IICA

INTER-AMERICAN INSTITUTE FOR COOPERATION ON AGRICULTURE

INTERNATIONAL MEETING FOR THE STRENGTHENING OF REGIONAL PLANT PROTECTION ORGANIZATIONS WITH SPECIAL EMPHASIS ON LATIN AMERICA AND THE CARIBBEAN

San José, Costa Rica
June 13-17, 1983

IICA FAO WMO EPPO

IICA/FAO/WMO/EPPO

INTERNATIONAL MEETING FOR THE STRENGTHENING OF REGIONAL PLANT PROTECTION ORGANIZATIONS WITH SPECIAL EMPHASIS ON LATIN AMERICA AND THE CARIBBEAN

San Jose – Costa Rica
June, 13 to 17, 1983

CONTENT

PROGRAM

INTERNATIONAL MEETING FOR THE STRENGTHENING OF REGIONAL PLANT PROTECTION ORGANIZATIONS WITH SPECIAL EMPHASIS ON LATIN AMERICA AND THE CARIBBEAN

SAN JOSE – COSTA RICA
June 13–17, 1983

PROGRAM

Sponsored by: IICA (Inter-American Institute for Cooperation on Agriculture)

FAO (Food and Agriculture Organization of the United Nations)

WMO (World Meteorological Organization)

EPPO (European and Mediterranean Plant Protection Organization)

Aims:

1. To study the need and possible means for coordinating the regional plant protection organizations and other international organizations in order to improve performance at the world level;

2. To define priority areas for action;

3. To increase the efficiency of regional plant protection organizations by avoiding unnecessary duplication and making better use of financial resources for plant protection programs;

4. To examine special implications of these studies for plant protection in Latin America and the Caribbean (e.g. plant quarantine, certification, safe use of pesticides, integrated pest management, agrometeorology applied to pest and disease prevention, information exchange, training, etc.).

Monday 13: (Morning)

10:30 Inaugural Session

12:00-13:00 Refreshment offered by the FAO Representative in Costa Rica

(Afternoon)

SESSION I: Chairman. N. Gerbier (WMO)

14:00-14:30 a. International Plant Protection. J. F. Karpati (FAO)

14:30-15:00 b. Plant Protection in Latin America and the Caribbean. F. Dao (IICA)

15:00-15:30 c. Agrometeorology and International Plant Protection. N. Gerbier (WMO)

15:30-15:45 Break

15:45-16:30 Discussion

SESSION II: Chairman. F. Dao (IICA)

a. World Regional Plant Protection Organizations (North American, Latin America and the Caribbean)

16:30-16:45 NAPPO (North American Plant Protection Organization)

16:45-17:00 JUNAC (Junta del Acuerdo de Cartagena)

17:00-17:15 OIRSA (Regional International Organization of Plant Protection and Animal Health Care)

17:15-17:30 Southern Area Ad-Hoc Committee

17:30-17:45 CPPC (Caribbean Plant Protection Commission)

18:00 Coctail offered by the Director General of IICA

Tuesday 14:

b. African Organizations

08:30-08:45 IAPSC: (Inter-African Phytosanitary Council)

c. European Organizations

08:45-09:00 EPPO: (European and Mediterranean Plant Protection Organization)

d. Asian and Pacific Organizations

09:00-09:15 APPPC: (Asian and Pacific Plant Protection Commission)

09:15-09:30 SPC: (South Pacific Commission)

09:30-10:00 Discussion

10:00-10:15 Break

SESSION III: Chairman. G. Mathys (EPPO)

Themes for better International Cooperation

10:15-10:45 1. International Cooperation in Plant Protection. G. Mathys and I. M. Smith (EPPO)

2. Study of various themes leading to improved cooperation

2.1 Quarantine, Certification, fumigation and inspection

Views on means for world-wide coordination

10:45-11:00	EPPO	G. Mathys
11:00-11:10	NAPPO	F. Romero
11:10-11:20	OIRSA	A. Villacorta
11:20-11:30	IAPSC	–
11:30-11:40	APPPC	–
11:40–11:50	CPPC	M. Vaughan
11:50-12:00	JUNAC	–
12:00-12:10	SOUTHERN AREA AD-HOC COMMITTEE	M. Boroukhovitch

12:10-12:45 Discussion

12:45-14:00 Break

2.2 Harmonization in the field of pesticides

14:00-14:15 2.2.1 The status of the International Code of Conduct on the Distribution and Use of Pesticides. J. F. Karpati (FAO)

14:15-14:30 2.2.2 Harmonization of pesticide registration procedures and safe use of pesticides. G. Mathys (EPPO)

14:30-14:45 Discussion

14:45-15:00 2.3 Research training, publication and exchange of information. F. Damtoft (IICA/CIDIA)

15:00-15:15 2.4 Agricultural Formal Education Program. J. Soria (IICA)

15:15-15:30 Discussion

15:30-15:45 Break

SESSION IV: Chairman. J. Saunders (CATIE)

1. Projects for research and development in Plant Protection sponsored by International Agencies

15:45-16:00	CIMMYT:	G. Martínez V.
16:00-16:15	USDA/APHIS/PPQ:	B. Hawkins
16:15-16:30	G.T.Z.:	D. Godoy
16:30-16:45	CICP:	R. F. Smith
16:45-17:00	USAID/ROCAP:	A. Chiri
17:00-17:15	CIAT:	G. Galvez

Wednesday 15: **SESSION V:** Chairman. M. Frére (FAO)

Agrometeorology and Plant Protection

08:30-9:10 1. Forecasting pest risks to crops: The agrometeorological approach. N. Gerbier (WMO—Geneve)

09:10-9:25 Discussion

09:25-10:10 2. Agrometeorology and Plant Protection. D. Rijks (WMO)

10:10-10:30 Discussion

10:30-11:00 Break

11:00-11:40 1. IICA's work in agroclimatology. J. P. LHomme (IICA)

11:40-11:50 Discussion

11:50-12:20 4. The importance of agrometeorology at macro and micro-scale in plant protection. M. Frére (FAO)

