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ANNUAL REPORT

October 1, 1988 - September 30, 1989

for the

INTEGRATED PEST MANAGEMENT

AND

ENVIRONMENTAL PROTECTION PROJECT

Project No. 936-4142

A.I.D. Contract No. DAN-4142-C-00-5122-00

Submitted to the

**U.S. Agency for International Development
Bureau of Science and Technology Office of Agriculture**

by the

Consortium for International Crop Protection

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Consortium for International Crop Protection (CICP)
4321 Hartwick Rd, Suite 404, College Park, MD 20740 / USA
Telephone: (301) 403-4223
Cable address: CONSORTICP
Easylink: 62929197
Fax: (301) 403-4226

Executive Director: Allen L. Steinhauer
Deputy Director: Michael E. Irwin
Chairman, CICP Board of Directors: Richard E. Ford

Consortium Member Institutions:

University of California
Cornell University
University of Florida
University of Hawaii at Manoa
University of Illinois
University of Maryland
University of Miami School of Medicine
University of Minnesota
North Carolina State University
Oregon State University
University of Puerto Rico
Purdue University
Texas A & M University
U.S. Department of Agriculture

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FOREWORD

This report briefly summarizes activities performed under the Integrated Pest Management and Environmental Protection Project for the period October 1, 1988 to September 30, 1989. Funded centrally by A.I.D.'s Bureau of Science and Technology, Office of Agriculture, and augmented through funding from A.I.D. Missions and Offices, the Project provides crop protection assistance, training, research, and networking. Full reports and publications produced by the project are maintained in the office of the Consortium for International Crop Protection. Please write the Consortium for a list of the available reports and publications.

A. L. Steinhauer
Project Director

ACRONYMS

- A.I.D. - United States Agency for International Development
A.I.D./LAC - A.I.D.'s Bureau for Latin America and the
Caribbean
- A.I.D./OFDA - A.I.D.'s Office of Foreign Disaster Assistance
- A.I.D./S&T/AGR - A.I.D. Bureau of Science and Technology,
Office of Agriculture
- A.I.D./W - A.I.D./Washington
- APWSS - Asia-Pacific Weed Science Society
- C.A.B. - Commonwealth Agricultural Bureaux
- CATIE - Centro Agronomico Tropical de Investigacion y Ensenanza
- CENTA - Centro Nacional de Tecnologia Agropecuaria/National
Agricultural Technology Center
- CIAT - Centro Internacional de Agricultura Tropical
- CICP - Consortium for International Crop Protection
- CID - Consortium for International Development
- CNRCP - Crop Nematode Research and Control Project
- EA - Environmental Assessment
- EPA - United States Environmental Protection Agency
- FAO - Food and Agriculture Organization of the United Nations
- FTE - Full time equivalent (used in reference to personnel
effort)
- GTZ - Gesellschaft für Technische Zusammenarbeit/German Agency
for Technical Cooperation
- IARC - International Agricultural Research Center
- IBSNAT - International Benchmark Sites Network for
Agrotechnology Transfer
- ICTA - Instituto de Ciencias y Tecnologia Agricola/Science and
Agricultural Technology Institute
- IEE - initial environmental examination
- IICA - Instituto Interamericano de Cooperacion para la
Agricultura

IMP - International Meloidogyne Project
INNN - International Nematology Network Newsletter
IPM - integrated pest management
IPPC - International Plant Protection Center
IRRI - International Rice Research Institute
IWSS - International Weed Science Society
LA - Latin America(n)
LDC - less developed country
LISA - low input sustainable agriculture
NARP - National Agricultural Research Project
NC-180 - North Central Regional Project No. 180
NCSU - North Carolina State University
NGO - Nongovernmental Organization
NRC - National Research Council of the National Academy of
Sciences
OSU - Oregon State University
PID - Project Identification Document
PPM - Pest and Pesticide Management
PVO - Private Volunteer Organization
REDSO-EA - A.I.D.'s Regional Office for Economic Development
Services Organization/East-South Africa
RENARM - Regional Environmental and Natural Resources
Management Project, U.S.A.I.D./ROCAP
ROCAP - A.I.D.'s Regional Office for Central American Programs
TAC - Technical Advisory Committee
TAMS - Tippetts-Abbott-McCarthy-Stratten
UMCP - University of Maryland at College Park
UMI - University of Miami
UN ESCAP - United Nations Economic and Social Commission for Asia
and the Pacific
U.S.A.I.D. - United States Agency for International Development
(missions)
USDA - United States Department of Agriculture

I. PROJECT BACKGROUND AND ORGANIZATION

A. BACKGROUND

The United States Agency for International Development (A.I.D.) has sponsored several projects on pest management in cooperating developing countries since the mid-sixties. The Agency's most comprehensive effort in pest management is contracted with the Consortium for International Crop Protection (CICP). Financed through A.I.D.'s Bureau of Science and Technology, Office of Agriculture (A.I.D./S&T/AGR) since 1985, A.I.D.'s Integrated Pest Management and Environmental Protection Project (Project No. 936-4142, A.I.D. Contract No. DAN-4142-C-00-5122-00), (PPM Project), is a 5-year multidisciplinary program in crop pest and pesticide management.

