AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D. C. 20523

BIBLIOGRAPHIC INPUT SHEET

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Batch 88

1. SUBJECT CLASSIFICATION

A. PRIMARY: Serials — Y-AH60-0000-0000

B. SECONDARY: Food production and nutrition--Weeds

2. TITLE AND SUBTITLE
Weed control systems for representative farms in developing countries; semi-annual report,April-Sept.1977

3. AUTHOR(S)
(101) Or.State Univ. Int.Plant Protection Ctr.

4. DOCUMENT DATE: 1977

5. NUMBER OF PAGES: 130p.140

6. ARC NUMBER
ARC

7. REFERENCE ORGANIZATION NAME AND ADDRESS
Or.State

8. SUPPLEMENTARY NOTES *(Sponsoring Organization, Publishers, Availability)*
(Adm.summary)

9. ABSTRACT

10. CONTROL NUMBER
PN-AAF-706

11. PRICE OF DOCUMENT

12. DESCRIPTORS
Research

13. PROJECT NUMBER
931046300

14. CONTRACT NUMBER
AID/ta-C-1295 Res.

15. TYPE OF DOCUMENT

AID 590-1 (4-74)

AID/ta-C-1295 Rec. Or. State PN-AAF-706

Agency for International Development / Oregon State University

SEMI-ANNUAL REPORT

April 1, 1977 through September 30, 1977

WEED CONTROL SYSTEMS FOR REPRESENTATIVE FARMS IN DEVELOPING COUNTRIES

Contracts AID/CM/ta-C-1295, AID/CM/ta-c-1303

Coordinated by the International Plant Protection Center

Report 21-C-77

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Report prepared and issued by:

International Plant Protection Center
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Corvallis, OR 97331 / USA

AID/OSU WEED PROJECT BEGINS ASIAN ASSIGNMENT

A two-man research and technical assistance team, with socio-economic backup, arrived in Manila during May 1977 to launch a cooperative weed control systems program with the recently formed Philippine National Crop Protection Center (NCPC) at Los Banos.

OSU research agronomists Dr. Philip Motooka and Herbert Fisher, supported by agricultural economist Dennis O'Brien, established contact with NCPC and began the initial phases of a joint program which will emphasize weed control systems for upland, rainfed crops. Broad goals include identifying optimal weed control technologies for representative small- and medium-size farms and evaluating the socio-economic impacts of these technologies for the farm and associated labor pool.

The OSU team will cooperate with NCPC in training local specialists in the application of effective and efficient weed control methods as well as contemporary research procedures. Known weed control techniques will be tested and evaluated and the potential benefits of weed control systems assessed for farmers, as well as for administrators and other governmental decision makers.

CENTER TO COORDINATE PHILIPPINE CROP PROTECTION

A National Crop Protection Center was established by Presidential decree in 1976 to implement and coordinate a wide range of crop protection programs in the Philippines. The NCPC is headquartered at the University of the Philippines Los Baños campus (UPLB) with seven regional centers (RCPCs) located throughout the country.

NCPC is responsible for planning and developing crop protection research, carrying out training programs, advising governmental officials regarding regulatory programs, undertaking information and extension activities, and establishing linkages between research and operational elements of crop protection.

Priorities for NCPC, as spelled out by its director, Dr. Fernando F. Sanchez, include integrated pest management for rice, corn, vegetables, and grain sorghum, plus training, field surveillance, and research programs. NCPC also has placed high priority on translating research results into practical information for use by small farmers.

CONTACTS ESTABLISHED

In addition to collaborating with NCPC, the OSU team contacted researchers at UPLB, the Bureau of Plant Industry (BPI), several RCPCs, Central Mindanao University (CMU), and staff at the International Rice Research Institute (IRRI). Exploratory discussions were held and plans firmed for research programs, research training, and information gathering.

Four sites came under active consideration for research: Laguna, Cavite, Bukidnon (Mindanao), and Central Luzon (Nueva Ecija or Pangasinan). A cooperative linkage with BPI, through its Maligaya RCPC, and Central Luzon State

University (CLSU) has been established. Tentative agreements call for BPI to second two technicians to the NCPC/OSU effort. Also, two other technicians stationed at Maligaya are to be assigned to manage experiments in Nueva Ecija. A CLSU staff member will be assigned to work with the joint program on a trial involving mung beans (CLSU is cooperating with the Asian Vegetable Research and Development Center, Taiwan-R.O.C., in mung bean improvement).

The Cavite research site, at Silang, is being developed with the International Institute of Rural Reconstruction (IIRR). Farms in the area average 2.53 ha/farm with only 1.02 ha arable land. Crops are predominantly rainfed and both land preparation and cultivation are performed almost exclusively by draft animal; more than 96 percent of the farms have plows and harrows. Most farmers use fertilizer, but only a few employ pesticides. Weed research will focus on control of weeds in upland rice, corn, grain sorghum, and mung beans.

