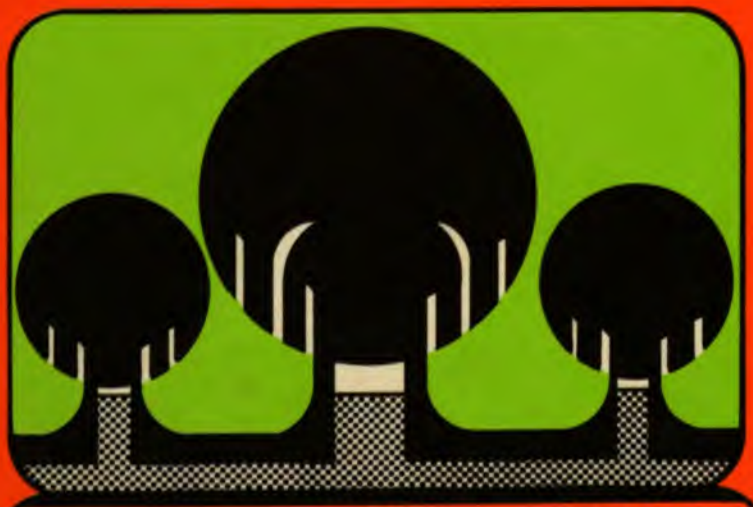
PROGRAMA SANIDAD VEGETAL



V REPORT OF THE SECOND MEETING
OF THE

CONSULTATIVE COMMITTEE OF PLANT PROTECTION

14-17 OCTOBER, 1980
MEXICO, D.F., MEXICO

IICA

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES — OAS

REPORT OF THE SECOND MEETING OF THE CONSULTATIVE COMMITTEE OF PLANT PROTECTION

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MEXICO, D.F., MEXICO

Inter-American Institute of Agriculture Sciences-IICA

Secretariat of Agriculture and Water Resources

Plant Protection General Direction

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II REUNION DEL COMITE CONSULTIVO DE SANIDAD VEGETAL DEL
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II REUNION DEL COMITE CONSULTIVO DE SANIDAD VEGETAL

México, D. F. 14-17 de octubre de 1980

AGENDA

Martes 14

8:30-10:00	Inscripción
10:00-11:00	Elección de la Mesa Directiva
11:00-12:00	CEREMONIA INAUGURAL
	Bienvenida
	Jorge Gutiérrez Samperio Director General de Sanidad Vegetal - México
	Palabras de la Reunión
	Manuel Rodríguez Z. Subdirector General del IICA
	INAUGURACION OFICIAL
	Ing. Abelardo Amaya Brondo Subsecretario de Agricultura y Recursos Hidráulicos México
12:00-13:30	Mecánica de la Reunión e Informe de Progreso
	Federico Dao Director, Programa de Sanidad Vegetal del IICA
15:00-18:00	Presentación y discusión por Areas. (Area Norte, Area Andina, Area Sur, Area Antillas) de los programas operativos para 1981. Las mesas estarán a cargo de los especialistas de Area.

.../

Miércoles 15

9:30-13:00	Sesión Plenaría para la presentación del Programa Operativo Hemisférico y por Areas de Sanidad Vegetal para 1981. (Presentación a cargo del Director del Programa y los relatores de grupos)
14:00-18:00	Sesión Plenaria para propuesta de acuerdo Hemisférico de Protección Vegetal.
	Intercambio de ideas sobre la Coordinación entre IICA y Organismos Regionales Internacionales.
	Propuesta para el Boletín del Programa de Sanidad Vegetal.

Jueves 16

9:00-14:00	Visitas propuestas por el País, sede de la Conferencia.
15:00-18:00	Sesión Plenaria para la consideración y establecimiento de grupos operacionales en áreas prioritarias.
	Otros asuntos.

Viernes 17

9:30-13:00	Sesión Plenaria para Conferencias Técnicas.
	Prospectivas de Sanidad Vegetal en la década del 80.
	Héctor Ceruso
	Aspectos de la Organización Institucional de Sanidad Vegetal.
	Jorge Gutiérrez Samperio.
14:00-18:00	Sesión Plenaria para discusión del Documento Final.
	SESION DE CLAUSURA.

PALABRAS DE BIENVENIDA POR EL SR. ING. JORGE GUTIERREZ SAMPERIO, DIRECTOR GENERAL DE SANIDAD VEGETAL DE LA SECRETARIA DE AGRICULTURA Y RECURSOS HIDRAULICOS EN LA II REUNION DEL COMITE CONSULTIVO DE SANIDAD VEGETAL DEL INSTITUTO INTERAMERICANO DE CIENCIAS AGRICOLAS (IICA)

Tlatelolco, D. F., 14 de octubre de 1980

Dr. Manuel Rodríguez,
Subdirector General del IICA
Emb. Manuel Tello,
Subsecretario de Asuntos Multilaterales de la
Secretaría de Relaciones Exteriores.
Ing. Abelardo Amaya Brondo,
Subsecretario de Agricultura y Operación de la
Secretaría de Agricultura y Recursos Hidráulicos.
Dr. Federico Dao, Director del Programa de Sanidad
Vegetal del IICA.

Estimable auditorio:

Es satisfactorio encontrarnos en esta II Reunión Interamericana de Directores de Sanidad Vegetal y de extenderles una cordial bienvenida.

Deseamos que todos disfruten de la estancia en la Ciudad de México y asimismo nos ponemos a sus órdenes a efecto de brindarles atención, no duden en acudir a nosctros.

.../

Al contar con la presencia de las autoridades de cada país del continente, relacionadas con la sanidad vegetal y tener la oportunidad de expresar unas palabras, quisiéramos que fluyeran ideas y contribuir al éxito de la reunión, sin embargo, tenemos la seguridad de la gran calidad técnica y humana de los participantes y de que un sinnúmero de factores de motivación influirá positivamente al mejor de los logros, establecido el hecho de que el Programa de Sanidad Vegetal que nos ocupa y por el cual nos encontramos en esta reunión, tendrá más valor en tanto que los responsables de cada país lo apoyemos.

Valga considerar que los problemas fitosanitarios no tienen fronteras y originan serios daños a la economía de los países, razón por la cual a muchos de ellos corresponde resolverlos no sólo individualmente, sino de manera multinacional y para ello el intercambio de experiencias es básico.

La actividad que desarrolla el Programa de Sanidad Vegetal será de gran utilidad y más aún porque contará con la cooperación coordinada con los demás organismos que de una u otra manera inciden la misma problemática y así no será una acción duplicada sino un complemento básico a las acciones regionales y nacionales.

Nuestro beneplácito por tenerlos con nosotros y que su estancia en México les sea grata.

DISCURSO DEL ING. MANUEL RODRIGUEZ

SUBDIRECTOR GENERAL DEL IICA.

SR. ING. ABELARDO AMAYA BRONDO, SUBSECRETARIO DE AGRICULTURA DE LA SECRETARIA DE AGRICULTURA Y RECURSOS HIDRAULICOS DE - MEXICO.

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ING. JORGE GUTIERREZ SAMPERIO, DIRECTOR DE SANIDAD VEGETAL DE LA SECRETARIA DE AGRICULTURA DE MEXICO Y PRESIDENTE DE LA SEGUNDA REUNION DEL COMITE CONSULTIVO DE SANIDAD VEGETAL DEL IICA.

LIC. JAVIER CORTINA Y CORTINA, DIRECTOR DE MEXICO DE LA OEA.

SEÑORES DELEGADOS DE LOS PAISES MIEMBROS DE LA OEA.

SEÑORES REPRESENTATES DE ORGANISMOS INTERNACIONALES.

SEÑORES OBSERVAODRES.

ESTIMADOS COLEGAS.

Estimados Señores:

En la Primera Reunión del Comité Consultivo del Programa de Sanidad Vegetal, realizada en la Sede Central del IICA, en agosto del año pasado, tuvimos la oportunidad de revisar los términos de referencia del Programa establecido por Resolución de la Junta Directiva, y establecer algunos lineamientos generales para su implementación.

En el transcurso del presente año, nos hemos dedicado a la labor de la organización del Programa, la contratación de Especialistas Regionales; a verificar consultas y reunir opiniones de los Directores de Sanidad Vegetal, por medio de las cuatro reuniones de los Comités Regionales de Sanidad Vegetal. En las áreas en donde se pudo contratar más prontamente el correspondiente Especialista Regional, se llevaron a cabo las primeras actividades del Programa.

Existe consenso entre los Gobiernos sobre la necesidad de identificar los problemas con el fin de darles un orden de prioridades de acuerdo a sus transcedencias económicas para la agricultura y el intercambio intrarregional e internacional de productos agrícolas.

El Programa de Sanidad Vegetal está incorporado a la Línea de Acción IV - Fomento de la Produccion y la Productividad del IICA, por medio de la cual el Instituto apoya los esfuerzos de los Gobiernos para incrementar la producción y elevar los índices de productividad.

Las acciones de Sanidad Vegetal constituyen parte integrante e inherente del proceso de producción vegetal, debido al gran impacto que tienen los problemas fitosanitarios en la agricultura.

Mencionaremos brevemente algunos problemas fitosanitarios que revisten importancia económica:

1. Exóticos: que requieren un refuerzo de las medidas de previción o cuarentena, mencionaremos como Ejemplos: El CBD (Coffe Berry Disease) y la Roya gris del Cafe. (Hemileia coffeicola).

2. Presentes actualmente en diversos países del Continente.

- La Mosca del Mediterráneao, extendida en varios países del Continente, cuasa pérdidas en Centroamérica y Panamá estimadas en un 20%, que equivalen a 12 millones de dólares, en la producción de cítricos.
- La Sigatoca Negra del plátano. Actualmente en Hunduras y Costa Rica, está produciendo pérdidas que se calculan en más de 50 millones de dólares al año.
- La Roya del Cafeto, produce pérdidas en Brasil, calculadas en un 20%, aún bajo condiciones de control, lo que equivale a una pérdida de cerca de 4 millones de sacos.

  En Nicaragua, en un programa de control tendiente a la erradicación de la Roya, se invirtieron entre 1976 y 1979, cerca de 35 millones de dólares y hoy el problema ya, está en El Salvador y amenaza a Guatemala, Costa Rica y México.

- En otros cultivos básicos para la alimentación como la papa, la yuca y el arroz, las pérdidas por bacterias, hongos y virus, se estiman en un 30%, aún con medidas de control, lo cual representa, considerando sólo el área andina, más de 300 millones de dólares.

  Por otra parte, es necesario resaltar la necesidad de promover estudios que permitan llegar a evaluar el verdadero impacto que causan las plagas, enfermedades y malezas en la producción agrícola. La información fitosanitaria, la incidencia y distribución geográfica, serán una fuente de información importante para tener una concepción clara de la importancia de la Sanidad Vegetal en la producción agrícola y servirá para justificar mayores recursos y mejores estructuras fitosanitarias.

Pero no se trata, solamente, de los problemas biológicos que están involucrados en las interrelaciones de las plagas o los patógenos, con las plantas. Estamos muy preocupados con los aspectos institucionales de legislación, de infraestructura y de procedimientos que afectan la eficiencia de los servicios cuarentenarios y de sanidad vegetal, que también dificultan el suministro de productos agrícolas y su intercambio internacional.

Asimismo, la utilización más intensiva y más diversificada de los plaguicidas, con sus efectos colaterales de intoxicación de los usuarios, de contaminación de los productos agrícolas, de preservación del medio ambiente y de protección de la salud humana y animal, también son cuestiones preocupantes y transcendentes.

Dentro de este contexto, están comprometidas las relaciones comercia-

les y técnicas entre los países, por lo que se requiere una acción coordinada de esfuerzos para que se puedan atender, en forma armónica y efectiva, los problemas que afectan a cada uno de los países y a la región, como un todo.

Estas transcedentes implicaciones nos han llevado a proponer en la presente Reunión, que se considere la conveniencia de buscar una integración fitosanitaria en el Hemisferio, por medio de un mecanismo de coordinación, establecido por los propios países, con el propósito de formalizar las bases para el fortalecimiento de la cooperación mutua y la coordinación de esfuerzos de los países del Hemisferio y de los organismos regionales e internacionales, en el campo de la Sanidad Vegetal.

En las reuniones de los Comités Regionales hubo coincidencia en la necesidad de formar recursos humanos y el intercambio de información de interês fitosanitario, y se identificaron prioridades en cada una de las áreas del Instituto.

Con base en estas premisas, se ha elaborado el proyecto del Programa Operativo de Sanidad Vegetal para el año 1981, que, por supuesto, ameritaría una consideración detendia de los Directres de Sanidad Vegetal de las regiones.

Las dos conferencias que vamos a escuchar; una sobre las perspectivas de la sanidad vegetal en la década del 80 y la otra, sobre aspectos de la organización institucional de la sanidad vegetal, por la capacidad y experiencia de sus expositores y por la naturaleza de los temas tratados, por cierto serán objeto de gran interés y darán la oportunidad para un caluroso inter-

cambio de opiniones, que podrán dar cabida a algunas concluisones útiles para el desarrollo del Programa de Sanidad Vegetal y una más estrecha coordinación entre los países.