The PPM Project compressed elements of two earlier A.I.D. projects into one activity: Weed Control Systems Utilization for Representative Farms in Developing Countries Project (contract A.I.D./ta-C-1303) conducted 1966-1985 by the International Plant Protection Center (IPPC) at Oregon State University; and the Pest Management and Related Environmental Protection Project conducted 1971-1980 by the University of California (Berkeley) under A.I.D. contract csd-3296 and ta-C-1195, and 1979-1985 by the Consortium for International Crop Protection (A.I.D. contract DSAN-C-0252). Also, a three-year extension of the Crop Nematode Research and Control Project (modified) was integrated with the PPM Project in December 1987, by North Carolina State University. The North Carolina State effort on nematodes had previously been funded by two sequential A.I.D. projects: the International Meloidogyne Project (IMP) 1975-1984 and the Crop Nematode Research and Control Project (CNRCP) 1984-1987.

Specific PPM Project objectives, as stated in the project proposal (July 1985) are: "to expand the capabilities of less developed countries in the areas of pest and pesticide management." The PPM Project was designed to assist developing country farmers to consider and use more agronomically, environmentally, and economically sound crop protection. The Project reflects also the intent to help developing countries closely monitor the need for, use, and handling of pesticides.

PPM Project activities aimed at fostering, expanding, and strengthening regional and national pest and pesticide management programs in developing countries fall within four major categories:

* training: facilitate various pest and pesticide management training courses and activities.

* technical assistance: assist A.I.D. missions, A.I.D. offices and A.I.D./S&T/AGR with preparation of Project Identification Documents (PID), Project Papers, Initial Environmental Examinations (IEE), and Environmental Assessments (EA); assist with implementing crop protection programs in LDCs; provide technical consultancies as needed; and, act as a source of information for specific pest and pesticide problems.

* research: provide and facilitate a range of pest and pesticide management research assistance.

* communication/networking: provide information services and facilitate publication and dissemination of technical pest and pesticide management information.

A technical specialist has been assigned responsibility for coordinating each function within the project.

B. DESCRIPTION OF ACTIVITIES

The PPM Project utilizes the four components of technical assistance, training, communication/networking, and research to conduct appropriate programs in integrated pest management and environmental protection. Activities primarily focus on the disciplines of weed management (terrestrial), entomology, plant pathology, and pesticide management.

The PPM Project provides a source of pest and pesticide management expertise for A.I.D. Assistance is provided through:

- * designing and implementing cost-effective, environmentally sound pest and pesticide management research;
- * identifying pests; assessing pest-caused crop losses;
- * training in a wide range of pest and pesticide management topics;
- * assuring safe use and disposal of any crop pesticides used; and,
- * conducting pesticide use environmental assessments.

C. ORGANIZATION

By being contracted through CICP, the PPM Project has access to faculties at the 13 CICP-member universities, plus the U.S. Department of Agriculture. The resulting pool includes experts with combinations of expertise, international experience, and language capability covering most aspects of pest and pesticide management.

As primary contractor, CICP has sub-contracted with five member institutions to conduct various phases of the program. The division of responsibility and organizations involved are:

Consortium for International Crop Protection

- * overall project coordination and administration
- * liaison with A.I.D. and other donor groups
- * project development

International Plant Protection Center, Oregon State University

- * weed management
- * training coordination
- * socio-economics
- * communication/networking

University of Maryland College Park (UMCP), Department of Entomology

- * entomology
- * technical assistance coordination

University of Hawaii, Department of Plant Pathology and International Rice Research Institute (IRRI), Philippines

- * plant pathology
- * research coordination

University of Miami (UMI), School of Medicine, Department of Epidemiology and Public Health

- * pesticide residue analysis training
- * agromedical consulting and training

In addition, short-term consultants are utilized to perform specific tasks where appropriate. As a general policy, these individuals are selected from CICP-member institutions based on appropriate experience, background, and language skills.

II. ACTIVITIES AND ACCOMPLISHMENTS

The following is a summary of activities and accomplishments during the period October 1, 1988 - September 30, 1989. Full reports are maintained in the office of the Consortium for International Crop Protection.

A. TRAINING

- 1.) Training in the Use of "Lovibond Kit" and Cholinesterase Monitoring, sponsored by U.S.A.I.D., Morocco. Course offered to Moroccan Government personnel, October, 1988, 24 participants, Morocco. Project Consultant: Deem.
- 2.) Workshop on Pest and Pesticide Management, sponsored by A.I.D./LAC and PPM Project. Workshop offered to A.I.D./LAC Environmental Staff, January, 1989, 14 participants, Washington, DC. Project Specialists: Bottrell and Shenk.
- 3.) Training Course on Pest and Pesticide Management, sponsored by U.S.A.I.D./Guatemala and PPM Project. Course offered to Guatemala Office of Rural Development Staff and Project Contractors in Guatemala, February, 1989, 17 participants, Guatemala City. Project Specialists: Bottrell and Chiri. Project Consultant: Villagran.
- 4.) Weed Management Course, sponsored by A.I.D./CID and PPM Project. Course offered to Malawi nationals, February, 1989, 38 participants, Malawi. Project Specialist: Cooper and Shenk.
- 5.) Weed Management Course, sponsored by CIAT and PPM Project. Course offered to Ugandan nationals, March, 1989, 21 Ugandan and 3 Ethiopian participants, Uganda. Project Specialist: Shenk.
- 6.) Computer Applications in Pest Management Course, sponsored by A.I.D./CID and PPM Project. Course offered to Malawi nationals, March 1989 and Yemen nationals, May 1989, 20 participants in Malawi and 15 participants in Yemen. Project Specialist: Cooper.
- 7.) Weed Management Course, sponsored by NARP/CID and PPM Project. Two courses offered to Egyptian Ministry of Food and Agriculture Personnel, May-June, 1989, Egypt. An eight day course was held for 24 senior weed scientists and a three week course included 38 junior level scientists. Project Specialist: Shenk.
- 8.) Planning Meeting for Caribbean Regional Biological Control Workshop, June, 1989, Jamaica. Project Specialist: Bottrell. Project Consultant: Barbosa.