12:20-13:00	Discussion
13:15-14:00	Break
	SESSION VI: Chairman. A. Villacorta (OIRSA)
	Further studies of International Plant Protection Programs
	1. World-wide
14:15-14:30	A Global System for the Safe and Rapid Exchange of Plant Germplasm. J. F. Karpati (FAO)
14:30-14:45	The International Working Group on *Ostrinia* spp., the Stem borers of Maize. H. C. Chiang (U.S.A.)
14:45-15:00	The *Trichogramma* world-wide network. J. Voegele (INRA-France)
15:00-15:15	Stored pulses, Bruchids and applied ecology. V. Labeyrie and M. Jarry.
15:15-15:30	Break
	2. Latin American and Caribbean Countries
15:30-15:45	FAO's Program in Latin American and the Caribbean. M. Vaughan (FAO)
15:45-16:30	Others followed by discussion
Thursday 16:	Visit to CATIE, Turrialba
Friday 17:	**SESSION VII: Recommendations and Conclusions for further Cooperation**
08:30-09:00	1. Designate two working groups to prepare specific proposals on priority themes a. First Group: Chairman: B. Hopper (Canada) b. Second Group: Chairman: R. Barrow (Trinidad and Tobago)
09:00-12:45	Working Groups
12:45-14:00	Lunch
14:00-15:15	Working Groups continue
15:15-15:30	Break
15:30-17:30	Plenary Session: Discussion of proposals and recommendations presented by the working groups
18:00	Closing Session

LIST OF PAPERS PRESENTED

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O : Oral Report
W : Written Report
W : Written Report in Absentia
N : No Report

Session I:

O : International Plant Protection. J. F. Karpati (FAO)

W : Plant Protection in Latin America and the Caribbean. F. Dao (IICA)

O : Agrometeorology and International Plant Protection. N. Gerbier (WMO)

Session II:

W : North American Plant Protection Organizations (NAPPO)

W : Board of the Cartagena Agreement

W : Regional International Organization of Plant Protection and Animal Health Care (OIRSA)

W : Southern Area Ad-Hoc Committee

W : Caribbean Plant Protection Commission (CPPC)

N : Inter-African Phytosanitary Council (IAPSC)

W : European and Mediterranean Plant Protection Organization (EPPO)

W : Asian and Pacific Plant Protection Commission (APPPC)

N : South Pacific Commission (SPC)

Session III:

W : 1. International Cooperation in Plant Protection. G. Mathys and I. M. Smith (EPPO)

W : 2. North American Plant Protection Organization, Position related to the Harmonization of Western Hemisphere Phytosanitary Problems and Resources. F. Romero (NAPPO)

W : 2. CPPC's interest and views for coordinated action among plant protection organizations in Plant Quarantine, Certification, fumigation and inspection. M. Vaughan (FAO)

W : The Status of the International Code of Conduct on the Distribution and Use of Pesticides. J. F. Karpati (FAO)

W : Harmonization of pesticide registration procedures and safe use of Pesticides. G. Mathys (EPPO)

W : Research, training, publication and exchange of information. F. Damtoft (IICA)

W : Agriculture Formal Education Program. J. Soria (IICA)

Session IV:

W : Projects for research and development in Plant Protection carried out by CIMMYT. G. Martinez Valdes (CIMMYT)

W : Projects for Research and Development in Plant Protection. Remarks of Bert Hawkins, Administrator, APHIS/USDA (USA)

W : Projects for research and development in Plant Protection sponsored by International Agencies. German Agency for Technical Cooperation (G.T.Z.) D. Godoy (Nicaragua)

W : Pest and Pesticide Management Programs of the Consortium for International Crop Protection (CICP). R. F. Smith, Executive Director (USA)

W : Integrated Pest Management Project for Central America and Panama A. Chiri (CICP/ROCAP) (USDA-GUATEMALA)

W . Methodology for introduction and distribution of propagation material (Sexual and asexual) of plant species of research interest to the International Center for Tropical Agriculture – CIAT. G. Galvez (CIAT/IICA)

Session V:

W : Forecasting Pest Risks to Crops: The Agrometeorological Approach. N. Gerbier (WMO). Geneve

O : IICA's Work in Agroclimatology. J. P. LHomme (IICA)

W : The Importance of Agrometeorology at Macro and Micro-scale in Plant Protection. M. Frére (FAO)

Session VI:

W : A Global System for the Safe and Rapid Exchange of Plant Germplasm. L. Chiarappa and J. F. Karpati (FAO)

W : The International Working Group on *Ostrinia* spp., the Stem borers of Maize. H. C. Chiang (Professor of Entomology, University of Minnesota (USA)

W : The *Trichogramma* World-Wide Network. J. Voegele. INRA. France

W : FAO's Program in Latin America and the Caribbean. M. Vaughan (FAO)

W : Stored Pulses, Bruchids and Applied Ecology. V. Labeyrie and M. Jarry. (Institut de Biocenotique Experimentale des Agrosystemes. France)

REPORT OF THE MEETING

INAUGURAL SESSION

a. Opening remarks by Dr. Rodrigo Santa Cruz, FAO Representative in Costa Rica and Dr. Joseph F. Karpati, Plant Quarantine Officer, FAO, Rome.

b. Opening remarks by Dr. Norbert Gerbier, President of the Commission for Agricultural Meteorology, WMO.

c. Welcoming address by Dr. Francisco Morillo Andrade, Director General of IICA.

d. Official Inauguration by Dr. Francisco Morales, Minister of Agriculture and Livestock of Costa Rica.

Mr. Alfonso Naranjo, Officer of Protocol, IICA, opened the meeting by officially welcoming the delegates to IICA Headquarters in San Jose, Costa Rica. Mr. Naranjo served as Chairman of the Inaugural Session and introduced the participants of this Session.

Dr. Rodrigo Santa Cruz, FAO Representative in Costa Rica called attention to the fact that Article VII of the UN/FAO International Plant Protection Convention provides for the creation of regional plant protection organizations.