Esperamos que en esta Segunda Reunión del Comité Consultivo de Sanidad Vegetal haya un amplio debate sobre los temas que están consignados en la Agenda y que reflejan recomendaciones de las reuniones de nivel hemisférico y regional que han sido celebradas y que se cubran problemas que son del mayor interés y prioridad para los países de la región.

En esta oportunidad, me complace anunciar que la Dirección General del Instituto está empeñada en llevar los recursos de cuotas hasta el nivel de un millón de dólares para reforzar las actividades del Programa de Sanidad Vegetal, en el Programa Presupuesto para 1982-1983, que se someterá a la consideración de la próxima Reunión Anual de la Junta, a celebrarse en el tercer trimestre de 1981.

Otro anuncio de gran interés es que la Dirección General abrirá pronto una cuenta en nuestro Fondo de Fideicomiso para recibir las contribuiones voluntarias de los Estados Miembros del Instituto y de países extracontinentales, además de los saldos del presupuesto del Programa de Sanidad Vegetal, para constituir un Fondo de Emergencia, destinado a atender las situaciones de emergencia creadas por el brote de plagas y enfermedades peligrosas para la economía agrícola de un determinado país o para la región.

Finalmente, quisiera teiterar -una vez más- nuestro compromiso de aunar esfuerzos con los Gobiernos de vuestros países, con los organismos nacionales e internacionales y regionales, en forma tal que, por medio del forta-

lecimiento de las instituciones nacionales, podamos actuar eficazmente - en el mejoramiento de la sanidad vegetal en el hemisferio y por ende, en el bienestar y el desarrollo de nuestros pueblos.

Agradecemos el apoyo brindado por el Gobierno de México para la organización de esta Reunión, por sus valiosas constribuciones y por la hospitalidad y las facilidades para la celebración de este Evento en un país que como México, tiene un Programa que es ejemplo en América Latina.

Reciban ustedes un saludo del Director General del Instituto, doctor José Emilio G. Araujo, quien me ha honrado con su representación y les deseo el mayor éxito en esta importante reunión.

INTERVENCION DEL ING. ABELARDO AMAYA BRONDO, SUBSECRETARIO DE AGRICULTURA Y OPERACION DE LA SECRETARIA DE AGRICULTURA Y RECURSOS HIDRAULICOS EN LA SESION INAUGURAL DE LA II REUNION DEL COMITE CONSULTIVO DE SANIDAD VEGETAL DEL INSTITUTO INTERAMERICANO DE CIFNCIAS AGRICOLAS (IICA)

Tlatelolco, D. F., 14 de octubre de 1980

Dr. Manuel Rodríguez,
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Emb. Manuel Tello,
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Secretaría de Relaciones Exteriores.
Dr. Federico Dao, Director del Programa de
Sanidad Vegetal del IICA.

Estimado auditorio:

Con la honrosa representación del Secretario de Agricultura y Recursos Hidráulicos de México, señor Francisco Merino Rábago, asistimos a este evento de especial trascendencia para nuestros países.

Causas de fuerza mayor impidieron al señor Secretario acompañarnos en esta ceremonia de inauguración de la Segunda Reunión Interamericana de Sanidad Vegetal y al disculparse con ustedes, me ha pedido trasmitirles su atento saludo y hacer un amplio reconocimiento por los elevados propósitos de la reunión.

.../

En diversos foros, tanto nacionales como internacionales, se ha discutido incansablemente la urgente necesidad de resolver el problema de la producción de alimentos y su adecuada distribución. Sin embargo, aún subsisten graves problemas en el suministro de alimentos, multiplicándose las situaciones de urgencia.

Estos problemas no pueden pasar inadvertidos para los que, en una u otra forma, tenemos alguna responsabilidad dentro de la producción agrícola. Estamos conscientes de ellos y también estamos conscientes de que deben multiplicarse las acciones, haciendo un uso inteligente de la tecnología y de los recursos disponibles, si se quiere incrementar la producción y disminuir las situaciones de urgencia.

Dentro de estas acciones, la de sanidad vegetal es de suma importancia por la imperiosa necesidad de proteger a las plantas cultivadas, tanto durante su desarrollo, como en el transporte, almacenaje y distribución de los productos cosechados, para evitar así cuantiosas pérdidas y deterioro en su calidad.

En este sentido, se han desarrollado diversos sistemas para el control y combate de las plagas; cada país, dentro de sus posibilidades, ha logrado éxitos en mayor o menor escala.

Sin embargo, como lo hemos visto, ya no se puede actuar exclusivamente con acciones locales; en muchas ocasiones se tiene que actuar a nivel internacional.

El cada vez mayor intercambio comercial y turístico, originan la presencia de problemas fitosanitarios, que hasta hace pocos años, se antojaban difíciles de existir.

Así, vemos con preocupación que más plagas y enfermedades de vegetales se dispersan en el mundo, creando conflictos económicos y sociales en la producción agropecuaria de países y regiones.

.../

Es por ello que el señor Presidente de la República, empeñado en proveer de la nutrición básica a toda la población nacional y lograr la autosuficiencia en la producción de alimentos básicos mediante el Sistema Alimentario Mexicano, ha venido apoyando y fortaleciendo los programas de investigación, control y combate de plagas, tanto a nivel nacional como internacional.

Con países amigos mutuamente interesados y con organismos internacionales establecidos, se han suscrito convenios, entre los que cabe mencionar los programas de prevención y control de la Mosca del Mediterráneo, de la Roya del Cafeto, del Picudo y Gusano Rosado del Algodonero, etc.

La solicitud que los Ministros de Agricultura hicieron al Instituto Interamericano de Ciencias Agrícolas en la reunión de la Junta Directiva en el año de 1977; para que se estableciera un mecanismo de acción sobre sanidad vegetal para el apoyo al continente en la lucha contra las plagas, será contemplada en esta reunión.

Esperamos que su estancia en México sea placentera y tenemos la seguridad, de que con su entusiasmo y gran experiencia en la materia que nos ocupa, obtendrán conclusiones y recomendaciones que se traducirán en un mejor entendimiento y una colaboración más estrecha en la solución de los problemas, para beneficio de nuestros países.

Muchas gracias

SPEECH BY MR. WALTER VAN WHERVIN L., DIRECTOR GENERAL OF PLANT PROTECTION DIVISION OF THE MINISTRY OF AGRICULTURE. JAMAICA

Mr. President; Distinguished Guests; Fellow Delegates:

I deem it a pleasure to deliver the vote of thanks on behalf of the delegates assembled here.

I would like to extend my special thanks to IICA for inviting us here. We feel that meetings of this type are of extreme importance to all of us, because it enables us to obtain a composite whole from the gramentation that has for so long existed in this Hemisphere. The initiative, interest and action of IICA in bringing us together, should be loduly applauded.

The Mexican Government has made excellent facilities available to us, and this has greatly assisted in making our stay here very enjoyable.

I am sure that we all agree that our deliberations here have been most informative, stimulating and fruitful. As we end a very enjoyable week in Mexico, we are confident that the knowledge obtained here, will put to good use. Again on behalf of the delegates our sincerest thanks for a job very well done.

We would also like to thank the receptionists, typists, drivers, interpreters, and all others, who have in any way assisted in making this meeting a very successful one.

The Second Meeting of the Plant Protection Advisory Committee was held at the Offices of the Secretariat of Foreign Relations of Mexico from October 14 to 17, 1980, in accordance with the call issued by the Director General of the Inter-American Institute of Agricultural Sciences and in compliance with Resolution IICA/RAJD/Res.94(18/79) approved by the Eighteenth Annual Meeting of the Board of Directors.

OFFICERS OF THE MEETING

President:	Jorge Gutierrez Samperio (Mexico)
First Vice-President:	Elkin Bustamante R. (Colombia)
Second Vice-President:	Frank del Prado (Surimane)
Rapporteur:	Mario Boroukhovitch B. (Uruguay)

REPORT OF THE MEETING

In accordance with the approved Agenda, following the election of the Officers of the Meeting, the following points were discussed:

I. Progress Report.

The Director of the Plant Protection Program presented the Progress Report, which was approved as it appears in Annex 1.

II. Discussion of Regional Operative Programs.

Meetings were held by the groups corresponding to the Regional Technical Committees to discuss and amend as necessary the Operative Programs for each of the Areas to be submitted to the consideration of the Plenary Session.

III. Operative Program.

The Director of the Program presented the Plenary Session with the Operative Program proposal on the hemispheric level for 1981, and the committee rapporteurs presented their Area Operative Programs. Following discussion and debate by the Plenary, the Programs were approved as follows:

Plant Protection Operative Program for 1981

The proposed Operative Program includes activities at the hemispheric level which encompass the four areas of the Institute, and at the regional level, within each of these areas.

Resources allocated to the Program by the Board of Directors will be used to implement the Work Plan as well as counterpart funds from participating national institutions and possible contributions from regional and international agencies interested in this field of work.

Hemispheric Level

a. General Program Coordination

The coordination of program activities will be done by the Program Director.

b. Coordination with Regional and International Agencies

Articulation endeavors with other regional and international agencies with the aim of coordinating, complementing and intensifying work underway to attain program objectives, in line with national priority interests.

c. Information Dissemination System

i. The publication of a Plant Protection Bulletin to inform about plant protection news and the activities being conducted by the Institute's Plant Protection Program.

ii. The preparation and distribution of selected bibliographies, with specific references to:

- Rust and Smut of Sugar Cane
- Caribbean Plant Diseases
- Depredatory Birds
- Citrus "Tristeza" Disease

iii. Publication of the book entitled "Introductory Technics in Plant Pathology' by the Program (Teaching Texts and Materials Program of the Institute).

iv. Dissemination at the area level of a Plant Protection Newsletter to plant health specialists in the countries; the newsletter would contain the more salient news and accomplishments in the field of plant protection.

d. Training Human Resources

i. Give short training courses at the regional level, on specific topics of interest to the plant protection services of each area.

ii. Reciprocal exchange of personnel by means of field trips and in-service training on specific plant health problems.

iii. Exchange of specialists to provide knowledge and to guide or orient specific plant protection actions.

iv. Negotiate with the Government of Holland in order to coordinate the selection of technicians to go to Holland for three-month graduate courses in:

- Potato seed certification
- Vegetable Seed production (includes plant protection measures)
- Plant Protection

v. Seek similar negotiations with the Government of Denmark and FAO for selecting specialists to be sent to seed pathology courses.

e. Preparation of Project Profiles

i. As a means of seeking resources for project financing, the following project profiles are being prepared:

- Training technical plant protection personnel, at the different levels.
- Plant Health information.
- A comparative study of plant health legislation, including pesticides.
- Establishment of an Emergency Fund.

Regional Level

1. Northen Area

a. Information Exchange

i. Publication and distribution of a Hemisphere bulletin and Plant Protection Bibliographies.

ii. Publication and distribution of a semestral bulletin, on a regional level.

b. Training Human Resources

i. Participation in the 6-week course on Integrated Pest Control, offered by the International Crop Protection Consortium (CICP).

ii. Participation in a course on Plant Quarantine offered by OIRSA, of an approximate 6-week duration.

iii. Promotional support and information on obtaining other resources for these activities.

c. Quarantine Measures

i. Coordination with OIRSA and the Governments in reviewing quarantine measures so that, without reducing their effectiveness, they contribute to streamlining the marketing of agricultural products in the area.

d. Legislation

i. Collection and analysis of legislation on agrochemicals in the area, in collaboration with ICAITI and OIRSA.

ii. Review of plant protection quarantine laws in the area and, together with OIRSA, development of models for regulations.

e. Regional Reference Library

Preparation of project profiles for establishing a network of pesticide laboratories on the country level, centered in ICAITI's Regional Reference Laboratory, which is Headquartered in Guatemala.

f. Integrated Pest Control

Preparation of project profiles for the integrated control of pests and diseases affecting national and area-wide crops.

g. Meeting of the Plant Protection Regional Technical Committee

Attendance by Plant Protection Directors of the countries in the Area.

h. Acquisition of Financial Resources

Coordination of actions to support the Governments, with the goal of acquiring funding from private and international sources to finance research and activities in Plant Protection.

i. Coordination Visits

Travel expenses for the Regional Specialist to carry out emergency and support activities.

j. Evaluation of Damage

Promotional and advisory services for preparing profiles on the evaluation of damages by pests or diseases in economically important crops on the national and area levels, using the background information and methods developed by OIRSA and the USDA for similar undertakings.

k. Institutional support

Strengthening institutional Plant Protection organizations on the national level, helping more them into institutional levels that are consistent with their importance. Favoring self-management and technical and political managerial skills, as required to deal with national plant health problems and those with international implications.

2. Antillean Area

The Committee considered the Operative Programme under the following headings as was agreeed at the meeting held in Barbados.