9.) Pesticide Management Courses, sponsored by A.I.D./CID and PPM Project. Courses offered to Yemen Ministry of Agriculture Personnel at three sites, Hodeidah, Taiz and Sana'a, June, 1989, 31, 29, and 38 participants respectively, Yemen. Project specialist: Cooper.

10.) Weed Management Strategies Course, sponsored by IPPC and PPM Project. Course offered for developing country nationals at Corvallis, Oregon, July, 1989, 9 participants from 8 countries, Oregon. Project Specialists: Shenk and Cooper.

11.) Pesticide Management Course, sponsored by FAO and PPM Project. Course offered for Trinidad nationals, August, 1989, 31 participants, Trinidad. Project Specialist: Cooper.

12.) Pesticide Residue Course, sponsored by PPM Project. Course offered to one participant from Ministry of Agriculture, Sudan, September, 1989, Miami. Project Specialist: Mann.

B. TECHNICAL ASSISTANCE

1.) Technical Backstopping for Project Consultants, Projects, and A.I.D./W (including the National Agricultural Research Project [NARP] financed by U.S.A.I.D./Egypt), Global. Provide a range of technical and logistical activities in the process of arranging for the services of, and coordinating, technical specialist consultants. Ongoing. Project specialists: Bottrell and Steinhauer.

2.) Technical Weed Management/Pesticide Management Backstopping, Global. Provision of technical data and other services for A.I.D./W, U.S.A.I.D. Missions, IDC cooperating scientists, and various institutions. Ongoing. Project specialists: Shenk, Cooper, Miller and Deutsch.

3.) Pest and Pesticide Management, Central America. Provided technical assistance on demand for ROCAP and Central American missions in areas of environmental effects of pesticides, environmental analyses, pest management advice for ongoing agricultural projects, design of projects, and other matters related to pest and pesticide management. Ongoing. Project specialist: Chiri.

4.) Crop Loss Assessment and Database Development, Indonesia and Southeast Asia. Provided continuing technical backstopping to U.S.A.I.D. missions and IDCs on crop loss assessment and the development of databases on crop pests to improve crop protection decision making on the part of host country technicians. Ongoing. Project specialist: Teng.

5.) Locust Control, Morocco. Performed a pesticide safety assessment for the Moroccan Government in connection with an ongoing locust control campaign, Morocco, October-November, 1988. Project Consultants: Fischer and MacKay.

- 6.) Environmental Assessment of Six Agricultural Production Projects in Guatemala. U.S.A.I.D./Guatemalan Highland Development Projects and Rural Development Projects required completion of environmental assessments begun in September, 1988, Guatemala, October-December, 1988. Project Consultants: Arreaga, Arriaza, Clifford, Estrada, Gonzales, Hernandez, Mazariegos, Ponciano, Stewart, Villagran and Watson.
- 7.) Environmental Assessment of Rural Development Projects in El Salvador, October-November, 1988. Project Specialist: Mann. Project Consultants: Bender, Arreaga and Kauck.
- 8.) Evaluate Regional Pesticide Tolerances in Guatemala, Costa Rica, Honduras, and El Salvador. Evaluation was conducted to provide information to determine the need for a regional pesticide tolerance petition program in Central America, October-November, 1988. Project Consultants: Hoppin and Cummings.
- 9.) Design of RENARM Project. Participated in the planning and design of the regional pest and pesticide management portion of the RENARM Project, Honduras, Guatemala, El Salvador, Costa Rica, and Belize, January to April, 1989. Project Specialists: Chiri and Bottrell.
- 10.) Pesticide Use Survey, Guatemala. Conducted a survey of growers and exporters on the use of pesticides on non-traditional crops, Guatemala, March, 1989. Project Consultants: Hoppin, Murray and Hernandez. Project Specialist: Bottrell.
- 11.) Pesticide Analyses of Crop Samples, Guatemala. Analyses of various crop samples collected in Guatemala to determine if residue levels would impact on exportation of these crops to the United States, Guatemala, March, 1989. Project Specialist: Mann.
- 12.) Project Design for Farming Practices Productivity Project, Yemen. Participated in the design of a new project for Yemen which was concerned in part with non-traditional crops. An Initial Environmental Examination was performed, as well as the development of a scope of work for a pest management specialist to be assigned to the project, Yemen, March-April, 1989. Project Consultant: Reissig.
- 13.) Scope of Work for Environmental Assessment, Antigua. Developed a scope of work for an environmental assessment of the use of Bayticol as a pour-on pesticide to be used in the pilot bont tick eradication project in Antigua, April, 1989. Project Consultant: Drummond.
- 14.) Environmental Assessment, Antigua. Conducted an environmental assessment on the use of Bayticol (Flumethrin) pour-on treatment in the pilot tropical bont tick eradication program, Antigua, June-July, 1989. Project Specialists: Mann and Bottrell. Project Consultants: Matteson, Nepote and Teel.