Dr. Joseph F. Karpati, Plant Quarantine Officer, FAO, Rome, stressed the opportunities that this meeting offered in strengthening the collaboration among the many organizations serving plant protection in the Western Hemisphere.

Dr. Norbert Gerbier, President of the Commission for Agricultural Meteorology (WMO), recalled that the idea for this International Meeting of Plant Protection Agencies had been suggested at a meeting of the Working Group on Protection Organization which took place in Dublin, in 1968. It also reflected agreements reached at the Eighth Inter-American Conference on Agriculture held in April, 1981 in Santiago, Chile, and the decision adopted by the Executive Committee of WHO at its 34th Session held, in May, 1982.

Dr. Francisco Morillo Andrade, Director General of IICA, talked about IICA's overall program and again welcomed the participants.

Dr. Francisco Morales, Minister of Agriculture and Livestock of Costa Rica, related that 80 per cent of the exports from Costa Rica were agricultural products. Six to eight crops make up 60 per cent of these exports. It was noted that coffee is a very important crop to Costa Rica Dr. Morales considered the international efforts to contain and prevent the spread of Coffee Rust Disease as contributing to the absence of this disease in Costa Rica. The international efforts to contain foot and mouth disease are also crucial to Costa Rica's agriculture.

Dr. Morales officially opened the International Meeting on behalf of the Government of Costa Rica and wished the participants every success in their deliberations.

SUMMARY OF PRESENTATIONS AND DISCUSSIONS

SESSION I: GENERAL

The meeting was chaired by Mr. N. Gerbier, President of the Commission for Agricultural Meteorology of WMO.

Dr. Karpati, Plant Quarantine Officer of FAO, presented a film strip demonstrating the various fields of action of the Plant Protection Service of FAO. He then completed his presentation with some considerations specifically regarding plant quarantine aspects. He deplored, that despite great efforts, the number of qualified persons in this field was still much below the requirements. He also mentioned that FAO will start to publish in the fall of 1983, summaries of plant quarantine regulations.

Dr. F. Dao, Director of the IICA Plant Protection Program, presented the main activities of his program, which is one of the 10 action programs of the Institute. He mentioned the high levels of crop losses in the Continent due to pests and diseases and deplored the general weakness of the information and control networks and the lack of interdisciplinary cooperation. He proposed some remedial actions: Establishment of precise programs and control networks, improve the interdisciplinary cooperation and the legal aspects of plant protection.

Mr. N. Gerbier, President of the Commission for Agricultural Meteorology of WMO, presented the activity of WMO in the field of agrometeorology with special reference to the various aspects of plant protection problems. He mentioned in particular, the importance of the time and space scales in the application of agrometeorology to plant protection activities.

DISCUSSION

Dr. Mathys requested that Dr. Karpati clarify FAO's goals in the field of weed management. Dr. Karpati replied that FAO was currently creating a special panel of Experts on Weed Control which will have the technical responsibility of establishing the FAO action program concerning weed control.

Professor Chiang requested additional information on the FAO Training Program. Dr. Karpati replied that training is a continous process supported by the FAO Technical Cooperation Program and by other Regional Technical Organizations and with the Member Countries. Much of the training program in plant protection is carried out in Latin America and the Caribbean. He mentioned in particular, a course in plant quarantine and protection which will be held in Jamaica, August, 15-26, 1983. He mentioned also other courses planned for 1984 in the Asian and Pacific Region. Professor Chiang requested also some information on agrometeorological instrumentation. Relevant parameters are rainfall and duration of leaf wetness, temperature and relative humidity; soil moisture has also a great importance, as well as wind, particularly that measured at the level of the crop. The potential importance of automatic agrometeorological stations and remote sensing was also mentioned.

Ing. Morales expressed concern about the lack of ability to identify quickly the pests which may be brought into the country by imported material and detected at ports of entry. This aspect is very important in order to assure, at an early stage, the best methods for eliminating these new pests. He stated that some identifications take up to one year.

Dr. Vaughan recommended that a list of specialized entomologists in the various crops and countries could be assembled by computer, distributed to all countries of the region and

be regularly updated so as to provide a list of specialists easy to consult in order to insure a quick identification of potential pests.

Ing. Morales mentioned that the list should include specialists in entomology, phytophatology and nematology.

Dr. Mathys mentioned the value of meetings of specialists on specific questions like the one organized by EPPO at Harpenden (England) on *Phytophthora fragariae*.

SESSION II: WORLD REGIONAL PLANT PROTECTION ORGANIZATIONS

The first part of this session was chaired by Dr. Federico Dao and dealt with presentations of the various regional plant protection organizations working in the Western Hemisphere.

Dr. F. Romero presented the activities carried out by NAPPO, (Canada, the United States of America and Mexico) which was formalized in 1976. He called attention to the difficulties of financially supporting an organization like NAPPO beyond the normal commitments of the national plant protection services.

Dr. Otero presented the activities carried out by OIRSA which includes countries of Central America, Mexico and Panama. He stated that the origin of cooperation began in 1940 with the control campaign against locut infestations in Central America. However, OIRSA was not officially organized until 1955. The program of OIRSA includes:

1. The determination of pests and diseases of significant economic importance for the seven countries;

2. The training and operation of teams of control specialists; and

3. The training of new personnel.

Dr. Boroukhovitch presented the report of the "Ad-hoc" Committee for Plant Protection for the Southern Region of South America. He mentioned that this committee was made up by Argentina, Brazil, Chile, Paraguay and Uruguay, and was created in 1980. The Committee signifies the beginning of cooperation among these countries in the area of Plant Protection.

Finally, Dr. Mario Vaughan presented the activities of the Caribbean Plant Protection Commission comprised of 17 countries of the Caribbean Area. This commission was established in 1960 and is presently working under the general responsibility of the FAO Regional Plant Protection Office in Santiago, Chile. It is anticipated that a position for a FAO Plant Protection Officer will be created in the region soon; who will also serve as Technical Secretary for the Commission. Operational funds for program activities are obtained from FAO regular programs.

