitis. The two previous seminars on the subject were organized by the Pan American Foot-and-Mouth Disease Center and held in Panama and Costa Rica. The next seminar, to be held in Mexico City in September, will be attended by participants in the animal health field and by researchers of the virus at the molecular level. The PAFMDC will be represented by an epidemiologist and a laboratory expert. Additional information may be obtained from the Secretary's office.

The Brazilian Representative then congratulated the Secretary for the achievements during the period in review. He also stated his agreement with the concern about the importance of quarantining imported animals and products of animal origin. He likewise indicated that Brazil has decided to transform an export quarantine station into an import quarantine station, and referred to the FAO-sponsored meeting on exotic diseases held in Santo Domingo. At that meeting several countries had agreed to draw up projects for the prevention of exotic diseases.

Regarding the Animal Health Project submitted to the World Bank, with respect to foot-and-mouth disease, swine diseases and fowl diseases, he indicated that Brazil regards the PAHO's participation through the PAFMDC and the IICA as important for the project's evaluation and execution, and that steps have been taken to attain this coordination. He urged the PAHO and the IICA to cooperate so that this coordination can be accomplished at the corresponding levels.

The Director of the PAFMDC expanded the information on this subject by indicating that the Center had participated on the interdisciplinary team that drew up the document. Also, by request of Brazil, the PAFMDC had submitted the corresponding information to the World Bank Mission.

The IDB Representative stated that the IDB had held meetings with the Brazilian animal health authorities. He expressed the criterion that the IDB is favorably disposed to studying animal health projects in countries having defined, independent structures. However, the Bank believes that it is important to integrate such projects with livestock development projects, especially in countries whose organic structure includes other components of animal production.

The Chairman submitted the Secretary's Report to the Meeting for consideration. It was unanimously approved.

The Representative from Uruguay asked the Meeting participants to dedicate a posthumous homage to the memory of Dr. Ramón Rodríguez Toro, a veterinarian from Chile who left an outstanding record both in his native country and in international spheres. Dr. Rodriguez was the first to employ the complement fixation test in South America and, jointly with Dr. Benjamin Blood, worked to have the PAFMDC located at its present site. As a member of the Center's Scientific Advisory Committee and of the Pan American Zoonosis Center (CEPANZO), Dr. Rodriguez always took active part in all meetings. The members observed a minute of silence in his memory.

# B. EPIDEMIOLOGICAL SITUATION AND THE SITUATION OF FOOT-AND-MOUTH DISEASE CONTROL PROGRAMS IN SOUTH AMERICA, 1983

A consultant from the Pan American Foot-and-Mouth Disease Center presented a summary of the document "Situation of the Foot-and-Mouth Disease Control Programs in South America, 1983." Compiled from the reports forwarded by the COSALFA Member Countries, the document was distributed to sentatives for their analysis and approval.

The situation continued favorable, as in 1982. Virus type 0 was predominant and there was a significant increase in foci. In relation to the previous year there was also a substantial increase of virus type C, especially in Argentina. Virus type A declined in all the countries. The report includes data on subtypes and vaccine strains.

Brazil, Peru and Venezuela reported a drop in the occurrence of the disease, but substantial increases were recorded in Argentina, Colombia and Ecuador. Bolivia reported a situation similar to 1982. Frequency also declined in Paraguay; there were 20 foci of A and O viruses but no evidence of virus type C. For the third consecutive year, foot—and—mouth disease in Uruguay occurred only in isolated sporadic cases; there was one case of A virus and two cases of C virus. Chile remained disease—free until March 1984, when an isolated outbreak was reported in the Andes on the border with Argentina. Eradication measures in that area include sacrifice of all affected animals and their healthy contacts.

The region reported a total of 151,019 diseased bovines during the year. The overall morbidity rate of 7 per 10,000 was slightly higher than the 1982 rate. Recorded lethality was 2.18% and the attack rate in affected herds was 12.6%. The swine morbidity rate was 5.2 per 10,000. The average attack rate reached a high 27.1% and lethality amounted to 33.18%.

With respect to the situation of the foot-and-mouth disease control programs, the overall coverage rose due to the inclusion of several states of

Brazil. The herd coverage rate also rose. Geographic coverage totalled 59%, as bovine herd coverage and bovine population coverage both reached 84%.

The coverage in Bolivia is still low, but the whole territory is expected to be included in the second stage of the project submitted to the IDB. The low geographic coverage in Brazil is explained by the fact that the extensive Amazon region is excluded from the program, where there are no domestic animals of economic importance.

The coverages of herds and bovine population are not complete in Bolivia where, in the FMD program area, they reach 55% and 29% respectively. The respective rates are 74% and 78% in Brazil and 89% and 64% in Colombia.

The total vaccination coverage in South America reached 44% (1,792,965) of the herds and 63% (139,535,600) of the cattle population. These totals are similar to the totals in 1982. Of the 437.4 million doses of vaccine produced, official control evaluated the quality of 439.6 million doses. 393.5 million (89%) were approved.

The report includes charts and figures summarizing the morbidity of sheep and pigs; the distribution of herds affected, by virus type and months; the human, material and financial resources; imports of bovines and bovine semen; imports of pigs, goats, horses and bovine embryos; exports of cattle and semen; coverage rates of field resources; average cost of the official service per head of cattle and average coverage per vehicle.

Because there is an interest in importing bovines into Ecuador, the Representative from that country requested information on the source and prognosis of the C virus foci that occurred in Uruguay.

The Uruguayan Representative explained that the focus at Canelones was probably due to the escape of a virus from a vaccine production plant. No definite source has been found for the outbreak in the three affected herds near Colonia, but the infection is believed to have originated in cattle being trucked from Argentina through Uruguay due to the floods in Argentina. All the foci were controlled with quarantine measures and ring vaccination. He indicated that exports are guaranteed by the existing quarantine procedures based on 30 days of quarantine with two tests, probang and VIA.

The EEC Representative requested information on virus subtype C and drew attention to the importance of including information on the field subtypes and vaccine strains, inasmuch as the report was regarded as an official document.

He was informed that the subtype was  $C_3$  and that the document included figures with the data he wanted.

The PAFMDC Director also commented that such data is sent annually for inclusion in the Annual Animal Health Report (FAO/WHO/OIE), and that in

the future it will be inserted in the Center's Monthly Epidemiological Report, as requested by the Secretary of the European Commission for Foot-and-Mouth Disease Control. The Director also referred to the situation of the Ası strain that is a cause for concern in the EEC countries. He indicated that this strain was reported in Argentina and in southern Brazil, where it had been controlled with ring vaccination. Later Argentina incorporated this strain, plus A79, into the commercial vaccines, and the ocurrence of the strain dropped to insignificant levels. He also explained that the strain has been submitted to complete studies including fingerprinting, and that the World Reference Laboratory in Pirbright had reported results similar to those obtained by the PAFMDC. He explained that all the foot-and-mouth disease virus strains of epidemiological importance had been sent in a timely manner to the World Reference Laboratory. He concluded that the countries are seriously engaged in the control effort, under the coordination of the PAFMDC, and that their efforts warrant credibility.