- Training
- Communication
- Collaboration and Coordination
- Urgent Pests and Disease Problems
- Other matters

a. Training

The Technical Committee recommends:

i. That IICA initiate in collaboration with other national and international agencies in the Antillean Region, training programmes in plant

quarantine, general plant protection, integrated pest management and in the safe use and efficient application of pesticides. The meeting heard that plans were underway for a plant quarantine course for plant quarantine inspectors in collaboration with USDA and for a course on integrated pest management in collaboration with the U.S. Consortium on International Plant Protection. Plans are also being made to pursue discussions with the Dutch Government for plant protection personnel from the region to pursue short courses in Seed Technology and Potato Seed certification in Holland.

ii. The Technical Committee recommends that IICA investigate the feasibility of holding courses for Plant Quarantine administrators. Training of plant quarantine officers was seen as an important mechanism in the improvement of plant quarantine services which will eventually lead to increased trade.

iii. The Technical Committee observed that the German Government was assisting the Dominican Republic in the organization of two courses in Plant Quarantine and recommends that IICA should coordinate these efforts in order to ensure that all Member States benefit from such activities.

b. Mechanisms for Communication

i. Supports the establishment of a Hemispheric Plant Protection Programme;

ii. supports the establishment of a Newsletter for the Antillean Region;
(The specific details of the newsletter are given below).

iii. proposes the establishment of a Society for Plant Protection in the Caribbean (this is dealt with in the next section. Annex 2);

iv. proposes the production of bibliographies on plant protection problems of the region.

It was agreed that the Newsletter should be produced biannually and should cover such areas as:

- New research findings in the region.
- Abstracts of relevant literature from International Journals

- Information on conferences, courses, etc.
- Activities of Plant Protection Institutions and personnel in the region.
- IICA Plant Protection Programme activities
- Other news of interest to plant protection, e.g. new spray equipment, new pesticides, etc.

c. Collaboration and Coordination

Suggestions were made at the First Regional Meeting of Plant Protection Directors that there was need for a Society for Plant Protection in the Caribbean to act as a collaborating mechanism in the region because the region lacks an agency for coordinating the plant protection activities in Member States.

The Directors of Plant Protection therefore agreed to establish the Society for Plant Protection in the Caribbean, a copy of the proposed constitution of which is attached. It was agreed that since IICA is equipped with the technical and administrative infrastructure for implementing the plant protection programme in the Antillean region, to request IICA to furnish the Technical Secretariat for the Society by permitting the Regional Plant Protection specialist to be Executive Secretary of the Society. The Society is seen as an important instrument of communication and collaboration in Plant Protection in the Caribbean, as members of international and regional organizations involved in plant protection in the Caribbean will be specifically invited to become members of the Society

d. Urgent Pest and Disease Problems

The Directors of Plant Protection in the Antillean region recognized the following as the most urgent plant protection problems of the region:

1. Smut disease (Ustilago scitaminea) and rust disease (Puccinia melanocephala) of sugarcane.

2. Lethal yellowing, wilt and red ring disease of Coconut.

3. Leaf cutting ants.

4. Nematode damage to crops, especially vegetable crops.

5. Moko disease (Pseudomones solanceanum) on banana and plantains.

6. Coffee leaf rust and coffee berry borer (Hypothenemus hampei).

7. Citrus decline (Nematode, viruses and soil problems).

8. Inefficient use of pesticides.

9. Pin worm on solanaceous crops.

10. Seedborne pathogens and related technology.

11. Assessment of losses due to pests, diseases and weeds.

Priority was attached to the following:

1) Lethal yellowing, wilt and red ring disease of Coconut.

2) Studies on leaf cutting ants.

3) Nematode damage to crops.

4) Seedborne pathogens and related technology.

With respect to these areas of urgent pest and disease problems, the Directors of Plant Protection agreed as follows:

a. That IICA should assist in mounting Plant Quarantine Campaigns against the following to prevent their further spread or introduction in the Caribbean:

i. Coffee berry borer
ii. Coffee rust
iii. Leaf cutting ants
iv. Coconut diseases
v. Moko disease

b. That IICA should assist in studies on the ecology of Keiferia lycopersicella (Busck), the pin worm of Solanaceous crops, which should contribute to the possibility of integrated control of this pest.

c. That IICA could assist in the transfer of technology on the control of lethal yellowing disease from Jamaica to Haiti.

d. That IICA should assist in the solution of the problem of citrus decline by facilitating technical assistance in soil physics or virology.

e. That IICA could assist in establishing cooperation in research on diseases of coconut, which pose a real threat to the production of this crop in the Antillean region.

f. That IICA should assist in the establishment of a mechanism for the transfer of technology on the control of leaf cutting ants from Guyana where there is a project on the control of these pests in collaboration with FAO.

g. That IICA should assist Member States in the identification and preparation of project proposals on the above problem areas in order that these may qualify for funding either from IICA or from international funding agencies; specifically, that a project proposal on crop loss assessment on a regional basis be prepared and that attempts be made to solicit the assistance of FAO in the implementation of such a project.

e. Other business

It was agreed:

i. That IICA should investigate the possibility of the Government of Trinidad and Tobago hosting the next regional meeting of Plant Protection Directors which will coincide with the first meeting of the Society of Plant Protection in the Caribbean. The Dominican Republic was suggested as the alternate site.

ii. That the next meeting should be held during the first week of November, 1981.

iii. That the Directors of Plant Protection who are also members of the Caribbean Plant Protection Commission will initiate discussions at the next meeting of the Commission to establish mechanisms for communication between CPPC and SPPC.

3. Andean Area

In line with Plant Protection Program objectives and strategies and with the recommendations of the Regional Technical Committee, and in view of the resources available, assistance will be given to support and complement activities in the following areas:

a. Institution Building

Advisory and support services will be provided the countries in order to set up an adequate plant health agency organization and to assign these agencies higher priority within the Ministry of Agriculture structures. This activity, already underway in Bolivia and Ecuador, will be continued and will be extended to Peru.

b. Plant Protection Campaigns

The Regional Technical Committee indicated the following Plant Protection problems for priority attention with regard to furthering prevention and control actions:

- Prevention and control of the coffee berry borer (Peru, Bolivia and Colombia).

- Prevention of Black Sigatoka in bananas (Bolivia, Ecuador, Colombia and Venezuela).

- Prevention and control of sugar cane rusts (Peru, Bolivia, Venezuela, Colombia and Ecuador).

- Prevention and control of the citrus "Tristeza" disease (Venezuela and Bolivia).

- Prevention and control of the Cacao Monilia and Witches Broom (Bolivia, Colombia, Ecuador and Venezuela).

- Prevention and control of the Ceratitis capitata and Anastrepha spp. fruit flies (Peru, Venezuela, Colombia and Ecuador).

- Control of pests which affect stored grain (Ecuador, Bolivia and Peru).

As concerns Plant Protection Campaigns, the Program will undertake the following actions in the Andean Area, during 1981:

i. Courses and advisory services on the prevention and control of Black Sigatoka, Mediterranean Fruit Fly and Citrus "Tristeza" disease, and on grain storages, in Bolivia, Colombia, Ecuador, Peru and Venezuela.

ii. Collaborate on the preparation of projects to obtain resources from financing agencies, in line with national requests.

c. Plant Survey and Diagnosis

In this respect, the following projects will be supported and encouraged for cotton, bananas, plantains, cacao and coffee:

- Pest identification and inventory up-date.
- Epidemiological and pest population fluctuation studies.
- Biological control and integrated pest management programs.

d. Pesticide Problems

A Seminar-Workshop will be held in Peru on pesticides for consultants and specialists in the fields of agro-medicine, and the application and handling of pesticides.

e. Training

The Program will encourage the participation of technicians in training courses to increase the number of persons trained in Plant Protection aspects, with regard to:

- Plant Quarantine (Colombia and Venezuela)
- Surveying and diagnosis (Colombia)
- Specific plant health problems (i.e. Black Sigatoka, Mediterranean Fruit Fly).

f. Dissemination

Informative material will be prepared concerning plant health problems of interest to the countries; in addition, three technical brochures will be published on Surveying, Diagnosis and Plant Quarantine.

Assistance will also be given on compiling and sending information of interest for the Program Bulletin.

g. Meetings

A meeting of the Regional Technical Committee of Plant Protection will be held.

h. Other Recomendations

i. For setting up operational groups, it was recommended that a list of Plant Protection specialists be compiled and kept up to date, indicating their various specializations, so they can be contacted if necessary.

ii. It was recommended that the Annual Meeting of the Advisory Committee of Plant Protection Directors, stipulated in the IICA Program, be held in 1982, and that IICA's funds allocated for this purpose be used to reinforce the projects of the Operative Program.
The meeting of the Regional Technical Committee will be held every year.

iii. The Regional Technical Committee of the Andean Area recommended that the approved Operative Program be carried out in accordance with Recommendation No.3 of the Quito Meeting, which concerns the mechanisms for coordination among the countries and with regional and international organizations active in Plant Protection in the Andean Area. The recommendation states:

1. For Plant Protection activities in the Andean sub-region, IICA will work in coordination with the Board of the Cartagena Agreement (JUNAC).

2. For Plant Protection activities on the national level, IICA will work in direct coordination with the Plant Protection Services of each country.

The Technical Committee reiterates its opinion that IICA's activities must be carried out in close coordination with JUNAC, so that the Plant Protection Program as defined can be implemented with a minimum of duplication of effort, and in accordance with the Cooperation Agreement signed between the two organizations.

4. Southern Area

1. Study and Harmonization of Plant Protection Legislation

a. Compiling and studying plant protection legislation in the different countries of the area.

b. Analysis and harmonization of regulations in use with regard to:

i. Quarantine
ii. Pesticide residues
iii. Specific plant health problems:

- Citrus canker (Xanthomonas citri (Hasse))
- Coffee rust (Hemileia vastatrix)
- Fruit flies (Ceratitis capitata and (Anastrepha spp)
- Depredatory birds: pigeons (Zeneida cohebes) and parrots (Mypositta)
- Pests and disease of wheat.
- Nematodes (Globodera rostochiensis,- G. pallida, Heterodera spp, Pratylenchus spp., etc).

c. The adoption of standard measures to treat certain types of merchandise at point of origin, as a means of controlling the spread of disease and of streamlining marketing mechanisms.

2. Information Dissemination System

a. Encouraging the collection of information for the Plant Protection Program Bulletin.

b. Plant Health Newsletter for the Southern Area (periodic distribution).

c. Plant Health information sheet on specific topics (periodic distribution).

3. Regional Coordination Mechanism

a. Strengthening national and regional institutions

i. Provide technical secretariat support to the Ad-Hoc Plant Protection Committee for the Southern Area.

ii. Assist requesting countries to restructure health resources and quarantine plant services.

b. Reinforcement of Technical Cooperation Activities

i. Regional and international technical cooperation and the exchange of information on actions and programs underway in each country or in the area, or planned in collaboration with such agencies or institutions as FAO, IDB, UNESCO, UNIDO, and others.

ii. Multilateral plant protection planning with the assistance of experts from IICA and the national institutions, evaluate and formulate project guidelines for work on:

- Citrus canker
- Fruit flies
- Depredatory birds
- Nematodes
- Other problems of interest to the zone.

iii. Holding the Annual Regional Technical Committee Meeting.

4. Personnel training in:

a. Plant quarantine
b. Campaigns for the prevention, control and/or eradication of high priority pests.
c. Evaluation of losses caused by pests
d. Proper use of pesticides
e. Integrated pest control.

The International Potato Center (CIP) offers its cooperation to IICA and the countries in:

a. Detecting and diagnosing specific potato pests:

- Viral pests, by supplying and making available sera and indicator plants. The CIP also places its Plant Protection services at the disposal of the countries, as well as diagnosis and detection techniques applicable to other crops.

- Nematological pests, including the Globodera genus.

- Bacteriological pests, including the Pseudomonas and Erwinia geni that infect potatoes.

In areas 2 and 3, the CIP also offers its diagnostic techniques to the countries.

b. Training

The CIP will be eager to assist in training Plant Protection specialists through courses and support efforts by providing professors scheduled by IICA coordination with the countries.

c. The CIP places technical and scientific informative material on the health problems of potatoes at the disposal of IICA and the countries.

d. The CIP offers its experience in potato seed production programs, in order to help improve the regulation and certification of tolerances for seeds, as established by the countries.

The delegates from USA and Canada reported on the possibility of providing Southern Zone specialists with training in plant quarantine, as a contribution to quarantine services. This possibility would be channeled through IICA and the Governments of the various countries.

IV. Proposal for Hemispheric Agreement

In regard to the proposal for the Inter-American Plant Health Cooperation Agreement, the Second Meeting of the Plant Protection Advisory Committee approved the recommendation of the Delegate from the United States and proposed that draft regulations be drawn up, based on the model of the Hemispheric agreement presented to the meeting, to be submitted for consideration and approval at the Twentieth Annual Meeting of IICA in 1981.

The draft proposal will be written by IICA's Plant Protection Program and submitted to the consideration of the Plant Protection Directors in each of the member countries in February, 1981. Each country would have two months to study the document and send comments to IICA's Plant Protection Program, for the preparation of a final proposed set of regulations, which would be submitted for the consideration and approval of IICA's Board of Directors in 1981.