DISCUSSION

Dr. Mathys asked whether the post of Executive Secretary of NAPPO was a full time job and if NAPPO was publishing scientific publications. Dr. Romero replied that at this time, it was not a permanent full-time position. He mentioned that in the absence of a NAPPO budget, activities were supported financially by the individual national budgets. Dr. Romero men-

tioned also that the Annual Report of NAPPO included as annexes some technical notes. Dr. Hawkins stated that NAPPO was still in its infancy but that an operative budget for the organization was likely to exist in the future.

Replying to a question by Mr. Gerbier, Dr. Vaughan mentioned that so far cooperation between CPPC and the National Meteorological Services was nonexistent.

An exchange of views took place on the "International Organization for Biological Control" (IOBC) of which Dr. Mathys is the Secretary General.

The IOBC is composed of regional sections:

- Western Hemisphere (with Prof. Chiang as Chairman)
- Western Paleartic
- Eastern Paleartic and Asian Pacific (excluding Australia).

It was mentioned that as yet IOBC has no section in Africa, it was pointed out that a clear distinction should be made between EPPO and IOBC. EPPO is an inter-governmental organization while IOBC deals mainly with Research Institutes interested with biological control.

Professor Chiang mentioned that the section in IOBC dealing with the America's was in his opinion, too big geographically and could possibly be organized into two subsections.

Dr. Morgado asked about EPPO's Working Party on Rodent Control stating that Venezuela had a rodent problem in rice and sugar cane. Dr. Mathys stated that a forecasting system must be set up: if an outbreak is detected, the population is already in the declining stage, and the damage has already been done. He reported that in the Netherlands muskrats had been a problem because of the burrows they were causing in dikes. Control is effected basically by the use of anticoagulants; Warfarin and second generation anticoagulants. Basic problems with their use arise from other animals eating dead and dying rodents.

SUBSECTION II (c–d) OTHER ORGANIZATIONS

The second part of Session II was chaired by Dr. Vaughan. The Inter-African Phytosanitary Council (IAPSC) and the South Pacific Commission (SPS) were not represented at this meeting: there were no reports submitted.

European Organizations:

European and Mediterranean Plant Protection Organization

Dr. G. Mathys, Director General of EPPO, reported that EPPO was founded in 1951 when 15 nations were signatory to the EPPO Convention. Today, the organization is comprised of 34 countries Lebanon and Egypt are likely to become members. Coordinated activities to combat the Colorado Potato Beetle and the working party on storage problems gave impetus to the organization's creation. EPPO has 9 working parties studying phytosanitary regulations, pesticides, stored products, field rodents, muskrat, bird pests, forecasting, Mediterranean crop protection problems and Colorado Potato Beetle. There are 16 panels which provide basic data for the working parties, (e.g., biological evaluation of pesticides reduced volume application, fruit tree viruses, forestry, etc.).

Asian and Pacific Plant Protection Commission

Prof. Huang Ke-Xun reported that present membership of the Commission consisted of 24 countries. The title of the organization was recently changed from "Plant Protection Committee for the South East Asia and Pacific Region". Major areas of activity include attention to the prevention of pre –and post-harvest losses at the small farmer level, development of research, training and extension programs and integrated approaches regarding utilization of resistant varieties, cultural practices, biological control agents and effective indigenous methods.

SESSION III: THEMES FOR BETTER INTERNATIONAL COOPERATION

Dr. Mathys chaired this session and provided an introductory presentation on proposals for the strengthening of international cooperation in plant protection.

Action taken by FAO on a global level includes matters of interest to all member countries and action programs for improved plant protection in developing countries. For the implementation of both these activities the regional organizations have a paramount role to play. Strengthening such organizations is therefore essential and it is equally important also for establishing close links among them.

In presenting the way EPPO is operating there is no intention to set up a model, since it is clear that every region has its particularities and ideas on best approaches. However, given the considerable degree of alignment in several disciplines reached within the 34 EPPO countries and other regions, it seems worthwhile to explain how this been achieved in quarantine by defining a general policy, establishing summaries of phytosanitary regulations, harmonizing techniques for the identification of pests and in adopting common fumigation standards.

Consideration is also given to pesticide registration procedures where considerable benefits can be obtained especially in the field of evaluating toxicology, physical/chemical properties, residues, environmental effects and biological evaluation of pesticides.

Agreements on computer abbreviations of pest names can greatly facilitate the recording of trial data and the computerized data processing.

NAPPO:

Dr. F. Romero of NAPPO proposed that an Ad-hoc group be formed with representation from those regional and coordinating agencies active within the Western Hemisphere. It was suggested that on a worldwide basis, FAO should continue to provide the coordinating umbrella for all organizations. Within the Western Hemisphere IICA seems to have the infrastructure to provide coordination, but under the Worldwide umbrella provided by FAO.

The consolidation of the multitude of regional organizations should be considered in order to reduce or eliminate duplication of effort. FAO should establish a world coordinating council comprised of hemispheric or sub-hemispheric representatives to coordinate short and long term plans.

OIRSA:

Dr. Villacorta referred to the obligation within Article VIII of the IPPC for nations to form regional organizations but noted that the Convention failed to offer any guidance as to

how they are to be coordinated. OIRSA identified the following areas of concern: the creation of list of pests and diseases which occur in member countries (and their exchanges), bibliographic information on exotic pests and diseases, phytosanitary certificates, technical assistance in emergency pest and disease outbreaks, post-entry quarantine stations, training and fumigation procedures and standards.

IICA:

Dr. Dao introduced the IICA proposal for the creation of a Plant Protection Commission to operate in the Western Hemisphere. The Commission made up of the Directors of the Plant Protection Programs of the IICA member states, would serve as an advisory group to further insure the fulfillment of IICA's basic aims within its mandated sphere of responsibility.

SOUTHERN AREA:

Ing. Boroukhovitch presented the Southern Area's proposals that representatives of FAO meet with the plant protection personnel of IICA to develop joint coordinated activity plans in the hemisphere for 1984 and make projections for 1985 and 1986. These plans and projections should then be offered for review and approval to the regional organizations. The Southern Area consider that FAO is the international organization most appropriate to coordinate world-wide plant protection organizations. They should be the link between these organizations and those within the hemisphere.