PRESENTATIONS, SEMINARS

Dr. Motooka presented a lecture June 20 during a BPI training program at the Maligaya Rice Research and Training Center at Nueva Ecija. On August 11th Mr. Fisher and Dr. Motooka presented a joint four hour seminar to 30 participants at a UPLB rice training course for extension workers. Pest management and techniques for developing weed control systems for small food producers were covered.

Both OSU agronomists attended the 6th Asian-Pacific Weed Science Society (APWSS) gathering at Jakarta, Indonesia. As APWSS newsletter editor, Dr. Motooka met with the group's executive committee. Mr. Fisher was appointed chairman of a committee on weed control research techniques. Approximately 270 people from throughout Asia and the Pacific, plus FAO and other organizations, heard 91 presentations on weed research and education. A special workshop that was held, Weed Control on Small Scale Farms, focused on weed problems and the challenge of developing and delivering appropriate control technology to small farms.

Under a travel grant from the East-West Center Food Institute, Dr. Motooka attended a Workshop on Crop Surveillance for Pest Management during July at the Center's facility in Honolulu. Approximately 45 agricultural scientists and administrators representing 15 countries and numerous U.S. states discussed the current status of crop surveillance and promising new innovations in the discipline.

On September 29th the OSU project agronomists presented two lectures in pest management and basic weed control principles to more than 100 attendees at the first CMU Crop Science Society seminar.◇

II CENTRAL AMERICA

AID/OSU WEED PROJECT COMPLETES FIRST YEAR

With a full year of operation under its belt the AID/OSU weed control systems effort in Central America has established firm linkages, participated in a number of presentations, taken data from the initial rounds of research, and expanded its efforts to five Central American nations: Costa Rica, Nicaragua, Honduras, Panama, and El Salvador.

OSU research agronomist Myron Shenk travelled to Panama in early June and again in late September (during the report period). During the latter trip he visited several weed research sites, helped establish an 18-treatment weed control experiment at Bayano, and met with a number of Panamanian officials as well as AID officials. The trips stemmed from interest in Panama for reviving a national weed control research program.

Mr. Shenk recommended that present pesticide application equipment for research is inadequate and that organization of experiments could be improved. Also, intensive training is needed for all personnel involved in weed research, particularly in connection with handling and application of herbicides.

RESEARCH CONTINUED

Research programs in the Guapiles-Cariari region of Costa Rica were carried out with the development of data suggesting improved methods of preplant weed management. A cooperative program with a University of Costa Rica researcher was begun at the Alajuela research station. A herbicide persistence trial was established at Turrialba.

EDUCATION ACTIVITIES

Dr. Locatelli and Mr. Shenk have each been designated as a major professor for a graduate student at CATIE (Centro Agronómico Tropical de Investigación y Enseñanza). Thesis projects in weed management for both students were planned and will be established in the field soon.

Both agronomists participated in a short course held in Nicaragua. They also met with an official of Honduras' cropping system program to assist with weed control aspects, and discussed weed management systems with a Guatemalan program technical director.

Dr. Locatelli presented a seminar on weed management to CATIE Staff and Mr. Shenk later presented another seminar to the same group covering socio-economic considerations of establishing a new research program.

Central America---

SOCIO-ECONOMIC RESEARCH UNDERWAY IN COSTA RICA

Dr. Frank Conklin and Thomas McCarty, OSU agricultural economists, arrived in Costa Rica in mid-June to plan and carry out the first phase of socio-economic research on the potential impact of weed control/management technology. Mr. McCarty remained in Costa Rica through the report period collaborating with the OSU team agronomists and CATIE staff.

A questionnaire was prepared by the team, reviewed, pretested, revised, and taken to the field. Field enumerators were trained and the survey of farms begun. Questionnaire responses were reviewed and follow-up interviews conducted where data was missing or inconsistent.◇

III AQUATIC PROGRAM

AQUATIC GROUP PRESENTS WEED SHORT COURSE

The aquatic weed program of IPPC, led by Dr. George Allen and headquartered at the University of Florida, Gainesville, organized and presented a seven week short course to 10 participants from eight less developed countries during August and September at Gainesville. The course, entitled "Identification, Control & Utilization of Aquatic Plants," was sponsored through the U.S. Department of Agriculture's international training program.

Assessment of aquatic weed problems and their socio-economic impact and the role of government in weed control also were discussed. Local and statewide field trips allowed participants to see Florida's aquatic weed problems and current control techniques, as well as to attend the Florida Department of Natural Resources' Annual Aquatic Plant Research Review Conference in Orlando.