V. Plant Protection Program Bulletin

1. In regard to the structure of the proposal as presented (Annex 2), it was recommended that Alert Services in Point 4, be changed to read " Reference Services".

2. It was recommended that, in the early phase of the bulletin, the tables of contents not be included in the publication. It was also recommended that the possibility be studied of having these tables of contents reach the Plant Protection Offices in the countries through the monthly publications of the various specialized entities, such as the International Tropical Agriculture Center (CIAT).

3. The Committee recommends that the Bulletin give emphasis to the following topics:

   i. New findings in the Region
   ii. Events related to Plant Protection
   iii. Legislation and Pesticides.

4. The participants recommended that the Bulletin initially have a broad structure for the selection and publication of subjects.

VI. Mechanisms of Coordination with Regional and International Organizations

In regard to the mechanisms for Coordination with Regional and International Organizations, the delegates made the following recommendations:

1. A number of important institutions in the Hemisphere are working directly or indirectly in the field of Plant Protection or providing assistance in this area. This means there must be close coordination between IICA's Program and these organizations.

2. Similarly, every country has Plant Protection experts whose participation in courses, seminars, and personnel training would be extremely beneficial, and who could make important contributions to the solution of area-wide problems.

3. In order to avoid duplication of effort, it will be necessary to draw up terms of reference to establish working areas among the organizations.

4. IICA's Plant Protection specialists should maintain close relations with the regional and international organizations working in their areas, in order to foster the exchange of information and mutual support, which can be provided with an eye to strengthening program activities.

5. Similarly, it would be extremely valuable for Plant Protection Directors to receive information about the various actions being undertaken by international organizations in the field of plant protection in the zone and on the Hemispheric level.

6. Finally, it was recommended that the CIP's offer of cooperation for the Southern Area be extended to all the other Areas.

VII. Need to Establish Operational Groups

After listening to the presentation of Mr. Bruce Hopper (See Annex 4), the Executive Secretary of the North American Plant Protection Organization, NAPPO, on the operation of that organization, the Advisory Committee received an exchange of opinions and recommended:

1. That IICA request more information from NAPPO on the organization, functioning and procedures of the activities of the Technical Committee.

2. That, on the basis of the information obtained at this Meeting and requested as described above, the Regional Technical Committee evaluate the need to set up Operational Groups to handle specific problems. This item would appear on the Agenda of the Annual Meeting of the Regional Committees.

VIII. Other Business

Under this item, the following points were discussed:

- Next Meeting of the Advisory Committee.
- Plant Health information from Brazil.
- Expression of gratitude to Mexico and IICA.

In regard to these points, the Committee recommended:

a. That Venezuela's offer to host the next Meeting of the Advisory Committee be gratefully accepted. This meeting is slated for 1982.

The Dominican Republic offered to consult with national authorities concerning the possibility of serving as an alternate site for the meeting.

It was decided that the meetings of the Regional Technical Committees will be held on an annual basis.

b. The Delegate from Brazil reported that the record should show that Soya Rust (Phakopsora pachirrizi) does not exist in Brazil.

c. The Committee accepted and approved the Peruvian Delegate's expression of appreciation to the authorities of the Secretariat of Agriculture and Water Resources of Mexico, and particularly of the General Plant Protection Office, for organizing the event and seeing to the needs of the participants.

The Committee also expressed its appreciation to the Secretariat of Foreign Relations of Mexico for its contributions to the success of the Meeting.

Finally, the Delegate from Grenada expressed his gratitude and appreciation to IICA, and particularly to the IICA Office in his country.

journals will be included for purposes of reproducing their tables of contents.

This Bulletin will be published by the Plant Protection Program as part of the plant health information system However, to ensure its success, all Plant Health Services and Offices in the countries and institutional personnel working in this field must be convinced of the need for the bulletin and be willing to send periodic and timely information about plant health and protection news in the countries.

IICA'S PLANT PROTECTION PROGRAM

PROGRESS REPORT

Federico Dao, Director
Plant Protection Program

It is a real pleasure to meet with you all again. During the last few months I have had the opportunity to develop close ties with you in our work together to close up program gaps at the Regional Technical Committee meetings.

As Director of the Plant Protection Program, I have been expressing my serious concerns for over a year now, on the current status of Plant Protection throughout the hemisphere, and the need for the program to work in a coordinated fashion in order to benefit all the countries of Latin America and the Caribbean. As distances around the world, and particularly throughout the Continent, continue to shrink the relationships between us all become ever more important.

We must work together, acknowledge the importance of our profession, and take firm steps forward, if we are to reduce losses caused by pests and diseases, and thus increase food production.

I would like to take this opportunity to thank IICA's Board of Directors, its Director General, represented at this meeting by Deputy Director General, Ing. Manuel Rodriguez Zapata, and IICA's staff members, who have all gone out of their way to help and support Program activities. My gratitude is also extended to the Directors of Plant Protection throughout Latin America and the Caribbean, and to the national, regional and international institutions which have backed the program: their contributions and suggestions will certainly help us attain the goals we have set.

Our special thanks to Mexico's Secretariat of Agriculture and Water Resources, which, through the Plant Protection Office, offered Mexico as the site for our meeting, and to the Foreign Affairs Office, for their support in making this a successful event, in benefit of the entire hemisphere.

As you are aware, the principal objectives of this meeting are to set our goals and define the operative program at both hemispheric and regional levels.

First, however, I would like to summarize the activities which have been carried out during the brief period the program has been in existence.

Program Headquarters

Given IICA's organizational structure, Program Headquarters was established in San José, Costa Rica. Program guidance and follow-up activities for both the area and the countries will be developed there.

Employment of Personnel

Our first task was to select our regional experts. This was not easy, because of the shortage of personnel specialized in plant health, as well as the typical administrative and human problems involved in hiring.

To date, specialists have been employed for the Andean, Antillean and Sourthern Areas; we have yet to find the appropriate person for the Northern Area.

These Specialists joined us at the Regional Technical Committee meetings this past year. Moreover, the Program Director visited most of the countries - and their respective Plant Health Office- in order to follow-up on the recommendations from the first Meeting of Directors of Plant Protection, and to develop closer ties, to benefit the Program. It has been an arduous and pinstaking task, but the results are beginning to show, and will be shared at this meeting.

Coordinating Actions to do with Pesticides

In addition to the follow-up and organizational activities described above, the Program already has a project underway with the Policy Sciences Center to analyze the pesticide problem in Latin America. Eigh countries in Central and South America were selected for the first stage of consultation. Three consultants visited these countries to gather information from governments, formulating plants and pesticide manufacturing centers on labelling, formulation and application. The consultants will present their recommendations towards the end of October. These will subsequently be sent to the countries which were visited for their information and study. A meeting will then be convened so these countries can analyze the report together, make pertinents recommendations, and suggest guidelines for future actions.

Coordination with International Agencies

- A cooperative agreement has been signed with the Board of the Cartagena Agreement concerning agricultural development, which includes and emphasizes plant and animal health matters. A course in Plant Quarantine for the Andean Area is currently being organized with the Board of the Cartagena Agreement.

- Contacts have been made with the Union of Banana-Exporting Countries (UPEB) for establishing bases for joint actions in the Northern Area for tackling the Black Sigatoka disease. IICA collaborated with UPEB in organizing its first technical meeting -held in San José, Costa Rica in January 1980- and has published a list of Bibliographic References on this disease, which includes summaries of the articles.

- IICA has been negotiating with the Government of Holland, in the area of training, whereby IICA will be responsible for selecting candidates to post-graduate courses in Plant Protection and Seed Production.

- Technical assistance was provided to the Moscamed Committee (Mediterranean Fruit Fly) for its development programs.

- It was agreed with the International Potato Center (IPC) in Lima, Perú that the Program would distribute scientific literature produced at the Center, starting with the publication on 'Potato Diseases'.

- Permanent contacts have been maintanined with OIRSA, ICAITI, CIAT, NAPPO and CPPC with the aim of establishing future cooperative actions.

Advisory Services to the Countries

- Technical assistance was also provided to the Government of Bolivia on plant health problems dealing with rice pests.

- The Government of Venezuela was assisted in preparing plant health regulations for different crops.

Technical and Scientific Information and Dissemination

- In Information, five Bibliographies were compiled on: The Mediterranean Fruit Fly, Coffe Rust, Black Sigatoka in Bananas, Citrus Canker, and the Red Ring disease of Coconuts.

Three of these publications will be distributed at this meeting; the other two are being published and will be sent to you soon.

- We have been working closely with the Coffe Improvement Program (PROMECAFE) on several projects, and collaborated with them on the joint publication of the Coffe Rust Bibliography, by increasing the previous number of references. PROMECAFE will distributed this bibliography to the countries.

- We have drawn up a structural outline of the Program's Hemispheric Bulletin which has already been sent to the countries for review and comment.

Actions dealing with Institutional Aspects.

Plant health institutions surveys are planned for the four geographic areas of IICA's action. The first preliminary study was carried out in the Southern Area, and is described in the document of the first meeting of the Regional Technical Committee for the Southern Area; additional information remains to be added. Steps have already been taken to initiate the studies in the other areas to obtain the necesary basic data. Information gathered will serve as a basis for a document on status of plant health throughout the hemisphere, which the Program hopes to present at the VIII Inter-American Conference on Agriculture, to be held in April 1981.

Moreover, information on plant health legislation is being collected from the countries. I would be grateful if the countries that have not yet sent this information, would do so as soon as possible.

With the aid of three consultants, the Program is preparing a series of project profiles to be submitted to international financing agencies. These profiles involve Information, Publications, Training and the Energency Fund.

Area Activities

Specific activities by area are getting underway, insofar as problems associated with selecting and hiring qualified specialists have permitted, in each case. Thus, information in this progress report will refer only to concrete activities in the Andean and Southern Areas, where work got underway in February and June, respectively. As of this October, activities have started in the Antillean Area, but staff for the Northern Area has yet to be employed.

Regional Activities

Institutional Support

- A preliminary diagnostic survey on the current status, organization and resources of plant protection services in the countries in the Sourthen Area.

- Advisory and institutional support services have been provided to Bolivia and Ecuador for organizing their plant protection offices.

Identification and Diagnostic Studies

- Epidemiological studies on Coffe Rust are being carried out in three climatic zones of Tingo Maria, Peru. In Cuzco, an evaluation of pests and diseases in potatoes and other andean crops is being conducted.

Training and Information Dissemination Actions

Most work in this area has taken place in Peru and Ecuador, particularly with reference to training technicians on aspects of the coffee rust problem, which is of serious concern to countries of this Area.

Courses were given to 90 technicians in three coffee producing regions of Peru.

- In Ecuador, a First International Course on Coffe Rust was given in cooperation with FAO, for 35 technicians and professionals.

- Two Colombian technicians were sent to Central America for training in the identification and diagnosis of Black Sigatoka in bananas, a problem of significant concern to Colombia.

- The Program has also collaborated with JUNAC (Board of the Cartagena Agreement) in preparing and publishing information and audiovisual materials on the coffee rust problem and on the technification of coffee cultivation.

- At the meeting of the Regional Technical Committee for the Andean Area, the Directors of Plant Protection made a number of suggestions concerning the Plant Protection Program, which refer to program content, objective and others, which served to clarify, define and better interpret the objectives and actions pursued by the Plant Health Program approved by the Board of Directors, (These suggestions are given in the document Recommendations of the Regional Technical Committee for the Andean Area).

-As previously mentioned, Program activities for the Southern Area got underway in June. To date, these activities have promoted establishing contacts with and visiting the Plant Protection Directors of the Area, research institutions, universities, and regional and international agencies working in this field, in order to inform them about the Program.

The First Regional Technical Committee for the Area was also organized. The Program also collaborated with the Policy Sciences Center in obtaining information from governments on specific agrochemical matters in the Center's Northern, Andean and Southern Areas.

Gentlemen, I feel that progress has been made in the short time that we have been working together, thanks largely to the support you have given the Program. I feel that we are only beginning, however, and that there is still much to do. We hope you will continue to support our efforts and help us to clearly identify what we must do, and how to go about it. I would be grateful for any comments you may have on the work accomplished to date, or on how to go about improving Program actions.

This is the second time we have met; which in itself, is a positive Program accomplishment. It is our hope that you will come to view these meetings as forums for discussion, for the mutual benefit of our countries, and of our rural development. It is because of this that we need your support and your active participation.

At the first meeting held in August 1979, you made a number of recommendations for establishing working guidelines for the Program. Since then, we have had a number of meetings in the different regions and have selected the areas requiring priority attention, as defined by you, and today we will present to you our plans of what we hope to implement at both the hemispheric and regional levels.

Thus finally, I will present you with the work program which IICA plans to undertake with the countries, during the coming year.

Thank you for your presence at this meeting. I hope the results will contribute to a more prosperous agriculture and will help strengthen our national plant protection offices and services.

Thank you.