CPPC:

Ing. Vaughan presented the CPPC's suggestions of ways to improve the links among plant protection organizations. The CPPC feels the need: to define areas of responsibility of each of the organizations concerned wherever a possible competition or duplication of efforts could arise; to complement actions when needed to improve the quality and effectiveness of a national or sub-regional plant protection activity and to establish an effective communication among the organizations regarding technical matters, future activities and events of mutual/general interest.

ICAITI:

Lic. Mazariegos expressed the concern of ICAITI regarding pesticide standards, pesticide quality and the impact of misuse.

DISCUSSION:

OIRSA questioned the statement on the Phytosanitary certificate saying that there was still little uniformity and the recommended model was not being followed by many countries. Dr. Karpati responded by saying there was uniformity and that flagrant exceptions should be sent to his office. It was noted that additional declarations to phytosanitary certificates are demanded by some countries that are impossible to honestly comply with.

A plea was made by regional organizations to FAO to help individual countries make changes.

Dr. Karpati commented that they were opposed to the creation of an Interamerican Commission for Cooperation on Plant Protection as proposed by IICA. He considered that FAO could live with most of the proposals outlined for the regional organizations for cooperation, but that each should be examined closely, and considered accordingly.

Mr. Ford pointed out that the question is not what to do, but who is to do what. He felt there is too much competition between regional organizations on who is to control the areas of influence. There is a need for all to work under FAO coordination and eliminate competition between regional organizations.

The continuation of Session III was chaired by Mario Vaughan.

Dr. J. F. Karpati presented a paper on the Status of the International Code of Conduct on the Distribution and Use of Pesticides. He reported that the Second Government Consultation on International Harmonization of Pesticide Registration Requirements (Rome, October 1982) asked FAO to elaborate an internationally agreed "Code of Conduct in the Distribution and Use of Pesticides". With this objective, FAO has called an interagency meeting will all UN agencies involved in pesticide for June 21-23, 1983 in Rome.

Dr. G. Mathys presented a paper on the "Harmonization of Pesticide Registration procedure and State Use of Pesticides". He indicated that plant protection services are responsible for procedures for the registration and control of pesticides, and the regional plant protection organizations can provide a forum for national services to harmonize their procedures. EPPO has concentrated the activities of its Working Party on Pesticides for Plant Protection principally on the production of harmonized methods of efficacy evaluation, and the international consultative procedures for achieving this are reviewed. They depend on a very active commitment by national services to prepare and review material for discussion. In other regions of the world, the first priority for regional organizations lies in encouraging their overall control process. FAO, WHO and other world organizations have provided many recommendations and guidelines for the development of registration and control procedures, and regional plant protection organizations are well placed to advise on the implementation of these at national level and to ensure that costly overlap or repetition of pesticide testing is avoided through international cooperation and agreement.

DISCUSSION:

Dr. Barrow called attention to the problems created by banning effective pesticides prior to the development of appropriate alternatives. Leaf-cutting ants are becoming more of a problem to control due to the banning of pesticides such as Heptachlor, Endrin, Mirex, etc. He also mentioned that it would be meaningless to attempt to monitor pesticide usage without sufficient personnel.

Dr. Mathys stressed that the decision to register a pesticide is a matter for individual nations to consider based on their particular needs. He said the most important consideration was to insure that the food supply and environments were not contaminated. In response to a question regarding guidelines, Dr. Mathys said that EPPO countries strictly follow the WMO toxicological classification.

There was a question concerning the suggestion that liquid pesticides were more toxic than solid formulations. There was no one who could answer.

Dr. F. Damtoft (IICA/CIDIA) presented a paper "Research, Training, Publications, and Exchange and Information". He described the IICA information program which started in 1982. They now have the necessary software for two information systems and will be using them as a pilot project. They currently have a well-developed and functional geographical information system. They are initiating a regional warning system for annual diseases.

Dr. Jorge Soria (IICA) presented a paper "Agricultural Formal Education Program". This is one of 10 programs approved for IICA in 1982. This program supports crop protection activities in several countries and regions by cooperating with national institutions in the planning, development and evaluation of education programs in crop protection at various levels.

DISCUSSION:

Dr. L. C. González inquired about the existence of any IICA plans for the establishment of a crop protection degree at the Ing. Agr. level. No such plans exist at present. IICA provides some technical support to publication of scientific societies, but not funding. It also publishes technical crop protection literature whenever possible.

SESSION IV. PROJECTS FOR RESEARCH AND DEVELOPMENT IN PLANT PROTECTION

Chairman: Dr. J. Saunders

Dr. Bert Hawkins explained international activities of the Animal and Plant Health Inspection Service (APHIS) of the U.S. Department of Agriculture. He stated their mission as preventing the entry of pests and diseases from other countries and eradicating or controlling those already present in the U.S. APHIS cooperates internationally in plant and animal health activities under 81 treaties, agreements and memoranda of understanding with 38 foreign governments, and has over 1.100 inspectors at ports-of-entry that have been effective in intercepting potentially damaging organisms. APHIS currently has 29 offices established throughout the world, and there are plans to increase this number to 38. International cooperation in strengthening quarantine organizations was emphasized.

Ing. Danilo Godoy presented information prepared by Dr. Rainer Daxl describing the nature, organization and function of GTZ. He emphasized that their philosophy was to train their collaborators so that they can solve their own development problems. He mentioned that GTZ is guided by the principle of minimum intervention; they offer assistance to stimulate initiative and responsibility of cooperating countries. Steps to obtain the cooperation of GTZ were outlined. A brief description of nine national and regional plant sanitation projects in Latin-America was a presented.

Dr. Ray Smith described the organization and activities of the Consortium for International Crop Protection (CICP). He mentioned that CICP has given priority to training in crop protection. Most offerings have been in pesticide management seminar-workshops and plant protection short courses of two to six weeks duration. All training efforts are conducted in collaboration with national institutions in the participating countries, USAID missions and often with international organizations. CICP also provides technical assistance in crop protection. He mentioned the problem associated with the proliferation of conferences, courses, etc. and referred to their quarterly publication "A list of International Conferences Related to Pest Management" that may help avoid duplication of activities and unnecessary over-lap.