The Brazilian Representative seconded the comments of the PAFMDC Director. He also stated that the countries are the ones most interested in ensuring a complete surveillance to stay abreast of the field viruses and put into effect the corresponding control measures, as well as to supply the information to the countries and interested agencies.

Several representatives submitted remarks for inclusion in the document.

# C. EVALUATION OF THE CONTINENTAL INFORMATION SYSTEM FOR THE EPIDEMIOL-OGICAL SURVEILLANCE OF VESICULAR DISEASES

A consultant from the PAFMDC presented a summary of the evaluation of the Continental Epidemiological Surveillance and Information System that is part of the document on the Situation of the FMD Control Programs in South America, 1983.

He reminded the delegates that there are some 2000 informing units in the South American countries, and that each country has been divided into a grid system based on geographic coordinates.

With respect to the weekly report, the overall reception of inbound reports improved and the average of weekly communications received was 51.8 in relation to the 52 calendar weeks.

Regarding the monthly report, the only remark concerned the delay on the part of some countries in forwarding their reports to the PAFMDC, and the shortage of epidemiological comments required for a correct interpretation of the data.

Generally speaking, the system has functioned satisfactorily.

He stressed that the countries of Central America and Panama have been incorporated into the weekly and monthly information reporting system, based on the project funded by the United Nations Development Program (UNDP) and conducted by the PAHO. Mexico also joined the network.

He also highlighted the progress achieved by the system, such as: publication of a condensed annual report, use of the information for characterization and identification of foot-and-mouth disease eco-systems, and the intention to computerize the data on the foot-and-mouth disease programs.

The Representative from Ecuador offered explanations about why some reports were not received.

The EEC Representative congratulated the Members on the functioning of the system, and commented that Europe also encounters difficulties in receiving data from the European countries. Because of the variety of language – seven in all – a computer program was devised with a numerical code that can be sent by telex. He offered to provide information on the code system to whomsoever might be interested.

The Commission approved the report "Situation of the Foot-and-Mouth Disease Control Programs in South America, 1983."

## D. IMPLEMENTATION OF THE POLICY AND STRATEGIES FOR FOOT-AND-MOUTH DIS-EASE CONTROL IN SOUTH AMERICA IN THE 1981-1990 TEN-YEAR PERIOD

A consultant from the PAFMDC presented a summary of the document "Progress Report on the Execution of Action Provided for in the Document Policy and Strategies for Foot-and-Mouth Disease Control in South America in the 1981-1990 Ten-Year Period", which contains the information supplied by the countries to the COSALFA Secretary. The document is attached as Appendix III.

The representatives of the member countries expanded the information on the action undertaken in each country.

## E. BORDER PROGRAMS FOR THE CONTROL OF FOOT-AND-MOUTH DISEASE

A consultant from the PAFMDC presented a summary of the document "Bilateral Animal Health Agreements among Countries of South America." Prepared in compliance with Resolution X of COSALFA X, the document presents the antecedents, operating methodology and achievements of the bilateral agreements.

All the representatives emphasized the importance of the agreements as instruments for conducting regional animal health programs, and adopted

the document for subsequent publication with the inclusion of the remarks and additional information that they will forward to the COSALFA Secretary before July 15, 1984.

# F. RECOMMENDATIONS OF THE INTERNATIONAL SEMINAR ON THE EVALUATION OF THE USE OF OIL-ADJUVANTED VACCINE IN THE FOOT-AND-MOUTH DISEASE CONTROL PROGRAMS IN SOUTH AMERICA

A participant of the Seminar read the final document which includes the working groups' recommendations on aspects of foot-and-mouth disease characterization and the control and eradication strategies and actions. The Commission approved the recommendations that are attached as Appendix IV hereof.

A consultant from the PAHO's Public Veterinary Health Program (HPV) summarized the "Animal Health Training Program for South America - PROASA", underscoring the strict fulfillment of the programmed activities and the highly satisfactory results that have been achieved.

## G. OTHER MATTERS

## a) - Outbreaks of Foot-and-Mouth Disease in the Argentine provinces of Neuquen and Rio Negro

The Representative from Argentina presented data on the FMD situation in the provinces of Neuquén and Río Negro, bordering the Republic of Chile, where foot-and-mouth disease outbreaks occurred in the latter half of 1983.

He reported that a mission composed of personnel from the Sanitary Control Service (SELSA), an epidemiologist from the PAFMDC, and an advisor from the National Agricultural and Livestock Technology Institute (INTA) had gone to the region to conduct an epidemiological assessment of the situation. Their evaluation served as the basis for a plan of action that utilized oiladjuvanted vaccine administered by official personnel. A total of 600,000 doses, provided by the PAFMDC, was administered. Anti-VIA antibody tests are scheduled as indicators of viral activity. Results achieved to date have been satisfactory. He also said that the PAFMDC had been advised opportunely of the epidemiological situation so that the Chilean authorities could be alerted.

## b) - Outbreak of Foot-and-Mouth Disease in Chile

The Chilean Representative presented a detailed report of the outbreak and of the eradication measures applied. He indicated that occurred in the VIII Region, located in the Andes some 2500 meters above sea level. The area borders Argentina and is used as summer pastureland.

The outbreak was traced to livestock that had been smuggled across the border. The first notification was received on March 16th. The PAFMDC confirmed the diagnosis of virus type  $0_1$ . The last case was reported on May 1st.

An emergency plan was put into action. It involved tracing in the summer mountain pastures and in the areas of influence, and included collecting blood samples to determine anti-VIA antibodies. Strict sanitary barriers were set up to isolate the area completely from the rest of the nation. The region's topography and geography facilitated such isolation procedures.

The need to explain the situation to the indigenous communities, and the topographical features of the region, slightly delayed the start of sacrifice. A total of 7117 animals were slaughtered in the affected areas; 2081 were bovines, 1042 were sheep, 3828 were goats and 166 were swine.

Strict surveillance has been maintained in the rest of Chile, with observers at slaughterhouses, animal shows and notification of animal transit. VIA studies have not indicated viral activity in other regions. Special measures are being studied for possible implementation next summer.

The Chilean Representative stressed the need for credibility about the seriousness with which the programs in the Region, and particularly in his country as a whole, are being conducted. He mentioned that although Chile had attained a disease-free status, the meat-importing countries had been slow in accepting that status.

The Representative from the EEC Veterinary Services congratulated Chile and expressed his admiration for the country's accomplishments in animal health. He explained that the European Economic Community does not issue statements acknowledging the status of disease-free countries, but rather accepts countries as exporters when they meet the standards. He also stated that the EEC had not received notification within the 24-hour time period. Likewise he said that the action undertaken in the South American nations is indeed worthy of credibility.

The Chilean Representative clarified the situation by explaining that no notification had been sent because the country had not yet been informed about Chile's acceptance as an exporter to the EEC.

He finally indicated that a detailed report would be drawn up, similar to the one submitted by Denmark on the occasion of the foot-and-mouth disease outbreak.

# c) - Study of vaccine protection against virus type A strains from South America

Dr. Emilio Juan Gimeno, observer from the OIE, informed the Meeting that a study of cross protection conferred by foot-and-mouth disease vaccines prepared with European and Argentine strains had been conducted as part of a joint cooperation program between the EEC and Argentina.