Mexico, D. F. Mexico. October 14 , 1980

RESOLUTION ESTABLISHING THE SOCIETY FOR PLANT PROTECTION IN THE CARIBBEAN

1. RECOGNIZING that the countries of the Caribbean region are generally dependent on agriculture as a source of food, foreign exchange and employment.

2. COGNIZANT of the fact that there are many plant pests and diseases which limit agricultural production in these territories.

3. BEING AWARE that a plant pest or disease problem which occurs in one country is a threat to the agriculture of all the other countries of the region.

4. BEING FURTHER AWARE that there is no organization which coordinates plant protection activities in the region.

5. RECOGNIZING that there is need for an effective mechanism for communication on plant pest and disease problems of the region.

6. CONSCIOUS of the fact that effective communication can substantially augment and expedite plant protection efforts in the Caribbean

The Directors of Plant Protection in the countries of the Caribbean currently attending the Second Hemispheric Meeting of Plant Protection Directors organized by the Inter American Institute of Agricultural Sciences of the Organization of American States and held in Mexico from October 14-17, 1980, have established the Society for Plant Protection in the Caribbean.

The objectives of the Society are:

- to strengthen inter-governmental and inter-institutional cooperation in plant protection in the Caribbean;

- to establish a forum for the discussion of plant protection issues affecting Caribbean agriculture;

- to act as a forum for the exchange of ideas and information among plant protection personnel of the Caribbean;

- to promote and stimulate research and teaching in plant protection subjects viz Entomology, Plant Pathology, Weed Science, etc. and to ensure that these are integrated into the discipline of plant protection;

/...

- to stimulate discussion and actions to ensure that the Caribbean environment remains free from contamination by pesticides;

- to carry out all other activities which may be associated with preserving the plant genetic resources of the Caribbean from destruction by pests and diseases as may be defined by the Executive Committee.

The interim officers of the Society are:

President

Mr. Walter Van Whervin
Principal Research Officer - Plant Protection
Ministry of Agriculture
Jamaica

Vice-President

Dr. Ronald Barrow
Chief Technical Officer - Research
Ministry of Agriculture
Trinidad and Tobago

Executive Secretary

Dr. Chelston Brathwaite
Senior Lecturer in Plant Pathology
University of the West Indies

Assistant Secretary

Dr. Eslie H. Alleyne,
Head of Plant Protection,
Ministry of Agriculture
Barbados

Members of the Executive Committee are:

Mr. Frank McDonald,
Head of Plant Protection,
Ministry of Agriculture
Guyana

Mr. Eligio Frías,
Director of Plant Protection,
Ministry of Agriculture,
Dominican Republic

AMENDED CONSTITUTION OF

THE SOCIETY FOR PLANT PROTECTION IN THE CARIBBEAN

(SPPC)

Article I. NAME

The Society shall be called The Society for Plant Protection in the Caribbean.

Article II. OBJECTIVES

The Society shall have the following objectives:

Section 1. To strengthen inter-governmental and inter-institutional co-operation in plant protection in the Caribbean.

Section 2. To establish a forum for the discussion of plant protection issues affecting Caribbean agriculture;

Section 3. To act as a forum for the exchange of ideas and information among plant protection personnel of the Caribbean;

Section 4. To promote and stimulate research and teaching in plant protection subjects viz Entomology, Plant Pathology, Weed Science, etc. and to ensure that these are integrated into the discipline of plant protection;

Section 5. To stimulate discussion and actions to ensure that the Caribbean environment remains free from contamination by pesticides.

Section 6. To carry out all other activities which may be associated with preserving the plant genetic resources of the Caribbean from destruction by pests and diseases as may be defined by the Executive Committee.

Article III. MEMBERSHIP

Section 1.

Eligibility: Any person interested in or associated with plant

protection in the Caribbean shall be eligible for membership on payment of dues as prescribed in the bylaws.

Section 2.

Sustaining membership shall be available to any firm or organization interested in, involved with or contributing to Caribbean agriculture.

Article IV. OFFICERS

Section 1. The officers of this organization shall be President, Vice-President, Executive Secretary and Assistant Secretary.

Section 2. The President shall preside over meetings of the organization as well as Executive Committee and perform such other duties as may be necessary for the proper functioning of the Society.

Section 3. The Vice-President shall preside in the absence of the President over meetings of the Society and of the Executive Committee. Also he shall perform such other duties as may be delegated by the President.

Section 4. The Executive Secretary shall:

a) Keep or cause to be kept accurate records of all procedural and business transactions of the Society;

b) Maintain accurate records of the financial transactions of the Society;

c) Communicate with the General membership on matters relating to the activities of the Society;

d) In cooperation with the Executive Committee, arrange the biennial meetings of the Society and the annual meetings of the Executive Committee;

e) Provide the Executive Committee with an audited statement of the accounts of the Society at its annual meeting;

Section 5. The Assistant Secretary shall assist the Executive Secretary in the performance of his duties especially in the following areas:

a) Recording the minutes of meetings;

b) Making arrangements for the election of officers, and

c) Communicating with the general membership on matters relating to the activities of the Society.

Article V. ELECTION OF OFFICERS

Section 1. The Vice-President and Assistant Secretary shall be elected at the biennial meeting from the general membership by secret ballot. The Office of the President shall be filled by elevation of the Vice-President except for that the first President will be elected.

Section 2. The Executive Secretary shall be appointed by majority vote of the Executive Committee. His term of office will be for a period of two (2) years with the right of renewal at the discretion of the Executive Committee.

Section 3. The President and Vice-President shall assume the duties of their office at the end of the biennial meetings of the Society.

Section 4. Should the post of President become vacant for any cause, the Vice-President shall assume the post of President and serve the remainder of the term. If less than half of the term of office has expired then a Vice-President will be elected by the Executive Committee from among its members to serve the unexpired term.

Article VI. COMMITTEES

Section 1. The Executive Committee shall consist of the officers as defined in Article IV together with two members appointed by the officers. In addition, the retiring President shall continue as an ex-officio member of the Executive Committee for two years. The selection of the two members to the Executive Committee shall be based on their interest in the Society and on their contributions to, interest in and involvement with plant protection in the Caribbean.

Section 2. The Executive Committee shall meet annually to discuss matters related to the proper functioning of the Society.

Section 3. The Executive Committee shall have the right to establish such other committees as may be necessary for the proper functioning of the Society.

Article VII. MEETINGS

There shall be biennial meetings of the general membership of the Society which should include consideration of matters and of work in plant protection and the business of the Society. The Executive Committee shall meet annually.

Article VIII. PUBLICATIONS

Section 1. The Society shall issue such official publications as are determined by the Executive Committee.

Article IX. AMENDMENTS

Section 1. Amendments to the Constitution may be proposed by any member of the Society.

Section 2. Proposed amendments shall be mailed to each member 30 days or more before the biennial meeting. Amendments shall be adopted when approved by two thirds of the financial members of the Society.

Article X. RATIFICATION OF THE CONSTITUTION

This Constitution will become effective upon its ratification by two thirds approval of the financial members of the Society.

Article XI. PROCEDURES

Procedures and other rules not specified in this Constitution or in the bylaws shall be in accordance with Roberts Rules of Order.

Article XII. DISSOLUTION

In the event that this Society is dissolved for any reason, all assets remaining after payment of debts shall be distributed to educational institutions in the region involved in Plant Protection research or teaching.

Bylaws of
The Society for Plant Protection in the Caribbean

1. Meetings of the Society shall be held at times and places designated by the Executive Committee.

2. The Executive Committee will meet anually at a time and place agreed on by a majority vote of the Executive Committee.

3. The Executive Committee shall have control through the Executive Secretary, of the receipt, disbursement and management of the funds of the Society. The Executive Committee shall ensure that the funds are kept in a local bank in a country where the Executive Secretary has access. The Executive Secretary shall conduct the financial affairs of the Society but expenditures of more than US$500. will require the prior approval of the Executive Committee.

4. The dues of each member shall be the equivalent of US$10. paid at the biennial meeting of the Society.

5. The dues of Sustaining members shall be US$100. annually to be paid at the biennial meeting or at any other time.

6. The Executive Committee shall have the right to vary the dues of members and sustaining members from time to time.

7. Amendments to these Bylaws may be made by a two thirds majority vote of the members in attendance at the biennial meeting.

ANNEX 3.

BULLETIN OF THE PLANT PROTECTION PROGRAM

This bulletin is to be the official publication of the Plant Health Program. The aim of the bulletin is to disseminate information about Program activities and about plant protection practices in general, with emphasis on aspects of priority interest for Latin America and the Caribbean, such as: the Mediterranean Fruit Fly; Black Sigatoka in bananas; the Cacao Moniliasis; cotton and sugar cane pests, and others.

In addition, data will be published about the chemical control of pest and diseases; the adoption of new agronomic practices for crops in order to provide adverse conditions for the pathogens; and further information on the integrated management of plant health problems.

The bulletin will be technical in nature, and will be aimed specifically at professionals working on research, training and the transfer of technology in the field of plant health.

The structure of the bulletin will be as follows:

1. Articles - short papers on current situations.

2. News

   a. Plant Protection Program activities

   b. Activities of those institutions cooperating with the Program

   c. Information on conferences, congresses, courses, etc.

3. Data on institutions

   a. Lines of work

   b. Research underway

4. Reference services

   a. List of bibliographic references, by categories.

   b. Summaries of important papers.

   c. Tables of contents of periodic publications in plant health, such as Fitopatología, Nematrópica, the New Phytopathologist, Plant Pathology. A study will be conducted deciding which

The bulletin will be published by the Plant Protection Program as part of the plant health information systems. However, to ensure its success, all Plant Health Services and Offices in the countries and institutional personnel working in this field must be convinced of the need for the bulletin and be willing to send periodic and timely information about plant health and protection news in the countries.

ORGANIZATION OF THE NORTH AMERICAN PLANT PROTECTION ORGANIZATION

The North American Plant Protection Organization (NAPPO) consists of the North American countries of Canada, Mexico and the United States of America.

The Organization has as its purpose the enhancement of inter-governmental cooperation in plant protection in North America as provided under the terms of the North American Plant Protection Agreement signed on October 12, 1976 by representatives of the plant protection agencies of Canada, Mexico and the United States of America.

Structure

The objectives of NAPPO are achieved through the activities of the Executive Committee, the Executive Secretary, the Principal Liaison Officers and Committees.

Executive Committee

The affairs and business of the Organization are managed by the Executive Committee which consists of the principal person representing the plant protection agency within each of the three North American nations.

The Executive Committee is responsible for the control and general management of the affairs and business of NAPPO and is empowered to adopt such rules and regulations for the conduct of their meetings and the management of the Organization as they deem proper, not inconsistent with NAPPO By-laws.

Executive Secretary

The Executive Secretary is appointed by the Executive Committee and serves for a period of three (3) years. The term of office may be extended annually for two additional years upon the mutual agreement of the Executive Committee and the incumbent Executive Secretary.

The Executive Secretary has the responsibility and authority to:

i) insure the continuity of the Organization between annual meetings,

ii) initiate and maintain liaison with external plant protection/quarantine agencies,

...

iii) work with the Chairperson in the development of the agenda for the annual meeting,

iv) be responsible for the publication and distribution of the annual report of the Organization,

v) in consultation with the Chairperson, arrange for a NAPPO representative to attend meetings of those organizations with which the Executive Committee has determined NAPPO should have such an official representative,

vi) receive and disperse funds in the name of the Organization, and

vii) other related activities.

Principal Laision Officer

Each Executive Committee member has designated a member of his staff as "Principal Liaison Officer".

The Principal Liaison Officers serve to facilitate effective communication between the Executive Secretary and the various committee members. They insure that all committee responsibilities within their region are met. They are responsible for obtaining input for the development of the annual program and submit suggestions to the Executive Secretary.

Committees

Activity within the Organization is carried out by committees that are either permanent or ad hoc in nature.

There are four permanent committees charged with either developing information and recommendations in their specific areas of providing for the formation of ad hoc committees to develop information and make recommendations in their respective areas.

The permanent committees are as follows:

Information Committee

The Information Committee is to develop appropriate information releases for the news media prior to, during, and following annual meetings; develop summaries of NAPPO activities for distribution to plant protection organizations, agriculture industry groups, or other organizations; recommend and/or review and approve information material for distribution and use by NAPPO.

...

Operational Committee

The Operational Committee is to exchange information between NAPPO countries regarding pest management and survey procedures; as well as operational procedures at ports of entry and in foreign areas to exclude pest introductions.

Regulations Committee

The Regulations Committee is to review existing regulations in NAPPO countries to determine if authority is available to provide adequate plant protection operations both as it relates to imports, exports, and programs within the three countries; and recommends modifications in legislative authority.

Technical Committee

The Technical Committee is to exchange information between the NAPPO countries on biological assessments of pest organisms, distribution of pests and other similar exchanges of a technical nature.

Each permanent committee is composed of a member from each of the NAPPO countries. This serves to insure that solutions proposed to NAPPO problems reflect the interests of each country.