Dr. Angel Chiri presented information on a proposed integrated pest management project for Central America and Panama that would be developed and implemented at CATIE. The program will include training, research, and technical cooperation. Training will be at multiple levels covering extension personnel and researchers and would provide training material for farmers, commercial sector employees and IPM specialists. Research will focus on adaptation and development of IPM programs that would be practical under local farming and ecological

conditions. Technical cooperation would be primarily in the area of information management and pest diagnosis.

Dr. Guillermo Galvez informed the delegates on methods of introduction and distribution of propagation material of plant species that are of research interest at CIAT. He presented similar information prepared by Dr. Gregorio Martinez for CIMMYT. Dr. James Bryan covered this subject for CIP.

SESSION V: AGROMETEOROLOGY AND PLANT PROTECTION

Chairman: Dr. M. Frére

Dr. Gerbier, President of the Commission for Agricultural Meteorology, WMO, present a paper on "Application of Agrometeorology in Plant Protection Work". Dr. Gerbier emphasized that the number one priority of the World Climatology Program is Food Production. Others, in order of priority, are: Water Resources, New Energy and the Transfer of Knowledge and Technology. In striving to fulfill these objectives they seek to define homogeneous areas by collecting and analyzing climatological data and to relate such data with similar knowledge collected concerning pests and diseases. This offers an opportunity of forecasting potential pest and disease outbreaks.

The overall objective of the Commission is to support agriculture at national levels, to ensure the transfer of knowledge among member states and especially to developing countries and to have a mechanism for implementation.

They seek the standardization of instruments and work with simulation models based on three types of data: Emperical, Semi-emperical and Biophysical.

It was mentioned that at the present time up to 54 per cent of pesticides applied in certain programs/areas were applied off target, either because of wind drift or applied when there is no target pest present. Such misuse must be corrected.

Dr. Gerbier read a second paper prepared by Dr. D. Rijks (WMO) who was unable to attend the San Jose meeting. This paper was titled "Agrometeorology and Plant Protection", and was similar in theme to the preceding report. it gave examples of the application of agrometeorology to sugar cane and coffee production, items of more interest to Latin America and the Caribbean than migratory locusts. A significant aspect in the coffee program concerns the ability to predict frost.

Wind damage to certain banana varieties is also being studied. Some varieties are more resistant to wind than others. Susceptible varieties can be protected by the creation of wind breaks. However, wind breaks create artificial depression areas which enhance the risk of frost, especially around citrus groves.

Programs to determine climatological zones for maize and sorghum are underway in Central and South America.

It was pointed out that rainfall was more variable than temperature and that it was very difficult to predict (forecast) the amount of rainfall.

Dr. M. Frére (FAO) presented a paper on "Macro and Micro-scale Agrometeorology in Plant Protection". Macrolimatic data refers to large areas and could include a continent. Microclimatic data refers to a clearly defined area, soil or particular canopy.

As an example of a program using macroclimatic data, Dr. Frére referred to FAO's desert locust program in Africa. Population increases and flights of migratory locusts in Africa depend primarily upon rainfall and secondarily, amount of vegetation. Rainfall induces pest population buildup and insufficient vegetation induces the migratory mode. Satellite monitoring of Africa can detect areas where there has been no coverage by rain-bearing cloud formations. Areas not receiving rain present no danger of population build-up. Resources can then be channeled to monitor those areas where rain-bearing clouds have been reported. This leads to a better utilization of available resources and more efficient control programs.

In discussion, reference was made to the Blue Mold epidemic which occurred in 1979. It has not yet been determined if this situation was caused by exceptionally favourable climatic conditions or the appearance of a new aggressive strain. It has been determined that there is a direct relationship between leaf wetness duration and disease severity. For this reason the twice-daily overhead irrigation program employed in Cuba have been changed. It is recommended that all crop residues be eliminated after harvest in an effort to reduce inoculum levels. Growers are also encouraged to use normal contact fungicides rather than systemics which give rise faster to resistant strains of the pathogen. Based on climatological data an alert program is under study. There are three critical points in the program, i.e. Sporulation alert, Spore Survival alert (which can trigger use of a normal contact fungicide) and Infection alert (necessitating the use of systemic pesticides).

SESSION VI: FURTHER STUDIES OF INTERNATIONAL PLANT PROTECTION PROGRAMS

I. WORLD-WIDE. Chairman: Dr. Antonio Adolfo Villacorta

Dr. Karpati presented a paper on "A Global Systems for the Safe and Rapid Exchange of Plant Germplasm". He stated that at the CIAT meeting in June 1982, FAO was asked to create a position for a Plant Quarantine Germplasm Officer.

Dr. Chiang presented a paper on his 14 year activity in the International Project of *Ostrinia* stem borers of corn. The program involves the exchange of maize germplasm between a number of international cooperators and has the benefit that promising breeding lines can be tested for reaction to stem borers in different environments. He reported that there are 7 regional projects within the U.S. where germplasm is being exchanged on a continual basis.

Dr. Voegele presented a paper on the *Trichogramma* world-wide network. He called attention to the potential value of these egg-parasitizing insects in their role as biological control agents.

Trichogramma was reported as having great specificity towards pest species and not attracking beneficial insects. Taxonomic problems are difficult to overcome due to the numbers of sibling species known and the morphological variation within species. These problems are being overcome with the use of the scanning electron microscope and gel electrophoresis.

Nymphs can be stored at 3°C for up to one year and artifical eggs are being researched in an effort to eliminate the dependency upon rearing host species. They hope to develop a "super-trich".

Dr. Mathys read a paper for Dr. Labeyrie on the problem of Bruchid Control. Much attention has been directed to an understanding of these pests and it has recently been accepted that these insects can infest seeds in the field and be brought into storage facilities where they cause significant losses.