The results of challenge at 21 days PI showed that when the vaccines prepared with the European  $A_5$  strain were challenged with  $A_{79}$  and  $A_{81}$  virus strains, only animals that received two doses were protected against challenge with  $A_{79}$  virus. Antibody determination studies are underway at laboratories in Pirbright, Belgium, and at the PAFMDC in Rio de Janeiro.

The head of the PAFMDC laboratories presented the partial results of microneutralization that are in agreement with the results of the challenge tests.

The Representative of the Commission of the European Communities' Veterinary Services summarized the antecedents of this study and stressed that during a visit of the Commission information was obtained about the appearance of the  $A_{81}$  virus strain, and that the Scientific Advisory Committee recommended that the strains be routed through the PAFMDC to the World Reference Laboratory. He also explained that in order to reduce the risk of introducing viruses considered exotic, directives were issued that include the critical analysis of the programs of the exporting countries, taking into account the existence of virus-free areas, the utilization of the process of aging and deboning meats, and the limitation of the importing of by-products, as well as the conducting of protection studies of the vaccines prepared with European strains and challenged with South American strains. In this sense, the study in cooperation with Argentina has been considered of great avail. He emphasized the importance of the regional control programs and of forwarding strains and epidemiological information.

The ECCFMD Secretary reiterated his support of the policies mentioned by the Representative of the EEC Veterinary Services. He stated that the Commission supports the study conducted in Argentina and also commented on the need to increase scientific cooperation programs as a means of improving the situation of the programs.

He indicated that it is important for the PAFMDC to participate in the Commission's meetings. He likewise proposed that COSALFA consider the possibility of holding a joint meeting with the ECCFMD's Research Group of Standing Technical Committee at the PAFMDC in 1985.

Dr. Gimeno explained that the document will be presented at the OIE, at which time the corresponding modifications will be made.

The PAFMDC Director explained about the mechanisms for sending in virus strains based on the reference activity developed at the PAFMDC by request of the countries. The strains are first studied at the respective national laboratories; when deviations are observed, the strains are sent to the PAFMDC for further study. The PAFMDC then requests authorization to ship the strains and they are sent to the World Reference Laboratory. He commented on the necessity of not supplying such strains to other countries without prior authorization, as has been agreed with the WRL. This situation happened in the past and constituted a risk that the outbreaks might be to meat imported from South America, when in fact the real cause could be virus that escape from laboratories.

Regarding the PAFMDC's attendance at the meetings of the European Commission, and at other meetings such as that of the OIE, he agreed that the Center should send representatives, and commented on the difficulties encountered in sending personnel to other continents. He also expressed his pleasure with the proposal of holding a joint meeting at the PAFMDC, and promised to forward the results of the consultations made. Finally he asked the EEC Representative if the current procedure for sending virus strains via the PAFMDC is satisfactory.

The Representative from the EEC's Veterinary Services stated that the procedure is correct.

The Brazilian Representative commented on the importance of keeping in mind the control actions that these countries are developing and the manner in which they are fulfilling the sanitary requirements. He mentioned that the  $A_{81}$  virus strain had appeared briefly and then disappeared.

The Representative from Uruguay called attention to the risks implied in performing protection studies with European vaccines involving all the strains that might appear. In his opinion, this procedure should be restricted to special conditions.

The Brazilian Representative menioned that it would be very worth-while for the PAFMDC to attend meetings of the European Commission, because it would facilitate discussion of the technical aspects of the programs in progress in the South American countries.

## d) - Information about the influenza outbreak in the USA

The Representative of the United States Departement of Agriculture (USDA) summarized the avian influenza outbreak that affected the states of Pennsylvania, Maryland and New Jersey. He showed detailed charts with the number of outbreaks, morbidity, number of animals sacrificed, and the costs of indemnity.

## e) - Situation of foot-and-mouth disease on a worldwide level

The Secretary of the ECCFMD summarized the FMD situation around the world. He underscored the favorable situation in the European countries where only isolated outbreaks occurred in Holland and in Denmark. Spain and Portugal both recorded activity of  $A_5$  virus. He mentioned the vaccination coverage in the majority of the countries and the sanitary barriers existing in southeastern Europe, in Bulgaria and in Turkey. He commented that studies are underway regarding the possible elimination of vaccination.

The endemic situation of the preceding years continues on the remaining continents.

## f) - Remarks by the IICA Representative

The IICA Representative expressed his gratitude for the invitation to attend the Meeting, and his pleasure at hearing the discussion concerning

the possible eradication of foot-and-mouth disease. He cited the example of Mexico which, after 30 years, still remains free, and the benefit that this status brings.

He indicated that the IICA is pleased to cooperate with the COSALFA Member Countries in achieving joint solutions.

## g) - Training in the maintenance of laboratory equipment

The Representative from Paraguay proposed that the next COSALFA Meeting discuss this topic, which is of major importance for the countries' foot-and-mouth disease control programs.

## H. RESOLUTIONS

The Chairman submitted the following resolution proposals to the appreciation of the Representatives:

Resolution II - Participation of international funding agencies in the development of animal health and production programs.

Resolution III - Research into the coverage of foot-and-mouth disease vaccine strains.

Resolution IV - The ex officio Secretary's attendance at international foot-and-mouth disease meetings.

Resolution V - Document "Bilateral animal-health agreements between countries of South America".

Resolution VI - Program for training in the production, control and application of oil-adjuvanted foot-and-mouth disease vaccine.

Resolution VII - International seminar to evaluate the use of oil-adjuvanted vaccine in the foot-and-mouth disease control programs in South America.

Dr. Raúl Casas Olascoaga, ex officio Secretary of COSALFA, distributed copies of the Final Report to all the participants. The Report was approved.

The Meeting was closed at 17:00 hours on May 11, 1984.

IN WITNESS WHEREOF, the President of the Meeting, Guyana Representative; the Director of the Pan American Foot-and-Mouth Disease Center, Secretary ex officio; and the Representatives of the Member Countries, sign the present Final Report in the Spanish and English languages, both texts being equally authentic.

DONE in Rio de Janeiro, Brazil, this eleventh day of May nineteen hundred and eighty four.

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Phillergin	Rail lasses.
President Representative of Guyana	Secretary ex officio Director of PAFMDC
	Puller
Representative of Argentina	Representative of Bolivia
Representative of Brazil	Representative of Golombia.
	to de Barneys
Representative of Chile	representative of Cuador
Representative of Peru	Representative of Paraguay
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Representative of Uruguay	Representative of Venezuela

RESOLUTIONS

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## RESOLUTION I

## INSTITUTIONALIZATION OF COSALFA AS INSTITUTIONALIZED COMMISSION AT THE SUBREGIONAL LEVEL

#### WHEREAS:

Resolution III of COSALFA X requested that the Brazilian Ministry of Agriculture seek the support of the Ministry of Foreign Relations in initiating the action required to obtain from the Foreign Offices of the Member countries of COSALFA the recognition indicated in the Commission's Bylaws;

On May 12, 1983, the Ministry of Agriculture of Brazil issued a letter numbered GM. 241, requesting that the Ministry of Foreign Relations support the COSALFA request; and

On March 13, 1984, the Ministry of Foreign Relations of Brazil issued letter DPB/DAI/03/662.1 (B.2), in response to that request;