- 15.) Environmental Assessment, Jamaica. Conducted an environmental assessment of pesticide use in the Jamaican Banana Reclamation Project, Jamaica, July, 1989. Project Consultant: Barfield. Project Specialist: Bottrell.
- 16.) Scope of Work for Environmental Assessment, El Salvador. Developed a scope of work for the environmental assessment of pesticide use in U.S.A.I.D./El Salvador Agricultural Project, El Salvador, July-August, 1989. Project Specialist: Chiri.
- 17.) Scope of Work for Environmental Assessment, El Salvador. Prepared the scope of work for the environmental assessment of pesticide use in the Community-Based Integrated Rural Development Project, El Salvador, September, 1989. Project Specialist: Chiri.
- 18.) Pesticide Tolerance Survey, ROCAP. Prepared tolerance tables for pesticides used on 8 different crops in various ROCAP projects, Maryland, July, 1989. Project Consultant: Brown.
- 19.) Pesticide Use on Non-Traditional Crops, Guatemala. Prepared and analyzed data on the use of pesticides by growers of non-traditional crops for export in Guatemala, Washington, DC, March-June, 1989. Project Consultant: Flynn.
- 20.) Environmental Assessment, Honduras. Conducted environmental assessment of pesticides and biological control agents proposed for use in U.S.A.I.D./Honduras Integrated Pest Management Project (A.I.D. Project No. 522-0362), April, 1989. Project Specialist: Bottrell.
- 21.) Pesticide Analyses of Honey bees, Belize. Analyzed honey bees sent from Belize to determine presence of glyphosate. This was done in response to complaints by beekeepers that their bees were dying as a result of exposure, March, 1989, Belize. Project Specialist: Mann.
- 22.) Quality Control, Residue Laboratories, Global. A quality control sample was sent to 60 different residue laboratories worldwide to check the accuracy of laboratory determinations, January-September, 1989, Miami. Project Specialist: Mann.

C. RESEARCH

- 1.) Planning and Coordinating Research, Global. Arrange and support collaborative research linkages and activities, Ongoing. Project Specialists: Steinhauer, Teng and Bottrell.
- 2.) Locust/Grasshopper Control, Niger. Conducted research on the efficacy and practicality of neem kernel extract for the protection of crops from damage by locusts, grasshoppers and other insects, Ongoing. Project Coordinator: Radcliffe. Project Consultants: Strzok, Noetzel, Ouedrago, Patten and Khoury.

3.) Economic Analysis of Locust/Grasshopper Control, Chad, Mali, Oregon. Continued research on the assessment of crop damage caused by grasshoppers and locusts in the Sahel, and the analysis of economics of control strategies, and development of an expert system, Ongoing, Oregon. Project Specialist: Miller. Project Consultants: Fischer, Coop, Theiling, Murphy and Liu.

4.) Striga Research, Africa. Revised earlier proposal for research on the control of Striga. Current version has been submitted to REDSO-EA for consideration, March, 1989, Kenya. Project Specialist: Shenk.

5.) Biological Control of the European Corn Borer, Global. Executed a Collaborative Agreement between the U.S. Department of Agriculture's Animal and Plant Health Inspection Service and Agricultural Research Service and CICP for work on the exploration for introduction of and evaluation of exotic natural enemies of the European corn borer, ongoing. Project Specialists: Bottrell and Steinhauer.

D. NETWORKING

1.) IPM, Central America. Maintained liaison with various organizations involved in the implementation of IPM in Central America, such as CATIE, IICA, ROCAP, ICTA, the various governmental pest management or crop protection agencies, and the universities in Panama, El Salvador, Honduras, Guatemala, and Costa Rica. Ongoing. Project specialist: Chiri.

2.) Project Facilitation. Planning, reporting and responding to technical requests. Ongoing. Project specialists: Steinhauer (CICP), Miller (IPPC/OSU), Bottrell (CICP), Deutsch (IPPC/OSU), Mann (UMI) and Teng (Hawaii/IRRI).

3.) Distribution of Technical Print Materials, Global. Copies of technical books, pamphlets, reprints, and other materials were disseminated to numerous requestors in LDCs. Ongoing. Project specialist: Deutsch (coordinator).

4.) Production and Distribution of INFOLETTER, International. Two issues of the Project's newsletter INFOLETTER were produced and distributed to over 8,000 recipients worldwide. Ongoing. Project specialist: Deutsch.

5.) Support for Haustorium, Global. IPPC served as publisher for Haustorium, the newsletter of the international parasitic plants working group. Ongoing. Project specialist: Deutsch (coordinator).

6.) Support for IWSS, Global. IPPC continued to serve as the secretariat for the International Weed Science Society. Ongoing. Project specialist: Miller (coordinator).