Ing. Vaughan presented a paper outlining FAO program proposals for Latin America and the Caribbean.

RECOMMENDATIONS OF THE MEETING

RECOMMENDATIONS OF THE MEETING

1. COOPERATION BETWEEN REGIONAL PLANT PROTECTION ORGANIZATIONS

The Meeting

Considering that strengthening of cooperation among regional plant protection organizations will bring about considerable advantages and facilitate safe and rapid exchange of agricultural commodities;

Stressing that the strengthening of cooperation among these regional organizations should concern quarantine, fumigation, registration and safe use of pesticides, information exchange on dangerous pest situations and plant health legislation, and production of certified planting material;

Recommends 1) that within the regional organizations, common strategies should be developed in the above mentioned plant protection disciplines as well as in other areas deserving priority;

2) that these regional strategies be coordinated within the Western Hemisphere by IICA with the close cooperation of FAO and other world organizations, such as WHO and WMO,

3) that cooperation between regional organizations in different continents should be intensified so as to approach common strategies at world level.

2. INFORMATION ON REGIONAL ORGANIZATIONS IN THE WESTERN HEMISPHERE AND ESTABLISHMENT OF AN AD-HOC GROUP

The Meeting

Considering that it is of special importance that there be detailed information concerning all the regional organizations which work in plant protection in the Western Hemisphere;

Recognizing that the diversity of these crop protection organizations has created a multiplicity of ongoing projects and that the majority of their actions are initiated and executed independently of each other and frequently without collaboration;

Fearing that this can create duplication of efforts in work areas, giving rise to confusion and inadequate resource utilization;

Recommends 1) that IICA should prepare, with their cooperation, a Compendium of these Organizations and their plant health activities, and make this available to FAO,

2) the establishment of an ad-hoc group integrated by FAO, IICA, NAPPO, OIRSA, CPPC, JUNAC and Comité ad hoc del Area Sur, in order to review their respective plans of action, and the work programs of each of the above mentioned Organizations, to avoid duplication of efforts and thus make a better use of the resources in the crop protection areas,

3) that this group would meet every second year; FAO and IICA in accord will effect the necessary actions for this end and will inform the other International Organizations in the Western Hemisphere.

3. PEST LISTS

The Meeting

Recommends 1) that IICA coordinate the development of a list of pests of the major crops of the Western Hemisphere for transmittal to FAO, showing the distribution in each country,

2) that regional organizations in the Western Hemisphere develop a list of pests of plant quarantine concern. The definition of a plant quarantine pest shall be the one developed at the FAO IPPC meeting in Rome in 1976. The list shall be divided into two groups: one for organisms not present within a region and the other for those that occur within the region but for which organized control of quarantine activities are being conducted,

3) that the list of pests be forwarded to FAO through IICA and that FAO be requested to develop a worldwide list of pests of major crops,

4) that each regional organization from committees so that the lists are reviewed and modified as necessary on an annual basis,

5) that a similar approach could be followed by regional plant protection organizations in other parts of the world.

4. COMPUTERIZED DATA

The Meeting

Considering the utility of computerized data processing for the distribution of crop protection information and accordingly for international understanding;

Recognizing the value of harmonized vocabulary of terminology for this purpose, involving abbreviations as appropriate;

Recommends 1) that FAO develops a computer system to relay information on pest lists worldwide,

2) that FAO provides for a computerized distribution system to show the phytosanitary requirements of each country,

3) that FAO provides for the introduction of only one harmonized computer vocabulary in crop protection to be used worldwide.

5. PESTICIDES HARMONIZATION

The Meeting

Endorses 1) the recommendations made at the Second FAO Government Consultation on International Harmonization of Pesticides Registration requirements held in Rome from 11-15 October 1982, where the Consultation recommended that the Director-General of FAO, in consultation with the appropriate UN Organizations and bodies and international organizations outside UN Organizations System, draft a Code of Conduct in the Distribution and Use of Pesticides,

2) the recommendation of the Third Consultation on the Adequate Use of Pesticides in America and the Caribbean that took place in Mexico City in March 1982 where it was recommended that practical steps towards harmonizing measures for pesticides be taken.

6. FUMIGATION

The Meeting

Considering that the fumigation of agricultural and livestock products plays a decisive role in ensuring the compliance with the tolerante requirements and in reducing the infestation of these products which are internationally marked;

Recognizing that the there exists a certain level of ignorance about fumigation procedures and that certain chemical products are frequently wrongly used, thus often causing economic losses;

Recommends 1) that the "International Treatment Manual" prepared by FAO be adopted by the countries of Latin America and the Caribbean, and elsewhere,

2) that this document be studied and comments concerning it be sent to FAO.

7. GERMPLASM EXCHANGE

The Meeting

Stressing that the international development and exchange of germplasm; by whatever means, is vital to global crop production and must continue;

But recognizing that germplasm constitutes a major avenue for the spread of dangerous plant pests around the world;

Stresses that if this negative aspect is not to over-shadow the outstanding benefits, attention must be given to good phytosanitary practices in the exchange of such material;

Recalling the recommendations made at the "International Consultation on a System for Safe and Efficient Movement of Germplasm" held at Cali, Colombia, June 15-17, 1982 regarding the creation of a position for a Plant Germplasm Quarantine Officer within the FAO structure;

Recommends that FAO should look for the ways and means to establish and fill this position promptly.

Further, recognizing the need for the fast, yet safe movement of plant germplasm, and being aware that safe plant health measures are essential to effective plant germplasm exchanges, minimizing or eliminating the risk of introduction of new plant pests;

Recommends 1) that the worldwide movement of plant germplasm be carried out under internationally approved and recognized methods, and that institutes involved in the movement of plant germplasm should consider the issuing of a Plant Germplasm Health Statement to accompany plant material which has passed phytosanitary procedures, complementing the internationally recognized Phytosanitary Certificates,

2) that a post-entry quarantine system strategically located in the different regions be established.