## THE XI REGULAR MEETING OF COSALFA HEREBY RESOLVES:

- 1. To thank the Minister of Agriculture of Brazil for his interest and support in the COSALFA request before the Foreign Relations Ministry.
- 2. To thank the Minister of Foreign Relations of Brazil for the consideration given by his Ministry with respect to the studies concerning the possible institutionalization of COSALFA as an Institutionalized Commission at the Subregional Level.
- 3. To request that the Foreign Relations Ministry of Brazil continue its studies aimed to resolve the request submitted by COSALFA.
- 4. To request that the Secretary ex officio of COSALFA assure the Foreign Relations Ministry that the request institutionalization of COSALFA will not require the disbursement of funds or other resources to maintain the Commission, because such costs are already covered by the quotas that the countries contribute regularly to the Pan American Health Organization to support the functions of the Pan American Foot-and-Mouth Disease Center, which is the Technical Secretariat of the COSALFA.
  - 5. To explain, with respect to item 4 above, that the only funding

which Brazil may be called upon to disburse is related to the travel and per-diem expenses of the representative delegated to attend the COSALFA meetings.

## RESOLUTION II

PARTICIPATION OF INTERNATIONAL FUNDING AGENCIES IN THE DEVELOPMENT OF ANIMAL HEALTH AND PRODUCTION PROGRAMS

## WHEREAS:

Several of the COSALFA Member Countries have expressed their interest in reformulating their respective animal health and production plans;

Major aspects of the reformulation include the goals of eradicating foot-and-mouth disease in important livestock-raising areas of the continent, the inclusion of other diseases or sanitary problems in their projects, and the development of livestock expansion programs; and

Some of the countries have taken steps to seek support for these plans from international funding agencies;

THE XI REGULAR MEETING OF COSALFA HEREBY RESOLVES:

To request that the Pan American Health Organization (PAHO) and the Inter-American Institute for Cooperation in Agriculture (IICA) seek to obtain from international funding agencies the participation of PAHO and/or IICA specialists in the groups formed to prepare and draw up these programs when they relate to countries in this region.

## RESOLUTION III

## RESEARCH INTO THE COVERAGE OF FOOT-AND-MOUTH DISEASE VACCINE STRAINS

#### WHEREAS:

The XI Regular Meeting of COSALFA has been informed of research conducted in a member country about the behavior of a foot-and-mouth disease vaccine prepared in a European country and challenged by a virus strain isolated on the American continent in 1981; and

The results of that testing could have repercussions on the international trade of products of animal origin;

#### THE XI REGULAR MEETING OF COSALFA HEREBY RESOLVES:

- 1. That the Member Countries of COSALFA interested in conducting research with institutions of non-member countries coordinate such research through the Pan American Foot-and-Mouth Disease Center.
- 2. That in such cases the countries likewise seek to act jointly with the interested technical bodies in the interpretation of the results obtained and the careful assessment of the repercussions that such results could have on the animal commerce in the region.

## RESOLUTION IV

## ATTENDANCE BY THE EX OFFICIO SECRETARY AT INTERNATIONAL FOOT-AND-MOUTH DISEASE MEETINGS

## WHEREAS:

The Pan American Foot-and-Mouth Disease Center has been fulfilling an effective role as the ex officio Secretariat of COSALFA, as of technical cooperation with the programs of the Member Countries, and as coordinator of the action developed at the regional level;

The Member Countries, through commercial and technical exchange, have close relationships with other continents; and

The situation of foot-and-mouth disease and the programs developed for its control play a preponderant role in such relationships;

#### THE XI REGULAR MEETING OF COSALFA HEREBY RESOLVES:

To request that the Director of the Pan American Health Organization facilitate attendance by the Director of the Pan American Foot-and-Mouth Disease Center at the international events where this subject is of importance to the Member Countries.

## RESOLUTION V

## DOCUMENT "BILATERAL ANIMAL-HEALTH AGREEMENTS BETWEEN COUNTRIES OF SOUTH AMERICA"

#### WHEREAS:

The border sanitary agreements undertaken by the countries of South America have attained significant development;

The document submitted by the Pan American Foot-and-Mouth Disease Center is highly important as a guide for the orientation and assessment of the activities of such border agreements, thereby complying with Resolution X passed at COSALFA-X; and

Complementary information must be sent to the Center by the countries so that the aforesaid document can be completed as quickly as possible;

## THE XI REGULAR MEETING OF COSALFA HEREBY RESOLVES:

- 1. To express its appreciation to the Pan American Foot-and-Mouth Disease Center for preparing the document "Bilateral Animal-Health Agreement among Countries of South America".
- 2. To request that the Member Countries, before July 15, 1984, send to the Pan American Foot-and-Mouth Disease Center the data required for the document, or any suggestion that they deem should be included in the final publication.
- 3. To request that Member Countries program defined control and eradication activities against foot-and-mouth disease and other diseases in border areas, in accordance with the new orientations or regional strategies.

## RESOLUTION VI

PROGRAM FOR TRAINING IN PRODUCTION, CONTROL AND APPLICATION OF OIL-ADJUVANTED FOOT-AND-MOUTH DISEASE VACCINE

## WHEREAS:

The Animal-Health Training Program for Latin America (PROASA), through the Oil-Adjuvanted Vaccine Subprogram, included a preliminary seminar, 12 field courses held in nine countries, two courses on the production and control of oil-adjuvanted vaccines, and a seminar to evaluate the program;

This last seminar concluded that the objectives of the aforesaid program had been fully accomplished;

The COSALFA Member Countries recognize and are desirous of underscoring the impact attained by this program within the framework of the transfer of technology for the production, quality control and systematic application of oil-adjuvanted foot-and-mouth disease vaccine;

Great expectations have emerged in the countries, and the personnel who will be assigned to continuing the programs have likewise been motivated and trained; and

This training, with respect to the new epidemiological methods based on the regional characterization of the forms of animal production, as well as in the techniques for production, control and application of the oiladjuvanted vaccines, is a continuous and dynamic process;

## THE XI REGULAR MEETING OF COSALFA HEREBY RESOLVES:

- 1. To express its gratitude and congratulations to the Pan American Health Organization (PAHO), to the Inter-American Development Bank (IDB), to the Governments of the countries that hosted each of the courses, and to the agencies responsible for the organization, conducting and funding of the Animal Health Training Program for Latin America (PROASA).
- 2. To request that the Pan American Health Organization and the Inter-American Development Bank, within the framework of PROASA, the resources required to enable a technical body to respond to the requests

from the countries and continue rendering the direct technical assistance in the fields mentioned in the initial five paragraphs hereof, which fields have emerged as results of the program.

3. To request that the agencies responsible for the aforesaid program procede with all due haste to draw up and publish reports, methodological parameters, and training guidelines regarding a) production and control of oil-adjuvanted vaccines; b) regional characterization of the forms of livestock production and epidemiological methods for the analysis and use thereof, and, c) systematic application of the oil-adjuvanted vaccine and its evolution, thus complying with the IDB/PAHO agreement.