THAI PROGRAM COMBINES TRAINING AND ASSESSMENT

The National Research Council (NRC) of Thailand requested (through USAID channels) that IPPC supply technical assistance for developing an aquatic weed control program and training course. The proposed program's scope and size were considered excessive without a thorough assessment of the water weed problem in Thailand.

A response to the request recommended an alternative program that included a three week short course and a two week assessment of aquatic weeds in Thailand. The NRC withdrew its first request and submitted a second one which incorporated these recommendations. Supplemental funds were requested from TAB/AID to conduct the training course and assessment trip in November, 1976. Final approval of the additional funds occurred in March, 1977.

The three week training course was organized by the Coordinating Subcommittee on Aquatic Weeds (CSAW) of NRC and conducted at the Royal Irrigation Department (RID) during April 4-22, 1977. Twenty-five representatives of Thai governmental agencies and universities attended the course with instruction provided by a joint US-Thai 11 person team.

The course consisted of lectures during the morning and laboratories or demonstrations during the afternoons. Two one-day field trips were conducted to observe aquatic weed problems in various aquatic systems.

The training course emphasized the "systems ecology" approach and the critical nature of understanding aquatic systems as a whole before considering control measures. Aquatic weed problems are the result of serious alterations in the aquatic ecosystem, participants were told, and control programs designed for a particular water system also must include methods to correct the alterations responsible for the problem.

The lectures also stressed that the control measures presented were those currently being developed or practiced in the U.S., and that these techniques provide a foundation upon which a modified program could be constructed for use in Thailand.

Aquatic Program--

A team of five technicians--Drs. George Allen and Frank Conklin (IPPC), and three Thai representatives--carried out a two week assessment trip to provide on-site evaluation of the major aquatic weed problems throughout Thailand. The purpose was to determine the extent of aquatic weed problems, identify procedures for assessing their economic impact, and formulate a plan of action for control programs.

OTHER AQUATIC ACTIVITIES

Aquatic group information specialist Mimi Monsour attended the Aquatic Plant Management Society annual meeting (in Minneapolis) to explain the program's literature gathering/information system and to solicit printed materials from researchers and company representatives.

The information dispersal activity was active during the report period filling approximately 50 requests for information.

Dr. Allen presented two papers at the Annual Aquatic Plant Research Review Conference of the Florida Department of Natural Resources held at Orlando in September. ◇

18-MONTH PROJECT REVIEW HELD

Both aspects of the program, research and technical assistance, came under intensive scrutiny during the "18-month" review held at Corvallis on August 25 and 26. Keith Byergo, project manager, represented TAB/AID. Warren S. Shaw, ARS/USDA National Program Staff weed scientist, completed the two-man review team.

Project staff members presented a series of brief overviews concerning the historical background and progress of the program, the status of both research and technical assistance contracts including the socio-economic and aquatic components, and a detailed current financial report.

The project review team circulated evaluation issues papers for both contracts. The OSU project group prepared detailed responses and submitted them for consideration by the team.

A broad ranging discussion during the review focused on future activities of the weed systems program beyond the current contracts (which expire March 31, 1979). The project's interest in exploring potential involvement in certain regions of Africa was presented to the review team and received a favorable response.

WEED PROJECT SUBMITS WORKING PAPER FOR INVOLVEMENT IN AFRICA

The AID/OSU weed program, with a long (10 year) involvement in Latin America and a shorter formalized presence in Asia, has prepared a working document expressing strong interest in extending weed control systems research and technical assistance to certain regions in Africa.

The 11-page proposed African extension notes the preponderance of small farms and the related socio-economic problem surrounding weed control, labor, costs, and technical uplift. The proposal suggests program objectives similar to those currently guiding research and technical assistance activities:

1. Identify optimal weed control technologies for representative small- and medium-size farms in selected African countries;

2. Evaluate the socio-economic impacts of these technologies for the farm and associated labor pool;

3. Estimate efficiency trade-offs to achieve other societal goals such as greater rural employment and a more even distribution of income.

CROP PROTECTION CONSORTIUM PROPOSED

Ten U.S. universities have prepared initial documentation agreeing to form and implement an international crop protection consortium. Oregon State University is one of the founding institutions. The proposed consortium expects to become legally incorporated by

late 1977 and to then establish a working executive group. Concurrently the group has drafted a proposal for a planning grant (through BIFAD) to perform collaborative research on a range of pressing crop protection problems.

ACTIVE INFORMATION PROGRAM CONTINUED

The project sustained its information program during the report period. Two issues of the IPPC INFOLETTER were published and each distributed to nearly 4,000 recipients. Items cited in INFOLETTER continued to elicit requests for further information which, in almost all cases, was supplied by project personnel.

A Spanish manuscript for FIELD MANUAL FOR WEED CONTROL RESEARCH was prepared and sent to be typeset. The publication is expected to be available by early 1978.