8. AGROMETEOROLOGY

The Meeting

Recognizing the great necessity of a close inter-relation between agrometeorology and plant protection in the Western Hemisphere and indeed at world level;

Suggests to the hemispheric, regional and national organizations that the active intervention of agrometeorology be included in their projects;

In particular, considering the decisive impact of climatic factors on the development of pests and their intensity;

Recommends that a multidisciplinary team, including an agrometeorologist, biologists, a botanist and an agronomist, be established in order to develop an operational model in corn protection in tropical humid areas at CATIE, Turrialba, Costa Rica. Other crops can be focussed upon in the light of the results obtained in corn.

9. PRODUCTION OF *TRICHOGRAMMA* IN THE WESTERN HEMISPHERE

The Meeting

Considering recent developments in the management of *Trichogramma* mass production, especially with regard to proper identification of species and strains and quality control of the production;

Stressing the considerable impact of this bioagent for controlling numerous pests under best ecological conditions;

Bearing in mind that this control method, which proved extremely successful in several parts of the world, could be greatly expanded in Latin America;

Recommends that a Unit for research and mass production of *Trichogramma* including 4 scientists and 4 technicians be established at CATIE, Turrialba, Costa Rica.

10. TRAINING OF PROFESSIONALS

The Meeting

Believing that detection, diagnosis, assessment and timely control of phytosanitary problems require professionals capable of approaching these problems integrally and of taking prompt, practical measures;

Considering that these professionals must be the permanent link between farmers or general agronomists and specialists (entomologists, plant pathologists plant breeders, agrometeorologists, etc.);

Recommends that in the Western Hemisphere and worldwide action should be taken:

1) to favour the training of professionals in crop protection at both the graduate and undergraduate level,

2) to ensure graduate training at the regional level, within the framework of research centers with permanent programs and qualified, integrated specialists,

3) to ensure undergraduate training within the colleges of Agriculture, with the advice and support of international Agricultural Education and Phytosanitary Programs,

4) to encourage in-service training of personnel presently responsible for integrated crop protection in the field.

Further, the Meeting

Aware that a profile of a project for the establishment in Latin America of a center for Plant and Animal Quarantine has been submitted to AID (Agency for International Development);

Recommends that it be made known to that institution that this Meeting gives its full support to the creation of the above mentioned center.

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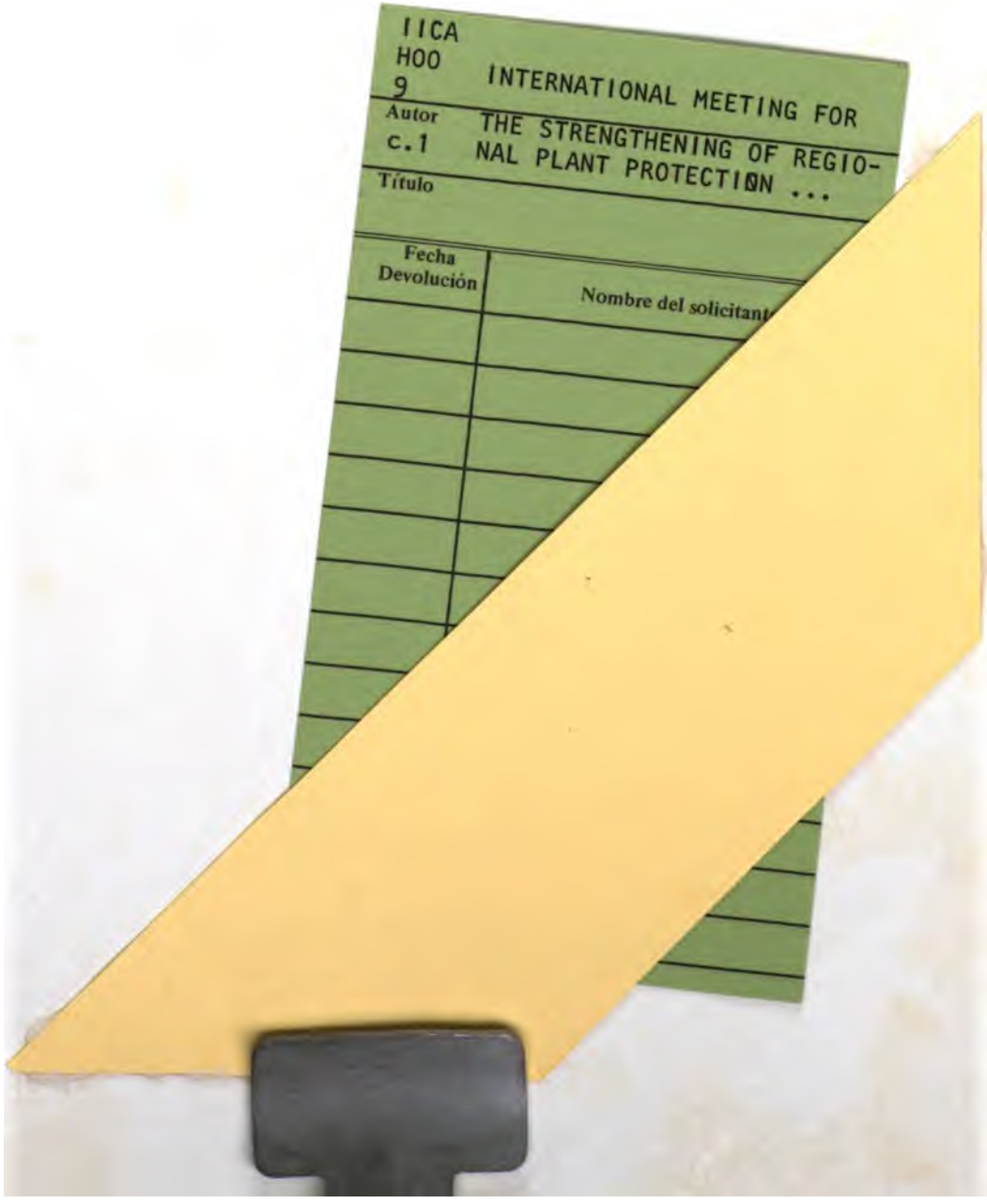
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Editorial
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