- 7.) Maintenance of Worldwide Mailing List. The worldwide mailing list utilized by the project was maintained and upgraded (on a daily basis). Ongoing. Project specialist: Deutsch (coordinator).
- 8.) Pest and Pesticide LDC Libraries Enhancement, Global. Program of soliciting, collecting, and redistributing unused/unwanted technical books and journals to libraries in LDCs was continued. Ongoing. Project specialist: Deutsch.
- 9.) Production and Distribution of International Nematology Network Newsletter. Three quarterly issues of the newsletter (International Nematology Network) were prepared and distributed to over 700 recipients in most of the countries in the developing world. Project specialist: Sasser.
- 10.) Distribution of Technical Material on Nematodes, Global. Technical material on nematodes was distributed from North Carolina State University to members of Network upon request. A total of 2,412 books, booklets and conference proceedings were distributed. Project specialist: Sasser.
- 11.) International Crop Protection Information Workshop, England. Participated in week-long workshop to develop recommendations for responding to the international needs for crop protection information and coordination, April, 1989. Project Specialist: Steinhauer.
- 12.) 12th Asia-Pacific Weed Science Society Conference, Korea. Attended and participated in conference, August, 1989. Project Specialist: Cooper.
- 13.) Locust Forecasting Meeting, Rome. Represented the A.I.D. Office of Foreign Disaster Assistance at the FAO Locust Forecasting Meeting, Rome, March, 1989. Project Consultant: Murphy.
- 14.) National IPM Symposium/Workshop, Las Vegas. Attended and participated in the special workshop sponsored by the Cooperative States Research Service of the USDA, Las Vegas, April, 1989. Project Specialist: Shenk.
- 15.) Annual Meeting of the Committee of the NC-180 Regional Project. Impact of Integrated Crop Management Practices on European Corn Borer and Related Stalk Boring Insects, El Batan, Mexico. Represented CICP at meeting, Mexico, February, 1989. Project Specialist: Bottrell.
- 16.) International Vedalia Symposium, Riverside, California. Represented CICP at this special conference on biological control of insects. Some 400 biological workers worldwide examined the history, status, and future of biological control, California, March, 1989. Project Specialist: Bottrell.
- 17.) Liaison with C.A.B. International and Affiliates. Collaborated on a range of activities during year, including a visit to C.A.B.'s Institute for Biological Control by Steinhauer in April, 1989, and a visit to CICP by Peter Scott, Editor of C.A.B. International's Review Series in August, 1989, ongoing. Project Specialists: Steinhauer and Bottrell.

18.) National Research Council/A.I.D. Seminar Series. National Academy of Sciences, Washington, DC. Participated in and presented seminar on Integrated Pest Management at the monthly luncheon seminar series, Washington, DC, May, 1989. Project Specialist: Bottrell.

19.) Regional Workshop on Harmonization of Bioefficacy Test Protocols for Pesticides. CICP served as resource for this workshop attended by 23 delegates from 9 countries to develop inter-country collaboration on pesticide regulations and efficacy testing procedures. Malaysia, Oct 31 to November 4, 1988. Project Specialist: Teng.

20.) Visit U.S.A.I.D. Mission in Philippines. Discussion with U.S.A.I.D./Manila personnel on CICP research collaboration with IARCs, principally IRRI, and possible CICP service to Philippines mission. June 12-15, 1989. Project Specialist: Teng.

E. PROJECT OUTPUT

The following is a summary of publications and papers generated through the Integrated Pest Management and Environmental Protection Project (excluding consultant technical reports).

1.) Locust and Grasshopper Control in Africa/Asia. A programmatic environmental assessment, 1989. Main Report, Appendixes, and Executive Summary and Recommendations. Project Coordinator: Cavin (consultant). Contributors: Matteson, Jensen, Cate, Freed and Voss (CICP consultants) and TAMS Consultants, Inc.

2.) Pesticide Management and Integrated Pest Management in Southeast Asia. Proceedings of the Southeast Asia Pesticide Management and Integrated Pest Management Workshop, February 23-29, 1987. Sponsored jointly by CICP; U.S.A.I.D.; Ministry of Agriculture and Cooperatives, Thailand; FAO; German Agency for Technical Cooperation (GTZ); U.S.A.I.D. Mission in Thailand; and U.S.A.I.D. Bureau for Asia and Near East. Project specialist: Teng.

3.) Directory of Cooperators and Libraries. A special resource for INNN subscribers published July, 1989. Principal Investigator: Sasser.

4.) Plant-Parasitic Nematodes: The Farmer's Hidden Enemy. A 125-page book published in 1989 as an introductory text for workers in agriculture who are not nematologists or plant pathologists and who require some rudimentary understanding of nematode problems, recognition, and control. Principal Investigator: Sasser.

5.) How to Prepare Environmental Assessments of Pesticide Use in A.I.D. Agricultural Projects. First draft of this manual completed in 1989 to assist A.I.D. contractors in preparing EA's. Project Specialist: Bottrell.