## RESOLUTION VII

INTERNATIONAL SEMINAR ON EVALUATION OF THE
USE OF OIL-ADJUVANTED VACCINE IN THE FOOT-AND-MOUTH
DISEASE CONTROL PROGRAMS IN SOUTH AMERICA

### WHEREAS:

The International Seminar on the Evaluation of the Use of Oil-Adjuvanted Vaccine in the Foot-and-Mouth Disease Control Programs in South America was held with great success at the Pan American Foot-and-Mouth Disease Center in Rio de Janeiro, Brazil, May 2-10, 1984; and

A high level was attained in the sessions dedicated to the characterization of the livestock production systems and foot-and-mouth disease ecosystems, and of strategies commensurate with those ecosystems, developed by the South American countries;

#### THE XI REGULAR MEETING OF COSALFA HEREBY RESOLVES:

- 1. To thank the Pan American Foot-and-Mouth Disease Center of the Pan American Health Organization for organizing and developing the International Seminar on the Evaluation of the Use of Oil-adjuvanted Foot-and-Mouth Disease Vaccine in the Disease Control Programs in South America.
- 2. To adopt the recommendations and conclusions issuing from the Seminar, due to their usefulness for the control and eradication of footand-mouth disease in the countries.
- 3. To request that the Pan American Foot-and-Mouth Disease Center consider organizing and holding a seminar, prior to COSALFA XII, dedicated to the planning, execution and evaluation of regional action to eradicate foot-and-mouth disease.

APPENDIX I - LIST OF PARTICIPANTS

APPENDIX II - PROGRAM AGENDA

APPENDIX III - PROGRESS REPORT ON THE ACTION PROPOSED
IN THE DOCUMENT "POLICY AND STRATEGIES
FOR THE CONTROL OF FOOT-AND-MOUTH
DISEASE IN SOUTH AMERICA FOR THE
1981-1990 TEN-YEAR PERIOD"

APPENDIX IV - RECOMMENDATIONS OF THE "INTERNATIONAL SEMINAR ON THE EVALUATION OF THE USE OF OIL-ADJUVANTED VACCINES IN THE FOOT-AND-MOUTH DISEASE CONTROL PROGRAMS IN SOUTH AMERICA"

APPENDIX I - LIST OF PARTICIPANTS

## SOUTH AMERICAN COMMISSION FOR THE CONTROL OF FOOT-AND-MOUTH DISEASE

#### XI ORDINARY MEETING

Rio de Janeiro, Brazil, May 10-11, 1984.

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# SOUTH AMERICAN COMMISSION FOR THE CONTROL OF FOOT-AND-MOUTH DISEASE

# XI ORDINARY MEETING

Rio de Janeiro, Brazil, May 10-11, 1984.

# P R O G R A M

May 10, Thursday		
09:00	Inaugural session.	
09:20	A. Report of the Secretariat ex officio.	
10:00	Discussion of the Report.	
10:30	Coffee break.	
10:45	3. Epidemiological situation and status of the fo and-mouth control programs in South America,	
11:30	C. Evaluation of the continental vesicular disease information and epidemiological surveillance tem.	
12:30	Lunch.	
14:00	O. Implementation of the policy and strategies for the control of foot-and-mouth disease in South America in the ten-year period 1981-1990.	
May 11, Friday		
09:00	E. Foot-and-mouth disease control border programs	s.
10:15	Coffee break.	
10:30	F. Recommendations of the International Seminar of Evaluation of the Use of Oil-Adjuvanted Vaccin for the Control of Foot-and-mouth Disease in South America.	
11:15	G. Other matters.	
12:15	Lunch.	
14:00	H. Resolutions.	
	Final Report.	
16:00	Closure.	

APPENDIX III - PROGRESS REPORT ON THE ACTION PROPOSED IN THE DOCUMENT "POLICY AND STRATEGIES FOR THE CONTROL OF FOOT-AND-MOUTH DISEASE IN SOUTH AMERICA FOR THE 1981-1990 TEN-YEAR PERIOD"

PROGRESS REPORT ON THE ACTION PROPOSED IN THE DOCUMENT
"POLICY AND STRATEGIES FOR THE CONTROL OF FOOT-AND-MOUTH DISEASE IN
SOUTH AMERICA FOR THE 1981-1990 TEN-YEAR PERIOD."

May 10, 1984

#### INTRODUCTION

The document entitled "Policy and Strategies for the Control of Foot-and-Mouth Disease in South America for the 1981-1990 Ten-Year Period" was prepared in 1981 by the member countries of the South American Commission for the Control of Foot-and-Mouth Disease (COSALFA) with technical cooperation from the ex officio Secretariat, the Pan American Foot-and-Mouth Disease Center. The document was subsequently approved by Resolution V passed at COSALFA-IX on March 12, 1982.

Beginning with the Xth Regular Meeting of COSALFA, held in the annual meetings included an evaluation of the member countries progress in the implementation of actions intended to comply with the goals proposed in that document.

Through Resolution VI, passed at COSALFA-X, and with the purpose of systematizing and documenting such information, COSALFA requested that the Secretariat draft a document to consolidate the annual progress achieved, with special emphasis on the subregional aspects.

This report summarizes the information sent in by each of the countries on the subject in question, and includes the results of the technical cooperation rendered by the PAFMDC in the member countries during the period reported.

#### 1. OPERATIONALIZATION

As a first step leading to the formulation of the objectives and strategies for the control of foot-and-mouth disease during the 1981-1990 ten-year period, page 10 of the document establishes the need to characterize the foot-and-mouth disease regional epidemiological determinants so as to permit an accurate delimitation of the different ecological an livestock-raising areas in which such action should be undertaken.

This phase of the work has made highly significant progress. All the countries have succeeded in characterizing the regional livestock-raising organization, as well as the foot-and-mouth disease ecosystems. In countries these studies have reached such levels of precision that permitted the start of the phase of specific scheduling of the required control action. In this regard Argentina, Brazil's southern states, Ecuador, Peru and Uruguay have made the most progress. The remaining countries possess the information, methodology and training qualifications required to attain levels in a short time.

# 2. NATIONAL PLANS OF ACTION

# 2.1 Argentina

The National Animal Health Service (SENASA), in cooperation with the PAFMDC, is currently drafting a Program for the Eradication of Foot-and-Mouth Disease within 10 years.

The program is based on the identification and delimitation of 7 strategic regions. Each region has immediate and partial objectives, as well as specific strategies in accordance with the epidemiological, ecological and structural characteristics of its livestock production and the program's overall strategy.

The immediate regional targets aim to prevent epidemiological risks from spreading out of the endemic areas. Priority has been directed to the extractive livestock-raising in the northeastern region, including areas bordering Paraguay, Brazil and Uruguay. As of the second year of the Eradication Program, plans call for eliminating the clinical disease from the important cattle-raising areas of the country. It is estimated that within 8 years no clinical case of foot-and-mouth disease will be encountered in Argentina.

It is expected that the project planning will be completed before the end of this May. The SENASA has requested partial funding for the program from the Inter-American Development Bank (IDB) although, regardless of the outcome of that funding request, the program is expected to commence during the first half of 1985.

The most important policy and strategic aspects of the project are currently being assessed by associations representative of the Argentine cattle raisers.