Committees receive assignments, ultimately, from the Executive Committee. Problems identified by individual member countries are included for discussion on the agenda of the annual meeting of the Organization. Discussion is limited to the extent necessary to determine which committee should be charged with effecting resolution of the problem.

Committees either address issues directly or delegate the subject to ad hoc committees. Solutions proposed by the committees come into effect upon the approval of the NAPPO Executive Committee.

ANNEX 5.

PLANT PROTECTION FORECAST FOR MEXICO

Jorge Gutiérrez Samperio*

INTRODUCTION

Agricultural development in this country has been based on estimates of the country's future needs. So far, programs have been based on statistics and projections that have all too often been compiled by people who had no hand in generating the figures, but who were expected to undertake the task of implementing programs. This is because there was a need to have some basis on which to build. However, when the basis is not set up by those who must do the work, individuals or companies who must plan their future activities find themselves forced to coordinate and interpret vague symbols in order to predict future development.

This paper is based on an interpretation of these symbols for the next decade.

Table 1, shows a current total of 16 to 22,5 million hectares under cultivation, of which 12 to 17 million hectares are rainfed and only 4 to 5,5. million are irrigated. Based on the average (19,25 million hectares), 1979 figures show that 32.4% of the total land was planted to corn; 6.4% to beans; 3.3% to wheat; 7% to sorghum; 2.5% to safflower, and 1.9% to cotton. Table 2, gives a more general synopsis and indicates trends for 1990.

If Mexico's population reaches 97 millions by 1990, increase in the amount of land under cultivation and expected production rises (30%) will be enough to meet current per capita consumption demands, as in the case of corn.

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* General Director of Plant Protection. Secretariat of Agriculture and Water Resources, Mexico.

Professional agronomists in the field of plant protection have a very great responsibility. They must protect crops in order to guarantee that investments in infrastructure, research and production supplies bring about production level as close as possible to real potential, free from pests, at minimal cost, and without endangering ecosystems. This can all be achieved, and the outcome can still be better than current levels, which are already quite satisfactory. Control tactics will need to be integrated into a new plant protection strategy that can objectively reduce the risks that the State will be sharing with producers of basic foodstuffs (corn, beans, wheat, rice) and complementary products (sorghum, soya, safflower, and sesame).

PLANT PROTECTION IN 1977-80 AND ITS ECONOMIC IMPACT

Mexico's 1977 theoretical crop potential, in total absence of pests, was 162,5 thousand million pesos. Actual production was 130 thousand million, for a 20% loss to pests.

Nevertheless, developing countries similar to our own are losing fully 30% to pests. This means that our final yield could easily have been limited to only 113,75 thousand million pesos, and therefore the country was able to avoid a theoretical additional loss of 16,25 thousand million pesos.

Mexico has approximately one thousand plant protection professionals. Together they account for a professional budget of almost 2 thousand million pesos (including salaries and fees), but they provide the country with benefits eight to ten times greater than this cost. However, this benefit could be increased if we were to adopt more scientific and technical strategies with a greater social impact than our current systems.

This can be achieved through the adoption of national indicative plant protection policies to govern all the work being done in agricultural parasitology. Such a policy should legally be issued by the General Office of Plant Protection, which coordinates plant protection in the country and has the economic, financial and human resources needed to set up and run such a policy. The following analysis of the status quo will be based on this need

and on the fact that this Office is, and will continue to be, a leader in national plant protection work. The study will make it possible to project the plant protection strategies that will be needed during the coming decade and that could be perfected and implemented over at least the following twenty years.

Status and impact of official plant protection

In spite of SARH's unprecedented support of plant protection, which is clearly substantiated by the achievements and budgets during recent years (See Table 3, 1980), it is evident that outlays of Mex$67.53/ha., the maximum directly invested to date by the official sector, is inadequate. This is especially true in view of the fact that the losses averted in a single year (1977) were around Mex$1,000.00/ha. Empirical estimates show the need for official investments of Mex$250.00/ha. for integral plant protection measures (with higher technology), with a Resources/Employee ratio of around one (1 million pesos per employee) if optimally qualified personnel are available.

PLANT PROTECTION STRATEGIES FOR THE NEXT TEN YEARS

The Plant Protection Diagnosis.

The plant protection diagnosis is the sum of all the knowledge that can be compiled on a certain pest (taxonomy, biology, population dynamics, economic threshold, natural biotic and abiotic control, etc). Thus, in order to predict economic behavior and pest control tactics, we must first have a minimum of information on the pest before trying to make forecasts. This minimum is not necessarily the same for all pests. The fundamental element of plant protection strategies for future integrated pest control is the diagnosis. Therefore, it becomes necessary to seek and generate the information needed to diagnose those pests with the gratest social impact and, at a later stage, those that exercise the greatest economic impact. This formidable task will require a whole new mentality on the part of plant protection professionals, and it will demand curriculum reforms in parasitology schools at centers of higher agricultural education.

The Short-Term, Medium-Term and Long-Term Diagnosis.

In the long term, we must learn to predict the problems and solutions that have a higher probability of success on the national and regional levels. These predictions must be available several years in advance and be expressed in general terms and based on agricultural plans. They should be developed with the use of permanent records on meteorological conditions, the natural history of pests and control agents, the flow of financial resources, infrastructure and personnel, the production and importation of plant protection products, the need for such products, the training of plant protection professionals on all levels (including researchers) and, above all, the food and health needs of the Mexican people.

In the medium term, or within each crop cycle, all this information should be broken down by region and zone (regardless of political divisions), to provide more precise data on this level. All the various plant protection activities that should be practiced would thus be come clear, and the specific resources needed could be placed in storage. Research can be planned for generating or compiling the minimum information needed to operate long -and short-term models, as indicated by the pest situation during this period of time. All necessary statistics can be compiled for feeding the system. Finally, specific technical and scientific information can be generated, as required for the stochastic models used in forecasting on the short and long term.

In the short term, on the basis of available information on the identity, biology, ecology and population dynamics of the pest and its natural or released enemies, it will be possible to begin public education campaigns. Newspapers, radio and television, and special plant protection alerts can be used to tell farmers what resources they will need to fight pest "X", which is expected to appear during the next few days, and which, if not promptly controlled by the product or the method being prescribed, will have an immediate impact on their personal economic situation, as well as zonal, regional or national repercussions of a given magnitude. A system such as this leaves nothing to chance. Even in the case of drought, frosts, hail,

flooding, etc , it can be used to minimize economic damage.

PLANT PROTECTION GOALS FOR 1990

Regionalization and Zonification

The regions should be established on the basis of ecology. The real or potential presence of infrastructure in each region must be determined, as well as the just distribution of this infrastructure for generating poles of development.

The current regionalization scheme includes seven groups of States:

I. B.C. Norte	II. Nayarit	III. Chihuahua
B.C. Sur	Jalisco	Coahuila
Sonora	Guanajuato	Durango
Sinaloa	Aguascalientes	Zacatecas
	Colima	
	Michoacán	
IV. Nuevo León	V. Hidalgo	VI. Tlaxcala
Tamaulipas	México	Puebla
San Luis Potosí	Distrito Federal	Oaxaca
Querétaro	Morelos	Chiapas
	Guerrero	
	VII. Veracruz	
	Tabasco	
	Campeche	
	Yucatán	
	Quintana Roo	

Each group constitutes a region and already has facilities of the General Office of Plant Protection to serve its needs.

The plant health diagnosis, as defined above, can provide a basis for integrated control only to the extent that regionalization and zonification patterns are consistent, particularly from the ecological point of view. In this sense, the definition of a certain number of regions can facilitate the decentralization and distribution of activities and resources among the Regional Plant Protection Offices. Each of these Offices would have the resources it needs to operate with almost complete autonomy (some of the facilities could not be justified from the regional viewpoint).

The Regional Offices would zone their territory in order to quantify the problems objectively and make it possible to calculate the resources needed for solving them.

Regional Plant Protection Offices

The functions of these Offices would be comparable to those of the General Office of Plant Protection, but on the regional level. Several Program heads could thus be incorporated, and their objectives and goals would fall under the same technical, operational and administrative control, making it possible to achieve autonomy.

In accordance with their inherent agricultural importance, they would have all or some of the regional institutions shown in Figure 1.

Clearly, the presence of the Regional Centers and Systems as shown in Figure 1, would depend on regional agricultural development.

Plant Protection Program Heads

These would be the maximum plant protection authorities in each State, and they would be in charge of the various types of campaigns that take place under their jurisdiction, such as LADIF, CRIB, CREME, etc. The territorial jurisdictions are indicated by the continuous line at the botton of Figure 1. Nevertheless, any facilities in their territory large enough to be of regional importance would be jointly coordinated by this Program Head and the Head of the respective Regional Center or System. When disagreements arise between the Program Head and the Center or System Head, they can be submitted to the consideration of the Regional Director, who will make the final decision.

Regional Centers for Diagnosis, Information and Forecasting Models (CREDIF)

On the basis of regional information, and with the support of the National Center for Plant Protection Information and Diagnostic Model Development, these centers will act as regional information banks. They can set standards for regional plant protection technology research and can implement policies for containment, control, quarantine, and eradication.

Finally, they can generate plant protection forecasts, including needs for financing, equipment, materials, supplies, training and personnel. In short, they will be the regional nerve center for plant protection integration (as indicated by the dotted line at the botton of Figure 1), and through the Regional Director they will feed the National Center.

Regional Pesticide Centers

These centers will be in charge of coordinating the work of the "Laboratories for the control of pesticides and pesticide residues" in the region, and they will conduct regional control of agricultural pesticide use. They will also oversee the activities of individuals and companies who work with these agro-chemical products. In the long term, they will control area records and will plan, propose and control the manufacture of pesticides under official supervision.

Regional Centers for the Production of Biological Control Agents

On the regional level, these centers will carry out the objectives and functions of the Biological Control Department, with an emphasis on operating the CRIB's and CREME's of the federal entities included under regional jurisdiction. They will give special priority to the large-scale production of parasitoids, predators and pathogens that will have the greatest economic impact on the region, without overlooking the study of potentially useful biotic control agents, whether of regional, national or fereign origin.

Regional and International Quarantine Control Systems

Each region, depending on its needs, will have an integrated system for quarantine control (to include facilities for quarantine treatment), that will enforce the laws, decrees, regulations and interior or exterior quarantine measures required of it for health and geographic reasons. These systems will be based on existing physical facilities installations currently under construction, and any others that may be deemed necessary. Particular emphasis will be placed on facilities for the introduction of plants,

plant parts and plant products. They will be located in strategic zones that pose little danger of introducing new pests, even through research materials. The national and international movement of seeds and carriers will be carefully controlled through regional certification of such products.

This completes our brief look at the structure, objectives and functions of the Regional Plant Protection Offices and their components, as well as the institutions that will employ the majority of the highly specialized personnel.

It is of interest to analyze how these regional actions will work together on the national level.

Central Mechanism of the General Office of Plant Protection in 1990

During the next few years, the General Office of Plant Protection will undergo only minimal growth. The fundamental structure needed is already available, organized into a General Directorate, a Deputy General Directorate, Area Offices, the Technical Department, the Operational Department, the Development Department, and an Administrative Area (See Figure 2).

It will undergo no technical changes, except for the creation of a National Center for Plant Protection Information and Diagnostic Model Development, and several other technical and/or administrative-operation centers, as discussed below.

National Center for Plant Protection Information and Diagnostic Model Development

The structure, organization, objectives and functions of this Center will be defined by the Planning Department for Plant Protection. The Center will carry out the functions described above for the comparable Regional Centers, although with a national perspective.

Located in the Federal District, this Center will be headed by personnel with extensive plant protection experience, specialized in planning,

statistics and ecology. It will have sophisticated electronic equipment and will eventually assume the functions of the Planning Department. It will have personnel specialized in information, sampling, and the population dynamics, phenology and integrated control of pests. The information retrieved or generated by this personnel, together with data generated in the Regional Centers and Central Departments, will be used for compiling stochastic variables that can be used to test forecasting models for pests and pest control, to adopt plant protection policies, and to plan the use of many kinds of resources.

National Training Center for Plant Pathology

Located on the Northeastern shore of Tuxpan Lake in Guerrero, this center will provide all the plant protection services needed by the agricultural sector in the region and will provide training for producers, field personnel, para-professionals and professionals, in all the activities inherent in Plant Protection, including program management.

It will have a service area and a training area, both of which will be operated by highly specialized personnel with training in education. Emphasis will be placed on the need to reorient studies in biology, ecology, behavior, population dynamics, and natural mortality of biotic origin, on the basis of weather and climatic variables.

All these assistance services will allow the students to dedicate themselves fully to their studies. There will be a full-time staff of highly specialized technical professors, with teaching experience, as well as prestigious guest lecturers. This will make it possible eventually for the center to become our "Practical University for Plant Pathology".

Coordinating Office for National and International Plant Protection Agreements.

The General Office of Plant Protection and other institutions are signing a growing number of agreements with national and foreign organizations in the area of plant protection, and these agreements are becoming more important. To date, all have been fulfilled, and they have taken the form

of bilateral contracts between Mexico and other countries and between Mexico and organizations. However, they are growing broader in scope and requiring higher levels of interaction, and the day will come when we need an integral control system in order to avoid duplications, omissions, etc. Above all, such a mechanism is needed to fit the agreements into the context of the new plant protection policies of integral control.