III. DISTRIBUTION OF PERSONNEL EFFORT AND PROJECT RELATED TRAVEL

A series of tables summarizes personnel effort expended for project activities for the report year, and since project inception:

Table 1 - Project technical personnel (core funded FTE as of 9-30-89)

Table 2 - Distribution of personnel effort

Table 3 - Summary of project staff international travel

Table 4 - Summary of project consultants' international travel

Table 5 - Summary of project consultants' activities (excluding international travel)

Table 6 - Summary of level of effort (person months)

Table 1. PROJECT TECHNICAL PERSONNEL (FTE core funded, as of 9-30-89)

<u>Name</u>	<u>Institution</u>	<u>Position</u>	<u>FTE</u>
A.L. Steinhauer	UMCP	PPM Project Director, UMCP Entomologist	0.50
F.S. Conklin	IPPC/OSU	IPPC Interim Director, OSU Agric. Economist	0.30
A. E. Deutsch	IPPC/OSU	PPM & IPPC Communication/ Networking Coordinator	0.70
M.D. Shenk	IPPC/OSU	PPM Training Coordinator, IPPC Weed Scientist	0.70
J.B. Mann	UMI	Pesticide Residue Chemist	0.50
D.G. Bottrell	UMCP	PPM Technical Assistance Coordinator, UMCP Entomologist.	0.40
A.S. Cooper	IPPC/OSU	Weed Scientist/Computer Specialist	0.30
P.S. Teng	Hawaii/IRRI	PPM Research Coordinator, Hawaii Plant Pathologist	0.20
J.N. Sasser	NCSU	Principal Investigator for CNRCP, NCSU Plant Pathologist	0.50

Table 2. DISTRIBUTION OF PERSONNEL EFFORT

Project Output	Where	When	PM	Specialist
<u>Training</u>				
Coordinating	Maryland	*	0.50	Steinhauer
Planning Caribbean Workshop/Seminar on Biological Control for the Caribbean	Jamaica	*	0.50	Bottrell
IPM training for mission sponsored projects	Central America	*	1.00	Chiri ^{1/}
Planning Biological Control Symposium, Third International Conference on Tropical Plant Protection	Malaysia	*	0.20	Teng
Planning Workshop on Modeling Crop-Pest Interactions	Hawaii	*	0.20	Teng
Supplying training information	Corvallis	*	0.50	Deutsch
Training for Trainers Seminar	USA	Jan	0.75	Shenk
Pest/Pesticide Management Workshop	Washington, DC	Jan	0.05 0.25	Bottrell Shenk
Pest/Pesticide Management Short Course	Guatemala	Feb	0.15	Bottrell
Weed Management Course	Malawi	Feb	1.00 1.00	Cooper Shenk
Computer Applications Course	Malawi	Mar	1.00	Cooper
Weed Management Course	Uganda	Mar	1.00	Shenk

* = Entire year

^{1/} = Non-core funded

Table 2 Cont. DISTRIBUTION OF PERSONNEL EFFORT

<u>Project Output</u>	<u>Where</u>	<u>When</u>	<u>PM</u>	<u>Specialist</u>
<u>Training</u>				
Micro-Computers Course	Yemen	May	1.00	Cooper
Pesticide Management Course	Yemen	Jun	0.50	Cooper
Weed Management Course	Egypt	Jun	1.25	Shenk
Weed Management Strategies Course	Corvallis	Jul	0.65 1.80	Cooper Shenk
Pesticide Management Course	Trinidad	Aug	0.50	Cooper
Pesticide Residue Course	Miami	Sep	1.00	Mann
<u>Technical Assistance</u>				
Technical backstopping for project, consultants, and A.I.D.	Maryland Corvallis Corvallis Corvallis Corvallis Corvallis Maryland	* * * * * * *	1.50 0.50 0.50 1.00 1.00 1.00 3.00	Bottrell Conklin Cooper Deutsch Miller Shenk Steinhauer
Technical backstopping for NARP	Maryland	*	0.50	Steinhauer ^{1/}
Assist CICP Consultants with EAs	Maryland	*	0.85	Bottrell ^{1/}
Technical assistance for A.I.D. Missions in crop protection, pesticides and IPM	Central America	*	6.00	Chiri ^{1/}

* = Entire year

^{1/} = Non-core funded

Table 2 Cont. DISTRIBUTION OF PERSONNEL EFFORT

<u>Project Output</u>	<u>Where</u>	<u>When</u>	<u>PM</u>	<u>Specialist</u>
<u>Technical Assistance</u>				
Vegetable disease forecasting	Malaysia	*	0.20	Teng
Environmental Assessment	El Salvador/ Miami	Oct	1.00	Mann ^{1/}
Quality Control Sample UM-019	Miami	Jan-Sep	2.10	Mann
Environmental Assessment	Honduras	Feb	0.40	Bottrell ^{1/}
ROCAP-RENARM Pest/ Pesticide Management Project Design	Central America	Feb-Mar	0.75	Bottrell ^{1/}
Non-Traditional Crop Residue Project	Guatemala	Mar	0.10	Bottrell
Analysis of Belize samples	Miami	Mar	0.50	Mann
Analysis of Guatemala samples	Miami	Mar-May	2.00	Mann
Environmental Assessment	Antigua/ Miami	Jun-Sep	0.50	Mann ^{1/}
<u>Research</u>				
Planning collaborative research	Maryland	*	0.50	Steinhauer
Planning/review	Central America	*	1.00	Chiri ^{1/}
CICP-USDA Collaborative Agreement	Maryland	*	0.50	Bottrell