#### 2.2. Bolivia

The National Service for the Control of Foot-and-Mouth Disease, Rabies and Brucellosis (SENARB), with cooperation from the PAFMDC, is currently engaged in revising the plan for the second stage of the foot-and-mouth disease campaign in accordance with observations made by the IDB.

The five-year project encompasses 6 of the country's departments covering 92% of the national livestock. The overall goals are to eliminate the epidemiological effects that the endemic areas of Beni and Santa Cruz exert on the rest of the nation's livestock industry, to soften the disease's morbid effects in the endemic areas themselves as well as in the epiendemic areas, and to eliminate the risk in the paraendemic areas by transforming them into disease-free areas.

It is expected that the project will get underway in 1984. Meanwhile, SENARB started a pilot plan in three provinces bordering Trinidad, capital of

Beni. The main objectives are to obtain information on foot-and-mouth disease behavior in that area regarded as endemic, and to test immunization with oil-adjuvanted vaccine prepared by the PAFMDC.

#### 2.3 Brazil

With cooperation from the PAFMDC, the Secretariat of Animal Health Defense (SDSA) has drafted a national project for stage two of the foot-and-mouth disease control program. It pursues specific and differentiated objectives and strategies according to the disease's regional ecosystems grouped into six program regions. During this stage (1984-1988), some of the objectives, among others, are to eliminate the clinical disease from the states of Rio Grande do Sul, Santa Catarina and part of Paraná; to eliminate the risks of the disease spreading outward from endemic areas like the pantanal area in Mato Grosso and the valleys of the Jequitinhonha, Mucurí and Rio Doce rivers; and to increase protection of the herds fattening out in southern Goiás, Minas Triangle, western São Paulo state and northern Paraná. The plan of action for 1984 calls for applying 20 million doses of oil-adjuvanted vaccine or 35 million doses of conventional vaccine in the endemic ecosystems, plus 128.5 million conventional doses in the epiendemic ecosystems and 34 million in the paraendemic ecosystems.

The Brazilian government is currently negotiating with the World Bank to obtain partial funding for the project.

### 2.4 Colombia

During 1983, in cooperation with the PAFMDC, the Colombian Agriculture and Livestock Institute (ICA) prepared the basic document for a "Project for the Control of Foot-and-Mouth Disease in Colombia." The project contemplates 10 areas to be included within the program according to the characteristics of the livestock production structure and the foot-and-mouth disease ecosystems in that country. The objective is to eradicate the disease through successive stages, the first of which proposes to eliminate it from the entire region before 1990. This region includes 49,500 herds with about 8 million bovines.

The project bases were approved in July, 1983, by the Ministry of Agriculture and the National Planning Department. The ICA was authorized to seek partial financing for project development from the World Bank. The full project is expected to get underway in 1985. Total project cost was estimated at 20,297 million Colombian pesos, half of which will be allocated by the private sector.

Early in 1984 the budget was allocated and action started in the hopes of declaring the department of Atlantico and northern Bolivar (island north of the Dique channel) free of foot-and-mouth disease in the first months of 1987. Through a resolution issued by the Colombian Ministry of Agriculture, the government officially supports the expansion of foot-and-mouth disease-free areas in that country.

#### 2.5 Chile

Aiming to ensure its policy as a foot-and-mouth disease-free country, Chile is presently drafting a Project for the Prevention of Exotic Diseases. The project is scheduled to begin in early 1985.

With advisory assistance from the PAFMDC, the project includes a plan for epidemiological surveillance and sanitary control, of which many facets have been put into operation.

One of the project's major points is the collecting of systematic serological samplings that include foot-and-mouth disease (VIA) as well as other diseases like vesicular stomatitis and Aujesky.

The prevention project is based on the regional characterization of the livestock industry and animal commerce.

Given the policy of sacrificing and destroying affected herds, as was implemented to eliminate the recent outbreak in the high mountain summer pastures in south-central Chile, it is expected that the basic aspects of the prevention project will not be affected.

#### 2.6 Ecuador

The basic guidelines for a new Foot-and-Mouth Disease Control Plan have been drafted and presented to the higher authorities of the Ministry of Agriculture.

The ten-year project will be developed with its respective plan of action during the next few months. Technical cooperation is being provided by the Pan-American Foot-and-Mouth Disease Center. With partial funding from international financial agencies, the project is expected to get underway in 1985.

Among the plan's outstanding aspects is its overall goal of eliminating the disease completely in two 5-year stages. The first 5-year stage aims to transform sporadic regions (Amazon and south-central-interAndean) into disease-free regions. During the second 5-year stage the other regions (coastal and north-central-interAndean) will be incorporated into the disease-free area as a last step preceding eradication of the disease virus.

The basic strategy for achieving the goal of the plan aims to counteract the determining action of the primary endemic region (coastal) with respect to the source of the disease and its spreading into the rest of the country. The emphasis will be placed on the strict control of outbound animals, intensive official immunization with priority use of oil-adjuvanted vaccine, and the investigation of possible foci of viral endemism. In the epiendemic (north-central) priority focuses on high-coverage preventive vaccination and on the control of cattle movement along the borders. In the sporadic region (Amazon and south-central) priority will be put on the control and quarantine of inbound animals and active surveillance for timely detection and elimination of foci.

The plan also includes the prevention of exotic diseases and intensive action against brucellosis and tuberculosis.

# 2.7 Guyana

Guyana has remained free of foot-and-mouth disease since the last outbreak occurred in 1978. In order to keep its disease-free status, Guyana maintains an annual program of sanitary measures along the border with ing the annual dry period (September through April).

Guyana regards the three-country Border Agreement with Brazil and Vene-zuela as a vital factor in the program to ensure its status as a foot-and-mouth disease-free country.

# 2.8 Paraguay

Paraguay has an updated program for foot-and-mouth disease control during the 1984-88 period, based on the epidemiological characterization of the disease as related to livestock production. The policy actively maintains the animal-health agreements with neighboring nations as regional strategy. Paraguay has undertaken a massive program of the use of oil-adjuvanted foot-and-mouth disease vaccine in selected areas or zones.

#### 2.9 Peru

Taking into account the country's excellent epidemiological situation, and based on the regional strategies reflecting the characterization of livestock production, the Foot-and-Mouth Disease Control Program in 1984 drafted a working plan whose goal is to secure the disease control so far achieved and reduce the incidence of foot-and-mouth disease.

The guidelines of the policy to be followed are:

- a) establish the necessary controls and/or restrict the importation of animals and animal products coming from countries affected by footand-mouth disease;
- b) restrict the internal transit of animals coming from the major risk areas and bound for disease-free areas;
- c) implement and maintain active border agreements with Bolivia and Ecuador, aiming to prevent the introduction of virus;
- d) collect serological samples in San Martín, Tacna, Moquegua, Loreto and Ucayali, in order to confirm the possible absence of tivity in those departments;
- e) strategic and systematic vaccination of the bovine livestock, including areas with 2 and 3 annual vaccination phases and areas without

systematic vaccination, and the expansion of the areas using oiladjuvanted vaccine to the zones subject to a high risk of mouth disease where it is difficult to administer vaccine ically every 4 months, such as the area along the borders Bolivia and Ecuador, and the dairy area around Arequipa.

# 2.10 Uruguay

The country's General Department of Veterinary Services is currently studying a foot-and-mouth disease control plan that proposes total eradication by the end of the 1980's.