Revision began on an earlier publication, Bibliografía Parcial de Investigación sobre Malezas y su Control para America del Sur, America Central, El Caribe y Mexico 1942-1972. The new publication, scheduled for distribution in late 1977, will incorporate all the previous references plus information covering the period since 1972.

OTHER ACTIVITIES

A herbicide screening trial was established at OSU's experimental farm in May to evaluate 14 experimental compounds from seven chemical companies. Thirty seven crop and weed species were used as indicators as well as to generate information concerning general phytotoxicity and crop selectivity. Representative commercial herbicides were included in the trial for comparative purposes to help determine the effectiveness of the new experimental materials. Reports of the results were provided to public (institution) researchers as well as the companies involved.

Project members, as a service to APWSS (the Asian-Pacific Weed Science Society), collected information, designed, and printed a booklet commemorating the Society's ten years of existence.

IPPC was officially named as the secretariat for IWSS (International Weed Science Society) resulting from a mail poll of, and vote by, IWSS members. The project assisted IWSS in collecting information, translating, publishing, and distributing the IWSS newsletter.

The project/IPPC continued to welcome international visitors to Corvallis including the director of the Central Plant Protection Training Institute at Hyderabad, India, who spent a week on the Corvallis campus. The training officer from IITA (International Institute of Tropical Agriculture) Ibadan, met with the project to discuss mutual interests and the possibilities of establishing a training-education link.

Project agronomist Larry Burrill attended the 6th Asian-Pacific Weed Science Society conference at Jakarta in July and the East-West Center sponsored Workshop on Crop Surveillance for Pest Management at Honolulu. Project director Stanley Miller also attended the workshop.◇

V FINANCIAL REPORT

	Firm Budget 4/1/77-3/31/78 (Amend. no. 1)	Actual expenditures 4/1/77-9/30/77	Balance and anticipated expenditures to 3/31/78
RESEARCH PROGRAM			
Salaries and wages	$109,377	$49,588.78	$59,788.22
Fringe benefits	17,500	8,586.09	8,913.91
Indirect costs	55,983	28,128.51	27,854.49
Allowances	23,897	10,321.04	13,575.96
Travel and transportation	34,466	23,568.39	10,897.61
Other direct costs	2,681	1,918.25	762.75
Equipment, vehicles, materials and supplies	10,000	5,614.15	4,385.85
TOTAL	$253,904	$127,725.21	$126,178.79
TECHNICAL ASSISTANCE (Amends. 1 & 5)			
Salaries and wages	$138,083	$59,799.25	$78,283.75
Fringe benefits	22,093	9,461.82	12,631.18
Indirect costs	56,218	30,428.69	25,789.31
Differential and allowances	16,632	10,319.99	6,312.01
Travel and transportation	15,813	19,895.38	-4,082.38*
Other direct costs	3,123	2,084.16	1,038.84
Equipment, vehicles materials and supplies	9,238	5,956.91	3,281.09
Sub-contract	80,550	60,853.52	19,696.48
TOTAL	$341,750	$198,799.72	$142,950.28

*Necessary travel will be expended from balances in other line items.

VI Project Personnel

A list of project staff members for the period covered by this report is as follows:

STANLEY F. MILLER, director - Corvallis, .50 FTE - R/TA

GEORGE E. ALLEN, leader aquatic group - Gainesville - TA

ALLAN DEUTSCH, information services/administration - Corvallis - R/TA

LARRY C. BURRILL, research agronomist - Corvallis - R/TA

GEORGENA S. KNAPP, fiscal affairs/translation - Corvallis - R/TA

MYRON D. SHENK, research agronomist - Turrialba, Costa Rica - R

HERBERT H. FISHER, research agronomist - Los Banos, Philippines - R

EDUARDO LOCATELLI, research agronomist - Turrialba, Costa Rica - TA

PHILIP S. MOTOOKA, research agronomist - Los Banos, Philippines - TA

FRANK CONKLIN, agricultural economist - Corvallis, .50 FTE - R

THOMAS McCARTY, agricultural economist - Corvallis and Turrialba, Costa Rica, .50 FTE - R (appointed 6/18/77)

DENNIS O'BRIEN, agricultural economist - Corvallis, .50 FTE - R

RICHARD L. CHASE, research agronomist - Corvallis, .50 FTE - TA

FRANK G. FRASER, experimental biology technician - Corvallis - R/TA

CHRISTIE ANDERSON, information specialist - Corvallis - R/TA

CAROLYN WALLS, secretary - Corvallis - R/TA

MIMI MONSOUR, information specialist - Gainesville - TA

CAROLYN JOHNSON, secretary - Corvallis, .50 FTE - R

FTE = full time equivalent
R = research contract
TA = technical assistance contract