* = Entire year

^{1/} = Non-core funded

Table 2 Cont. DISTRIBUTION OF PERSONNEL EFFORT

<u>Project Output</u>	<u>Where</u>	<u>When</u>	<u>PM</u>	<u>Specialist</u>
<u>Research</u>				
Grasshopper/Locust Expert System	Corvallis	*	1.00	Miller ^{1/}
Corn Crop Loss Assessment	Philippines	*	0.80	Teng
Rice - Impact of Strategic Extension Campaign	Mada/Malaysia	*	0.40	Teng
Striga Proposal	East Africa	Mar	2.00	Shenk
LISA Proposal	Corvallis	Aug	0.25	Cooper
<u>Networking</u>				
Responding to requests	Maryland	*	0.50	Bottrell
	Corvallis	*	0.50	Miller
	Maryland	*	1.25	Steinhauer
CICP-C.A.B. International liaison	Maryland	*	0.10	Bottrell
Newsletters	Corvallis	*	3.00	Deutsch
	Raleigh	*	6.00	Sasser
Reports/planning	Corvallis/Maryland	*	1.35	Conklin
		*	1.40	Deutsch
		*	1.00	Miller
Publications	Corvallis	*	1.50	Deutsch
		*	0.25	Miller
		*	1.50	Shenk
IWSS Activities	Corvallis	*	0.15	Conklin
		*	1.00	Deutsch
		*	0.25	Miller
Correspondence	Miami	*	0.50	Mann

* = Entire year

^{1/} = Non-core funded

Table 2 Cont. DISTRIBUTION OF PERSONNEL EFFORT

Project Output	Where	When	PM	Specialist
<u>Networking</u>				
Reports/planning	Maryland/ Miami	*	0.50	Mann
FAO Rice IPM Program for South East Asia	SE Asia	*	0.20	Teng
Bioefficacy Harmoniza- tion Working Group/FAO	SE & S Asia	*	0.20	Teng
U.S.A.I.D. Missions, CATIE, IA Institutions	Central America	*	4.00	Chiri ^{1/}
Pesticide Applicators Workshop	USA	Jan	0.15	Cooper
WSSA Conference	USA	Feb	0.10 0.25	Cooper Shenk
NC-180 Meeting	Maryland	Feb	0.25	Bottrell
Vedalia Symposium	Maryland	Mar	0.25	Bottrell
C.A.B. International Crop Protection Workshop	England	Apr	0.25	Steinhauer
NRC/A.I.D. Seminar	Maryland	May	0.05	Bottrell
A.I.D. Staff Seminar	Maryland	May	0.05	Bottrell
LISA Conference	USA	Jul	0.10	Cooper
IBSNAT/TAC Meetings	Hawaii	Jul	0.20	Teng
APWSS Conference	Korea	Aug	<u>0.25</u>	Cooper
Total Effort			71.70	

* = Entire year

^{1/} = Non-core funded

Table 3. SUMMARY OF PROJECT STAFF INTERNATIONAL TRAVEL

<u>Project Activity</u>	<u>Where</u>	<u>When</u>	<u>Specialist</u>
<u>Training</u>			
Training course on Pest and Pesticide Management for U.S.A.I.D./Guatemala Office of Rural Development Staff and Project Contractors	Guatemala	Feb	Bottrell Chiri
Weed Management Course	Malawi	Feb	Cooper ^{1/} Shenk ^{1/}
Conducted Weed Management Course	Uganda	Mar	Shenk ^{1/}
Computer Application Course	Malawi	Mar	Cooper ^{1/}
Conducted two Weed Management Workshops	Egypt	May-Jun	Shenk ^{1/}
Microcomputer assistance	Yemen	May	Cooper ^{1/}
Planning for Caribbean Regional Biocontrol Workshop and Seminar	Jamaica	Jun	Bottrell
3 Pesticide Management Courses	Yemen	Jun	Cooper ^{1/}
Pesticide Management Course	Trinidad	Aug	Cooper ^{1/}
<u>Technical Assistance</u>			
Environmental Assessment for U.S.A.I.D. Rural Development Projects	El Salvador	Oct-Nov	Mann
Interact with CATIE IPM Project & meet with CICP E.A. Team	El Salvador	Oct	Chiri

^{1/} Travel funds provided from sources other than A.I.D. Contract No. DAN-4142-C-00-5122-00

Table 3 Cont. SUMMARY OF PROJECT STAFF INTERNATIONAL TRAVEL

<u>Project Activity</u>	<u>Where</u>	<u>When</u>	<u>Specialist</u>
<u>Technical Assistance</u>			
Attend U.S.A.I.D./Office of Rural Development EA debriefing & discuss IPM Project PID with ROCAP Staff	Guatemala	Nov	Chiri
Discuss design of regional pest & pesticide management program	Honduras	Jan	Chiri
	Guatemala	Feb	
	El Salvador	Feb	
	Guatemala	Mar	
Participated in design of pest & pesticide management program	Honduras/El Salvador	Apr	Bottrell
	Guatemala	Feb-Mar	
	Belize		
	Honduras		
Costa Rica			
Environmental Assessment of use of Bayticol pour-on in pilot eradication project for tropical bont tick	Antigua	Jun	Mann
Develop Scope of Environmental Assessment for U.S.A.I.D. Agricultural Project	El Salvador	Jul-Aug	Chiri
Assisted ROCAP in writing report concerning its IPM activities	Guatemala	Aug	Chiri
Prepared Environmental Assessment Scope for Community Based Integrated Rural Development Project	El Salvador	Sep	Chiri

^{1/} Travel funds provided from sources other than A.I.D. Contract No. DAN-4142-C-00-5122-00