#### 2.11 Venezuela

The Foot-and-Mouth Disease Control Program has asked the higher authorities of the Ministry of Agriculture and Livestock (MAC) to consider drafting a program for the control and eradication of foot-and-mouth disease, concomitantly with the construction of the oil-adjuvanted vaccine production laboratory. The program would pursue the rational use of the vaccine produced in Venezuela as part of a plan to eradicate the disease by achieving and expanding free areas starting in the eastern part of Venezuela.

#### 3. SUBREGIONAL PLANS

The document "Policy and Strategies for Foot-and-Mouth Disease Control in South America for the 1981-1990 Ten-Year Period" recognizes that its operations must direct their priorities to the cattle-breeding areas, which are the starting point of almost all the epidemic waves on the continent, and which are responsible for the disease's permanent presence in the affected fattening areas.

The most representative examples of those areas are:

# 3.1 The Three-Country Border Area of Argentina, Brazil and Uruguay

Bilateral agreements between each pair of countries have been in existence for a long time, as well as a trilateral technical agreement involving all three nations. In 1983, as a direct consequence of the policy and strategic commitments assumed with respect to foot-and-mouth disease control, technical and higher authorities from the three nations' Ministries of Agriculture met to define the animal-health and international trade policies among the three nations.

Concerning foot-and-mouth disease control, the nations upheld their intention of eradicating the disease in the livestock-raising area under their common influence. From the viewpoint of the national plans of action, the goal is to eradicate foot-and-mouth disease in Argentina's Mesopotamia, the states of Rio Grande do Sul and Santa Catarina in Brazil, and all of Uruguay, before the end of the 1980's. The three nations' technical meetings periodically evaluate the progress of the strategy undertaken by each one to reach the mutual objective.

# 3.2 Pantanal of Mato Grosso and Eastern Plains of Bolivia

The development of action intended to eliminate the possible endemic foci in this area is not as advanced as the program involving Argentina, Brazil and Uruguay. However, in addition to the border agreement between Brazil and Bolivia, national action in this regard is expected to commence in 1984.

Bolivia, for example, is awaiting IDB approval of the national project to incorporate this zone into its plan of action. Brazil has meanwhile scheluded for 1984 the startup of activities intended to immunize the bovine herds in the pantanal region, and to control the exit of animals.

#### 3.3 The Colombian-Venezuelan Plains

The startup of specific action in the Colombian part of this subregion is the second priority of its national foot-and-mouth disease control plan, and depends largely on the success of the government's request for funding from the World Bank.

No specifically programmed action has yet been approved by the MAC in Venezuela, although studies conducted by the foot-and-mouth disease-control program has identified the western plains region (Apure, Barinas, Guárico) as the probable endemic source of virus.

The two countries have not yet implemented a suitable foot-and-mouth disease border agreement.

#### 3.4 East-Central Region of Brazil

The national foot-and-mouth disease control program has identified the breeding area around the borders shared by Minas Gerais, Bahia and Espirito Santo as one of the three endemic areas of major epidemiological importance in Brazil.

The plan of action for 1984 includes the startup of several specific activities aiming to eliminate the region's epidemiological influence on other areas of the country. Nevertheless, these activities have not been given the priority assigned to the endemic area on the borders with Argentina and Uruguay.

#### 3.5 South-Central Argentina

The commencement of systematic vaccination with oil-adjuvanted vaccine in the province of Río Negro is one of the activities intended to transform the region into an unaffected area starting in 1986. The new national foot-and-mouth disease control plan will undertake action to protect and expand the area just north of that province.

#### 3.6 Colombian and Ecuadorian Border Area

The border agreement between these countries is actively pursuing the

goal of eliminating foot-and-mouth disease in the area under their joint influence. The national projects prepared or currently being drafted assure this objective in the goals proposed for the southern region of Colombia and the north-central area of Ecuador, respectively.

PAFMDC. May, 1984.

APPENDIX IV - RECOMMENDATIONS OF THE "INTERNATIONAL
SEMINAR ON THE EVALUATION OF THE USE
OF OIL-ADJUVANTED VACCINE IN THE
FOOT-AND-MOUTH DISEASE-CONTROL PROGRAMS
IN SOUTH AMERICA"

# RECOMMENDATIONS OF THE "INTERNATIONAL SEMINAR ON THE EVALUATION OF THE USE OF OIL-ADJUVANTED VACCINE IN THE FOOT-AND-MOUTH DISEASE-CONTROL PROGRAMS IN SOUTH AMERICA" (PROASA)

Place and Date: Rio de Janeiro, Brazil. May 2-10, 1984

Participating countries: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Uruguay, Venezuela.

#### Objectives:

- a) To evaluate the training activities developed for dissemination of the technology of production, control and use of oil-adjuvanted foot-and-mouth disease vaccines;
- b) To analyze the advantages and disadvantages of the use of oil-adjuvanted foot-and-mouth disease vaccine;
- c) To outline or define epidemiological aspects for the control of foot-and-mouth disease according to regional characterization, based on the characterization made at the level of try;
- d) To define the strategic, tactical and operational aspects for controlling the disease through the use of oil-adjuvanted vaccine.

#### 1. SUMMARY

It has been shown that the forms of livestock production characterize and determine ecosystems particular to the health-disease process. This signals an advance in the epidemiological diagnosis of the sanitary problems and, consequently, in the selection of the most feasible and effective control strategies. This evidence results from the fact that present-day epidemiological, demographic and socioeconomic indicators permit the identification of predominant categories of production and of foot-and-mouth disease ecosystems. Therefore, the regional characterization of the forms of production discloses the predominance of one of them in the areas studied.

It has likewise been shown that there are techniques of production and epidemiological conditions that exceed the political and administrative boundaries within and among the countries. This situation underscores the need to implement regional control strategies based on the definition of the foot-and-mouth disease ecosystems.

The indicators and categories have been developed jointly by the staffs of the animal-health programs in South America, with technical cooperation from the Pan American Health Organization channelled via the Pan American

Foot-and-Mouth Disease Center. This methodology has been applied and enriched through the courses conducted within the framework of the PROASA project, with financial support from the Inter-American Development Bank.

The development of this adopted methodology must be continued. The results will signify an important contribution not only for the control of footand-mouth disease, but also to overcome other diseases. Moreover, the training of central and field-level personnel in the methods of characterizing of production and ecosystems will result in better application of the methods of planning, administering and evaluating the animal-disease control programs.

#### 2. RECOMMENDATIONS

I. Preparation of a document on the methodology for characterization of forms of production and ecosystems

Whereas:

No single document contains a simple and practical compendium of all the methodological contributions developed for the regional characterization of forms of livestock production and of epidemiological ecosystems;

It is hereby recommended:

That the Pan American Foot-and-Mouth Disease Center draft, as quickly as possible, a reference document containing the complete methodology for such characterization, enabling the methodology to be easily applied at the various technical levels of the animal-health services in South America.

# II. Compatibility of the epidemiological surveillance systems

Whereas:

The epidemiological surveillance systems in all the countries of the continent have attained a good level of development in support of uniform disease-control programs; and

National programs are currently undergoing reformulation and are establishing differentiated regional strategies according to the forms of livestock production and foot-and-mouth disease ecosystems;

It is hereby recommended:

That the epidemiological surveillance systems be rendered compatible with the regional characterization of the livestock productions forms and ecosystems identified, as well as the selective control strategies proposed for each of them.