CONCLUSIONS

Mexico is a long-term country, but the need for action plans and programs is becoming ever more urgent. These plans must offer viable solutions that are technically and socially just and have definite time periods and concrete goals. If such plans are to be developed, accurate statistics are a must.

The indicative and operational plant protection activities of the General Office of Plant Protection are bringing about a 10% savings in national production, as we lose 20% of our harvests, compared to an average of 30% for developing countries (and in some cases, up to 49%).

Plan protection strategies for integrated pest control are based on our ability to predict biotic disasters (agricultural pests) before they appear (in the short-, medium-, and long-term), and on our ability to plan our needs for various types of resources.

All this will be a function of our ability to make changes in current and future plant protection professionals, in terms of their methods of conducting basic research. Their studies must be based on phenological criteria and on a more solid academic education for parasitologists.

TABLE 1. Arable Land and Land Under Cultivation in Mexico, 1980-1990

Area in Millions of hectares	Current[1] (1980)	Needed by 1990, given a 3.0 percent population growth rate Annually[2]	Needed by 1990 if the population growth rate is reduced to 2	Projected for 1990 on the basis of current agriculture, without considering population growth	Projected for 1990, according to IAPAC estimates, without considering population growth
Irrigated	4-5.5	10-11.5	8 - 9.5	6-7	7 - 8.5
Rainfed	12-17	15-20	13.5-18.5	14-19	15 - 18.5
TOTAL	16-22.5 $\bar{X}$= 19.25	25-31.5 $\bar{X}$= 28.25	21.5-28 $\bar{X}$= 24.25	20-26 $\bar{X}$= 23	22 - 27 X= 24.5

1. The basis for this range was obtained from statistics.

2. It is estimated that 6 million hectares will have to be irrigated, and 3 million hectares of rainfed land will have to be recovered, especially underused ranchlands. Reserves would still be available for 15 million hectares of rainfed land.

TABLE 2. Harvested and Harvestable Land for Certain Crops in 1980-1990

CROP	% of total land in 1977	% of total land in 1978	% of total land in 1979	% average of last three years	Harvestable land in 1990 (Millions of hectares)	Average yield/ hectare in 1990 (30% increase)	Total production in 1990 (millions of Tons)
Corn	38.8	37.9	32.4	36.4	8.9	1.775	15.79
Beans	8.5	8.2	6.4	7.7	1.9	608	1.16
Wheat	3.7	4.0	3.3	3.6	0.9	4.503	4.1
Sorghum	7.3	8.1	7.0	7.5	1.8	3.931	7.1
Safflower	2.1	2.2	2.5	2.3	0.6	1.664	1.0
Cotton	2.2	1.8	1.9	2.0	0.5	1.290	0.7
Other Crops	30.4	29.8	37.5	32.5	7.9	-	-
Orchards and Agave Plantations	7.0	8.0	9.0	8.0	2.0	-	-
TOTAL	100.0	100.0	100.0	100.0	24.5	-	-

1. Used to estimate 1990 harvestable land, based on the average of the last column in Table 1, 24.5 million hectares.

TABLE 3. Financial and Human Resources for the General Office of Plant Protection, SARH. Mexico

YEAR	BUDGET (Millions)[1]	No. of Employees[2]	Resources/ Employee Ratio(3) (1)÷ (2)	Land under cultivation (millions of hectares)[4]	Relative Investment per Hectare (1) ÷ (4)
1977	489	3,000	0.16 mills.	16.25	30.11
1978	625	3,300	0.19 mills.	17.50	29.94
1979	1,064	4,100	0.26 mills.	18.25	58.30
1980	1,300	5,000	0.26 mills.	19.25	67.53
1990	6,000	8,000	0.75 mills	24.50	244.89

If this goal is reached in 1990, by around the year 2.000, our losses to pests will be reduced to 10%, and absolute recovery per hectare will be much more than it is today.

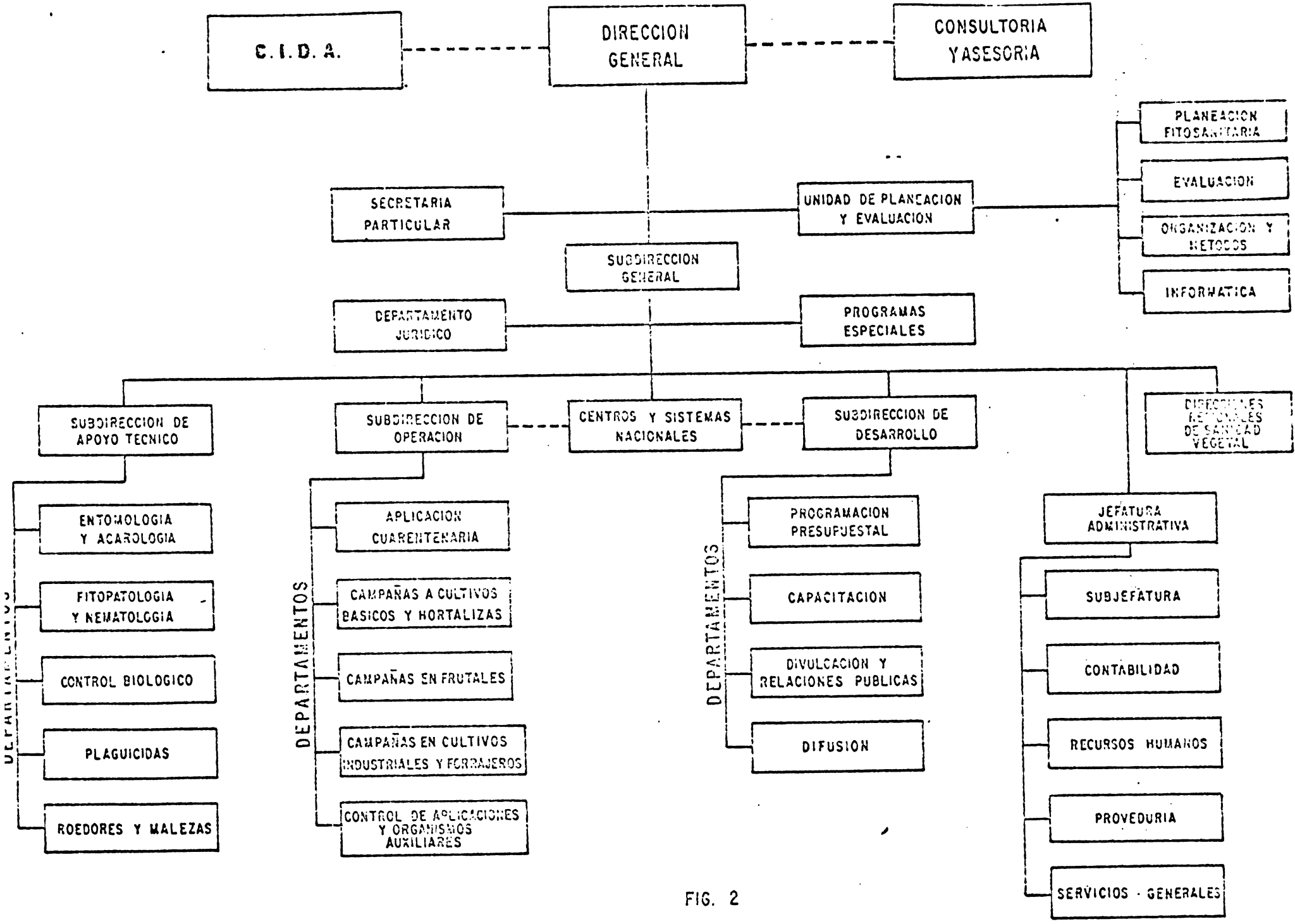
C.I.D.A.
DIRECCION GENERAL
CONSULTORIA Y ASESORIA
SECRETARIA PARTICULAR
UNIDAD DE PLANEACION Y EVALUACION
PLANEACION FITOSANITARIA
EVALUACION
ORGANIZACION Y METODOS
INFORMATICA
SUBDIRECCION GENERAL
DEPARTAMENTO JURIDICO
PROGRAMAS ESPECIALES
SUBDIRECCION DE APOYO TECNICO
SUBDIRECCION DE OPERACION
CENTROS Y SISTEMAS NACIONALES
SUBDIRECCION DE DESARROLLO
DIRECCIONES REGIONALES DE SANIDAD VEGETAL
DEPARTAMENTOS
ENTOMOLOGIA Y ACAROLOGIA
FITOPATOLOGIA Y NEMATOLOGIA
CONTROL BIOLOGICO
PLAGUICIDAS
ROEDORES Y MALEZAS
APLICACION CUARENTENARIA
CAMPAÑAS A CULTIVOS BASICOS Y HORTALIZAS
CAMPAÑAS EN FRUTALES
CAMPAÑAS EN CULTIVOS INDUSTRIALES Y FORRAJEROS
CONTROL DE APLICACIONES Y ORGANISMOS AUXILIARES
PROGRAMACION PRESUPUESTAL
CAPACITACION
DIVULGACION Y RELACIONES PUBLICAS
DIFUSION
JEFATURA ADMINISTRATIVA
SUBJEFATURA
CONTABILIDAD
RECURSOS HUMANOS
PROVEDURIA
SERVICIOS GENERALES

FIG. 2

ANNEX 6.

PROSPECTS FOR PLANT PROTECTION IN THE EIGHTIES

Héctor Ceruso*

World agriculture and, consequently, plant protection for the various crops, must fit into the context of the major conditions of this new decade of the eighties. Agriculture has always been, is today, and will continue to be a fundamental activity of human society for the production of foodstuffs and raw materials of natural origin, and hence it must seriously confront the factors conditioning it at this crossroads of civilization.

Current trends suggest that, by the end of the century, the world population will have reached 6,500 million, by comparison with the approximately 4,000 million inhabiting the world today. At the same time, large sectors of the world population have gradually been rising to better standards of living, thus boosting the consumption of food and various raw materials. Certainly, this population shift is neither all-encompassing nor inevitable, and by the end of the decade, a large portion of the human race will still be undernourished and struggling to find a better life. This forces us to think about the urgent need to increase and improve storage mechanisms. This expectation of better production goes hand in hand with a steadily growing awareness of the dangers of environmental pollution and the breakdown of the biological balance caused by human activities and propelled by modern urbanism and scientific and technical industrialization. This new awareness is making ever greater inroads. The more we push for environmental protection and the conservation of natural resources and human life itself, the more we will be questioning the massive and indiscriminate use of agricultural pesticides because of their effects on the quality of food and on the safety of humans and animals. This is why the question of pesticide residues and the breakdown of the biological balance will continue to be open to discussion.

This dilemma can be synthesized as follows:

The human race is faced with the inescapable need to augment agricultural production on the basis of the ever-growing technological reservoirs available to our civilization for moving our enormous volumes of natural resources, which today are being only partially exploited. For this rural production growth to occur, the necessary precautions must be taken for protecting natural resources, including soil, water, air, forests, and useful flora and fauna, all in the interest of safeguarding human and animal health. Certainly, it is no easy task to transform agricultural endeavors in order to achieve these higher goals. This is where we, the plant protection specialists, are called upon to play an important role.

This new decade shows great promise for the progress of methods and systems for fighting the various pests that are decimating our crops. We

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are gradually giving the lie to the old idea that "Humankind collects only what the pests leave behind." Among the various factors that hinder the growth of the production of foodstuffs and agriculturally-based raw materials, a particularly important role is played by the destructive effects of the pests, whether they be insects, fungus, weeds, vertebrates, etc. Naturally, it is difficult to give an exact evaluation of the losses caused by parasitic agents, but it is no exaggeration to assign them an overall value ranging from 30% to 40% of potential production, a figure which also reflects the loss of product quality. It should be emphasized that these figures must also cover losses suffered in the countries which are at the forefront in terms of their access to advanced technology and means of pest control. The magnitude of these loss figures speaks for itself, if only to drive home the impact of the damages.

In other words, in a world with ever-growing needs for food and organic raw materials, agriculture is losing no less than one third of its potential harvest due to the effects of these agents.

In addition to a favorable economic climate, agricultural expansion requires the development and application of scientific and technical breakthroughs as they emerge. Naturally, it would be of interest for us to pause a moment on this subject and take a more specific look as this aspect of plant protection. We have already noted the gravity of the breakdown in agricultural production caused by the various pests that attack crops, before and after harvest. Significant progress has definitely been made in this area. It is enough to recall the severe losses caused by potato blight, and the resulting famine that ravaged Europe in past centuries; or, to cite a case closer to home, let us not forget the total devestation suffered for decades in the richest farming regions of Argentina as a result of locust migrations, which have now been overcome. However, it is just as true that insects, weeds, fungi, bacteria, etc., are continuing to cause enormous highly visible losses, the actual magnitude of which is often understood only after the appearance of new, more successful methods of control.