Table 3 Cont. SUMMARY OF PROJECT STAFF INTERNATIONAL TRAVEL

<u>Project Activity</u>	<u>Where</u>	<u>When</u>	<u>Specialist</u>
<u>Research</u>			
Visited IRRI as part of project research with IARCS	Philippines	Jun	Teng
<u>Networking</u>			
Attend Regional Workshop on Harmonization of Bioefficacy Test Protocols for Pesticides	Malaysia	Oct-Nov	Teng ^{1/}
Attend International Crop Protection Information Workshop at C.A.B. International Headquarters	England	Apr	Steinhauer ^{1/}
Attend ROCAP yearly retreat	Guatemala	Apr	Chiri
Participated in RENARM meeting for U.S. NGO's and FVO's	Honduras	May	Chiri
Discussed future collaboration in IPM with U.S.A.I.D., CENTA and CATIE staff	El Salvador	Jul	Chiri
Attended final seminar of CATIE/ROCAP IPM Project	El Salvador Guatemala	Sep	Chiri
12th APWSS Conference and meet with UN ESCAP	Korea/Thailand	Sep	Cooper ^{1/}

^{1/} Travel funds provided from sources other than A.I.D. Contract No. DAN-4142-C-00-5122-00

Table 4. SUMMARY OF PROJECT CONSULTANTS' INTERNATIONAL TRAVEL

<u>Project Output</u>	<u>Where</u>	<u>When</u>	<u>Specialist</u>
<u>Training</u>			
Train government personnel in use of "Lovibond" kit and Cholinesterase Monitoring	Morocco	Oct	Deam
Training Course on Pest and Pesticide Management for U.S.A.I.D./Guatemala Office of Rural Development Staff and Project Contractors	Guatemala	Feb	Villagran
Planning for Caribbean Regional Biocontrol Workshop and Seminar to be held in Jamaica, July, 1990	Jamaica	Jun	Barbosa
<u>Technical Assistance</u>			
Locust control project - pesticide safety assessment	Morocco	Oct-Nov	Fischer Mackay
Environmental Assessment of U.S.A.I.D. Highland Agricultural Development & Rural Development Projects	Guatemala	Oct-Nov	Watson
Environmental Assessment of U.S.A.I.D. Rural Development Projects	El Salvador	Oct-Nov	Arreaga Bender Kauck
Conducted a study on the need for a regional pesticide tolerance petition program in Central America	Guatemala Costa Rica Honduras El Salvador	Oct-Nov	Cummings Hoppin
Conducted survey of growers & exporters on pesticide use on non-traditional crops	Guatemala	Mar	Hernandez Hoppin Murray

Table 4 Cont. SUMMARY OF PROJECT CONSULTANTS' INTERNATIONAL TRAVEL

<u>Technical Assistance</u>			
Prepared an Initial Environmental Examination for the farming practices productivity project; a statement of work for a long-term pest management specialist; an analysis of appropriate pesticide use	Yemen	Mar-Apr	Reissig ^{1/}
Performed scoping exercise for an Environmental Assessment of proposed use of Bayticol pour-on in pilot eradication project for tropical bont tick	Antigua	Apr	Drummond ^{1/}
Environmental Assessment of use of Bayticol pour-on in pilot eradication project for tropical bont tick	Antigua	Jun	Matteson Nepote Teel
Environmental Assessment & Analysis of pesticide use in Banana Reclamation Project	Jamaica	Jul	Barfield ^{1/}
<u>Research</u>			
Neem Research Project	Niger W. Germany	Oct	Strzok
Neem Research Project	Niger	Nov	Noetzel Strzok
<u>Networking</u>			
To attend the Locust Forecasting meetings at FAO as official representative of A.I.D./OFDA	Italy	Mar	Murphy

^{1/} Travel funds provided from sources other than A.I.D. Contract No. DAN-4142-C-00-5122-00

Table 5. SUMMARY OF PROJECT CONSULTANTS' ACTIVITIES (Excluding International Travel)

<u>Project Output</u>	<u>Where</u>	<u>When</u>	<u>Specialist</u>
<u>Technical Assistance</u>			
Environmental Assessment of Six Agricultural Production Projects	Guatemala	Oct-Dec	Arreaga Arriaza Estrada Gonzalez Hernandez Mazariegos Ponciano Stewart Villagran
Prepared table of tolerances on pesticides for 8 crops used in ROCAP projects	Maryland	Jul	Brown
<u>Research</u>			
Neem research project	Minnesota	Oct-Sep	Khoury Ouedrago Patten Strzok
IPPC Economic analysis for Grasshopper/Locust Project	Oregon	Oct-Sep	Coop Fischer Liu Murphy Theiling

Table 6. SUMMARY OF LEVEL OF EFFORT (PERSON-MONTHS)

Personnel Component	Activity Component				Total
	Training	Technical Assistance	Research	Networking	
<u>For Report Year, Oct 88 - Sep 89</u>					
Project Technical Staff	14.80	23.40	06.45	27.05	71.70
Consultants	01.80	18.79	34.68	00.40	55.67
Support Staff	-----	-----	-----	-----	<u>70.32</u>
			TOTAL		197.69
<u>Cumulative From Project Inception, Oct 85 - Sep 89</u>					
Project Technical Staff	73.35	95.95	37.60	100.28	307.18
Consultants	18.25	131.24	75.18	00.90	225.57
Support Staff	-----	-----	-----	-----	<u>207.50</u>
			TOTAL		740.25