# Extending the methodology for characterization of production forms to other animal species and disease ecosystems that affect them

Whereas:

There are no indicators to characterize livestock production forms for species other than the bovine species, but which are predominant in given regions and which are subject to diseases that are a reason of concern for the countries;

#### It is hereby recommended:

That the Pan American Foot-and-Mouth Disease Center be asked to extend to other animal species the methodology for the characterization of production forms and the definition of ecosystems of the diseases of major importance that affect them.

# IV. Development of epidemiological data banks

Whereas:

The need to maintain a continually updated characterization requires the handling of large volumes of varying data, and the present manual processing systems, in these circumstances, are slow, costly and generally inefficient;

# It is hereby recommended:

That the countries organize epidemiological information systems supported by electronic processing, depending on the possibilities available in each country. The Pan American Foot-and-Mouth Disease Center's experience could be utilized by providing the necessary technical cooperation, putting the programs at the countries' disposal for filing and recovering available epidemiological data, or performing the processing thereof in an initial phase.

# V. Training of human resources for epidemiological characterization of other diseases of bovines

#### Whereas:

The human resources of the national animal-health services that have so far been trained in the characterization of production forms and ecosystems have been restricted fundamentally to foot-and-mouth disease in bovines;

#### It is hereby recommended:

That human resources be trained in the application of the methodologies for characterization of livestock production forms and ecosystems related to other diseases of the bovine species.

# VI. Training in data processing and multivaried statistical analysis

#### Whereas:

The characterization of production forms and ecosystems of the different diseases of the bovine species requires large volumes of complex information, whose manual processing is hardly practical, and whereas there is a lack of personnel specialized in electronic data processing and in the application of multivaried statistical techniques commensurate with the nature of this information;

#### It is hereby recommended:

That personnel be trained in electronic data processing and multivaried analysis, for which the technical cooperation of the Pan American Foot-and-Mouth Disease Center is requested.

# VII. Training of field personnel

#### Whereas:

The events of technical training developed to date have not enabled all the personnel of the programs' operational and tactical levels to be trained;

#### It is hereby recommended:

That the technical personnel located at the regional and local levels of the animal health programs be trained in the application and use of the regional characterization indicators, in order to orient and improve animal-health activities.

# VIII. Extending the training to university staffs

#### Whereas:

The training of veterinary doctors at the respective Schools of Veterinary Medicine does not, under the present circumstances, include instruction in the methodology of regional characterization of the forms of livestock production and epidemiological ecosystems;

#### It is hereby recommended:

That an awareness of the methodologies used to characterize the production forms and epidemiological ecosystems be expanded through the training of professors of epidemiology, statistics and other aspects of preventive veterinary medicine at the Schools of Veterinary Medicine.

# IX. Strategies and technical instruments for the application of the strategies

#### Whereas:

The International Seminar on the Evaluation of the Use of Oil-Adjuvant-ed Vaccine in the Foot-and-Mouth Disease Control Programs in South America provided an opportunity to examine and discuss, at the continental level, the strategies proposed by the various countries in the National Courses conducted prior thereto, within the framework of the Technical Cooperation Agreement between the Inter-American Development Bank and Pan American Health Organization (PROASA);

Said examination was conducted for two groups of countries (Andean Group and Southern Cone Group), the respective reports being found in Appendices I and II of the Seminar Report;

Those reports, as well as the discussions held, point out both the pertinence and, in some aspects, the permanent applicability of the considerations and recommendations formulated at the Seminar on the Dissemination of the Technical and Operational Mechanisms for the Use of Oil-Adjuvanted Vaccine in the Foot-and-Mouth Disease Control Programs, which was held in Rio de Janeiro, Brazil, in May-June, 1982; and

Nevertheless, thanks to the knowledge imparted by means of the National Courses and the more comprehensive epidemiological studies conducted since then, it is possible to make other proposals whose execution offers sure perspectives for further improvement of the existing animal-health situation and, what is even more promising, for changes in the condition of the ecosystems that are considered important from the epidemiological standpoint;

#### It is hereby recommended:

- a) That the accepted criteria be adopted by the countries in their foot-and-mouth disease control and eradication programs;
- b) That the countries be aware of the necessity of rendering their structure and administrative aspects commensurate with those criteria, in order to accomplish the implementation of those strategies;
- c) That priority attention be focused on the primary endemic areas because they are the areas that generate the problem;
- d) That the priority in the assignment of the available resource of oil-adjuvanted foot-and-mouth disease vaccine be oriented toward the primary endemic and high-risk paraendemic areas according to the characterizations conducted in the different countries;
- e) That in the disease-free areas, where cattle-raising activities are implemented, adequate sanitary norms be adopted in order to maintain this status;

- f) That in border areas which the countries have characterized as having the same form of production, efforts be made to apply similar strategies through the animal-health agreements involving neighboring countries; and
- g) That studies be conducted to identify the areas of virus activity in the primary endemic ecosystems.

# X. Vaccine production and control

#### Whereas:

The information provided by the countries has shown an increase in the number of laboratories producing oil-adjuvanted foot-and-mouth disease vaccine, thus resulting in greater availability and production capacity. Nevertheless, the minimal quantity required for the programs is not yet available; and

Most of the countries have attained the infrastructure necessary for the corresponding control of vaccine quality;

#### It is hereby recommended:

- a) That the countries continue encouraging the vaccine-producing laboratories to provide the quantity of oil-adjuvanted vaccines required by the programs;
- b) That uniform control standards be adopted, based on the control guidelines furnished by the Pan American Foot-and-Mouth Disease Center and reviewed at the International Seminar on Vaccine Controls held in 1983 in Asunción, Paraguay;
- c) That, insofar as possible, the application of this vaccine in the priority areas be conducted by, or under the control of, the official animal-health services; and
- d) That each country review and update the legislation referring to oiladjuvanted foot-and-mouth disease vaccine.

#### XI. Continuity of the training

#### Whereas:

The evaluation of the oil-adjuvanted vaccine sub-program conducted under the PAHO/IDB Agreement has shown the following program results: the training of the countries' technical personnel in the methods of foot-and-mouth disease characterization; the definition of control strategies based on foot-and-mouth disease ecosystems; and the production and control of oil-adjuvanted foot-and-mouth disease vaccine;

The training of human resources is a dynamic process requiring continuity in the training activities; and

The Seminar recognizes the usefulness of the national and regional courses that have been held to date, and likewise acknowledges its gratitude and appreciation to the institutions that organized, funded and conducted those courses;

#### It is hereby recommended:

- a) That the knowledge acquired be disseminated as widely as possible, and the generation of new knowledge be encouraged. This should be accomplished through national courses to be conducted under the responsibility of the countries, and through international seminars or workshops, and attention to consultations with the technical assistance of the PAHO/PAFMDC and financial support from the interested international agencies;
- b) That for the development of the national courses in the countries where they have not become institutionalized, the respective training units or groups should be organized so as to permit the participation of the veterinary schools and other pertinent educational entities.