We will not pretend at this time to enumerate the entire list of agricultural productivity losses. Any one in this room could to that. My point is simply that no matter how arduous, complex and difficult the problems of crop pest control may be, they can always be tackled and eventually overcome if agricultural science is determined to eliminate them. In the silence of the laboratory, in the stillness of experimental fields, in the intellectual wealth of library collections, in the sleepless nights of our scientists, and in the ingenuity and tenacity of devoted professionals, the answers lie hidden.

Agriculture in the world, and especially on our American continent, must undergo immediate and large-scale growth.

This imperative can be met only if conditions are favorable for international trade, producing countries can function within an appropriate economic framework, and the possibility exists for intensifying scientific

and technical activities and disseminating the findings so as to boost the productivity of agricultural endeavor.

If technological modernization is to take place throughout the agricultural sector, the economic parameters must be favorable. At the same time, lasting improvements in agricultural production will take place only when producers learn to make permanent use of scientific and technological advances.

The science of agronomy comes into play on only one side of this equation, insofar as it involves agricultural science and technology.

However, the agricultural sciences can make their real contributions only if the equation is satisfactorily completed , i.e., only if the world moves quickly to produce more foodstuffs and raw materials to meet the challenge of improving the standard of living for a growing population; only if the world decides to protect its renewable and nonrenewable natural resources and overcome the dangers and threats of the energy crisis and environmental pollution.

And of course, a major chapter in the discipline of agricultural sciences must be Plant Protection, which will make significant improvements in the safety and productivity of harvests.

This decade is a very short period of time for reaching such ambitious goals, which bring strong philosophical and far-reaching considerations to bear on the destiny of the human race.

But this destiny, the destiny of each and every one of our fellow beings, is also being played out in the short term, over the next ten years. Although it may not be realistic to expect full or broad solutions to be achieved during this period, the least we can optimistically hope for is to begin to glimpse solutions.

During the last thirty years, agricultural diversification and the ever-growing effort to increase crop yields have led to the wide use of pesticides as an effective means of fighting biological enemies that continually reduce harvests and damage product quality. At the same time, with the growing use of pesticides produced by chemical synthesis, secondary problems of varying degrees of severity began to appear. They include the excessive presence of toxic residues, the destruction and disappearance of beneficial natural enemies, the appearance and/or reinforcement of new threats that were previously unknown or that caused insignificant damage, and congenital or acquired resistance to a given pesticide or group of products. In spite of these problems, pesticide consumption has continued to grow, along with the amount of land treated with these agents in the major food-producing countries. To take the USA as an a example, from 1971 to 1976 the following increases were felt in the amount of crop land treated with pesticides: insecticides, 32%; herbicides, 25%; fungicides, 24%; other pesticides, 16%. In other words, in spite of all their drawbacks, pesticides continue to be the undisputed major weapon currently available in the fight against pests, and this situation will not be significantly changed in the next few years.

The problems exist, and they present a challenge to the industry that must confront them and to the scientists who must solve them. The answers that have been obtained, like the trends that are unfolding, point to a number of facts that will be of undoubted importance in the near future.

The discovery and development of new pesticides involves a process that is growing ever more complex. Fifteen years ago it took 2,000 synthetic substances a period of four to five years, and a total of some two million dollars to obtain a marketable compound; five years later, by 1972, the process took an average of six to seven years, tests on four to five thousand synthetic substances, and a budget of four million dollars; today it takes ten years, ten thousand different substances and some twenty million dollars.

All this demonstrates that it is becoming more difficult and costly to develop new pesticides. Such work is being done by only forty companies the world over, and this number may be reduced in coming years, as will the rate of appearance of new pesticides, in the face of constant cost increases.

The demand for new pesticides is growing steadily. Studies and toxological tests are aimed at selecting a product that can guarantee safety, first for the user, then for the consumers of the treated foods. In other words, products must be discovered with low levels of toxicity for the human being and that have more specific effects so as to minimize undesirable effects such as damage to the biological balance through the destruction of useful species.

Until a few years ago, organochloric insecticides were used on a large scale. They had prolonged residual effects and were highly effective in eliminating diverse pests from many of crops, but today they are tightly restricted and, in certain cases, totally prohibited. This trend will surely become more widespread in coming years, due to the risks of persistent pollutants in foods and in the environment, and to the few but insuperable obstacles they create in the international trade of agricultural products. Another very promising approach for partially or totally overcoming the undesirable effects described above, is to develop new microbial insecticides that use bacteria, fungus, protozoa, etc. There is a great deal of interest in developing such products, primarily because: a) they are felt to be highly selective, for they do not affect the environment and therefore are useful in integrated control systems; b) they can provide an efficient tool for controlling pests that are resistant to common pesticides.

Current work in fungicides is hampered by a number of factors, such as the case of pathogen access, the rapid expansion of epiphytes, the appearance or discovery of more new groups of microbes and ultra-microbes, the continuous alteration of the biological equilibrium, the development of resistance to given agro-chemicals, mutations in the virulent agent and in resistance, etc.

Increasing the dosage has no effect on improving disease control. Instead, it merely underscores the phenomena of phytotoxicity and human and animal toxicity. The value of a fungicide depends on how long the residual

effects persist between two treatments on the plant surface being tested. This problem is very if difficult to overcome, and it will force future research to look into systemics and methods of application.

It is easy to foresee the discovery or creation of new systemic products with high levels of penetration or absorption and rapid translocation by the plant. More and more, these new products will be replacing the traditional technique of exterior protection or coverage.

Another serious problem is how the systemics are applied. We need a method that is faster, more economical and more long-lasting for the plant. Signs seem to indicate that the treatment of seeds, bulbs, etc., would be one of the most appropriate means of obtaining successful results.

Therefore, chemotherapy in the true meaning of the word, will be a major step in this decade. It is an attempt to bring about metabolic changes in the plant that will increase its defense mechanisms, but today it is still a very young science. Clearly, research will be taking place on a growing scale throughout the world, to test ever new products. Every day more attention is being given to the host-pathogen relationship, instead of unleashing a frontal battle against the etiological agent, while ignoring the field affected by the out-break, which is today recognized as an important part of the system.

Another topic that will be scrutinized by future research efforts is the time that should be allowed between the application of the product and the appearance of the infection, in order to make way for translocation, metabolic action and the formation of pseudo-fungicides (products formed by the metabolization process). Sometimes these factors appear to be more important than the fungicides themselves.

Growth regulating substances bear a direct relationship to systemics, and this could be the impulse for important future research in vegetable therapy. It is also of fundamental value to think about the use that will be made of bio-stimulators for development, based particularly on amino acids (glycine, alanine, serine, etc.), enzymes, hormones, algae, etc.

The new pathogen groups that have been discovered, such as viroides, mollicutes, and reckettsias, make it more difficult to predict the immediate future. As fungi and bacteria begin to come under control, nature will experience an inevitable biological imbalance, unless the process is approached and steered by means of a total, methodical and rational campaign, to avert serious problems in the future.

The discovery and use of antibiotics has been furthered on a large scale during this century. Without a doubt, it has been responsible for the appearance of major new diseases, mostly caused by viruses, but which today have como to be seen as etiological agents belonging to this new pathogenic group.

This comes as a warning for the future, and there is no doubt that new control products will be sought.

In this sense, Nature has been teaching us, and we must not turn our backs on her lessons. Perhaps the vegetable organisms themselves hide the key to the defense process. For example, why couldn't we save an affected plant by increasing the quality and amount of the phenol compounds, hemicellulose, gums, enzymes, etc., produced by the plant intself for its own defense?

There is no disputing the high incidence of weeds in agricultural production, and therefore we must believe that in coming years, the use of herbicides will be maintained and increased. This has been the uninterrupted trend since 1947, when large-scale use of 2,4-D was begun. In the field of vegetable therapy, research is being done with an eye to future development of substances generically known as antimicrobial herbicide protectors, intended to reduce the post-application degradation of herbicides by the action of certain bacteria, the effect of which is to prolong the period of activity, with the ensuing practical benefits.

Herbicides incorporated into the soil as organic compounds are affected by microbial activity (bacteria, fungus, actinomycetes) which destroys or modifies their molecular structure and renders them inactive. Other developments are expected in the field of weed control, such as the use of certain antidotes to block or destroy the phytotoxic effects of herbicides for given crops. Another modern technique is called herbigation by which herbicides and irrigation water are applied through one single operation. This is a very promising field, and positive results are expected from the dissemination of this method, particularly for herbicides that work through the soil to attackweeds in their preemergent stage.

On another front, the biological campaign is of great interest for controlling certain agricultural pests. The use of these techniques must be stepped up in coming years. One sign of the importance some countries ascribe to this method is that the United States Department of Agriculture for some years has maintained a biological weed control laboratory in Argentina. It is devoted to the study and acquisition of natural enemies that can be used to control Alternanthera philoxeroides, commonly known as "lagunilla", which poses serious problems for that country. This reflects the type of criteria being employed in the investment of funds for solving plant protection problems, in contrast with the low priority so many of our governments give to this area. This is particularly true if the analysis is done in terms of fund allocations for providing essential services.

Equipment and methods for applying the products are an important ingredient of pesticide technology. It would do little good to have an excellent pesticide if it were poorly applied.

The evaluation of equipment and methods for application has favored the wide-scale dissemination and use of many pesticides. We should particularly note the tendency to reduce the volume being applied, both by land and by air. Low-and ultra-low volume applications are becoming more and more common and introduce major savings in treatment costs.

This reduction in the volume of the application should go hand in hand with efforts to refine the equipment and methods of distribution which have a major impact on the effectiveness of the treatments. These would include correct dosage, uniform application, and the size and number of drops per unit of land surface area in order to obtain proper coverage, all for the pests and crops that are to be treated. The potential problems should also be recalled, such as wind "drift" or thermic currents and their effect on low-volume treatments with very small drops. At the very least, this "drift" causes an unnecessary loss of the pesticide outside the target area, and it frequently introduces undesirable pollution in other zones, damages sensitive crops when the herbicides are applied, etc.

No doubt, studies and research will take a close look at these issues in coming years, and important progress can be expected in this field.

During the eighties, the use of chemical pesticides should be fitting more and more into what could be called the new strategy of "pest management," described as "Integrated Control." This new concept in agricultural pest control in no way means the total, all-encompassing elimitation of pesticides, or relegating them to a strictly secondary role as a control tool. Rather, they will continue to be exceedingly valuable elements in spite of the appearance and improvement of new control systems. At bottom, the focus of concern is that pesticides complement one other in a harmonious game in which the other players include biological control, crop control, the use of tolerant or resistant strains, the use of other chemical substances to alter metabolism, interference with reproductive cycles, mobilization systems, etc. Integrated pest control seeks to improve the entire spectrum of control and produce ecological and economic advantages on the individual level and for the entire county or region, to ensure good production. The level of pest damage must be kept below the "economic loss threshold" and, at the same time, dangers to humans, animals and the environment must be minimized. Alternative control systems currently offer great promise, and during this decade, more control programs will be implemented on this basis. There will be a need for basic research on the biology of both damaging and beneficial agents, for more knowledge about general ecology, for training of specialized personnel, and for means of communicating with the producers in order to help make them aware of the advantages the system offers over their current methods. In order to implement an integrated pest control program, the agricultural ecosystem must be analyzed by specialists who will determine which pests really need attention and establish the levels of economic loss they are causing. In this promising field of integrated pest control, much can be expected from international organizations such as the Inter-American Institute of Agricultural Sciences (IICA), which can implement assistance programs to train personnel for these campaigns and provide advisory services in methodological studies for evaluating pest losses. If the new integrated control strategy is to succeed, regional plans must be formulated for channeling actions against given pests. In this sense, both the private sector and the public sector are needed. The private sector can develop the

needed supplies and perfect the methods of applying them, and the public sector can conduct basic research and propose and enforce needed legislation, as well as offer advisory services to see that the objectives are met.

In the eighties, dissemination programs will be reaching the farmer level to institute the use of methods and products that today are litle more than hopes for the future or that exist only on technical planning sheets, with application problems still unsolved. Some of the fields which are still open to intensive efforts in this decade include pheromones, microbiological pesticides, attractants and repellants, insect sterilization by physical or chemical means, phytoalexines for the control of fungal diseases, alelopathy for weed control, and the use of herbicide antidotes and antimicrobial protectors. Extensive study is still needed in these areas if large scale use is to become practical. The list will undoubtedly be swelling with the addition of new discoveries, for scientific research does not stand still, and its potential is immense and difficult to predict.

Faced with these tremendous opportunities in the area of plant protection for the new decade, I cannot help but wonder: Wouldn't this be the time to accept IICA's excellent capability for steering and combining the efforts of our contries to channel and make better use of the new knowledge that will be available in the immediate future? I think it would be interesting to consider the possibility of funnelling resources into a working plan to give us more in-depth knowledge of the new technological advances that will be emerging in this decade, with an eye to making better use of them in our contries. Thus, we could gradually win these small battles to improve our future. As I complete my message, I would like to leave you with this thought.

IICA

IMPRENTA IICA