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The Director, BPI



TRIP REPORT

**Research Contract AID/ta-C-1295
"Weed Control Systems for Representative Farms
in Developing Countries"**

**Philippine Project
National Crop Protection Center/Oregon State University/USAID
Herbert H. Fisher**

Covering One Trip

February 5-10, 1979 to the Region XI Bureau of Plant Industry (BPI) Office, Davao City and Experiment Station at Bago-Oshiro; to the Malaybalay Regional Crop Protection Center (MRCPC) at Bangcud, Matin-ao, Bukidnon; to Central Mindanao University (CMU) at Musuan, Bukidnon; to the Region X Bureau of Plant Industry Office, Cagayan de Oro City; and to Xavier University (XU), Cagayan de Oro.

A. Itinerary

Monday, February 5 - lv. Manila 12:45 PM, ar. Cagayan de Oro 2:15PM
Tuesday, February 6 - lv. Cagayan 7:00 AM, ar. Davao City 7:30 AM
Wednesday, February 7 - lv. Davao City 10:00 AM, ar. Musuan 12:00 AM
Thursday, February 8 - in Musuan/Bangcud area
Friday, February 9 - lv. Musuan 11:00 AM, ar. Cagayan 11:45 AM
Saturday, February 10 - lv. Cagayan 9:00 AM, ar. Manila 10:30 AM

B. Persons Met

1. Mr. Domingo De Guzman, Director of BPI, Region X, Cagayan de Oro City
2. Mr. Jerry Uy, Region X, BPI

3. Miss Lealyn Abellanos, Region X, BPI
4. Mr. George Melchor, Director, MRCPC
5. Mr. Padilla, Business Manager, MRCPC
6. & 7. Messrs. Felipe Lopez and Pabs Fernandez, Weed Science colleagues, MRCPC
8. & 9. Messrs. Fred Palalimpa and Epi Mulat, MRCPC plant protection officers
10. Dr. Raymundo Fonollera, Dean, College of Agriculture, CMU
11. Dr. Dale Goodell, World Bank Consultant in Agric. Extension, CMU
12. & 13. Messrs. Lorenzo Margate and Pat Elliot, Weed Science colleagues, CMU
14. Mr. Boy Bagares, research aide or field technician on weed project, CMU
15. Mr. William Walter, Mosanti and Co., Inc. technical representative
16. Mr. Joel Lumagbas, CIBA-GEIGY Co., Technical representative, Cagayan de Oro
17. Mr. Flor Dalapag, Weed Science Section, XU, Cagayan de Oro
18. Miss Mila Sandoval, Communication Development Instructor, XU, Cagayan de Oro
19. Mr. Alejandro Yadao, Director of BPI, Region XI, Davao City
20. Mr. Luis Petrache, Director of BPI, Region XI, Bago-Oshiro Expt. Sta. (17 km. from Davao City)

C. Major Accomplishments/Findings

At MRCPC:

-- Because of poor initial growth, poor germination (65%) and extensive drought in Southern Bukidnon (no appreciable rain for 40 days) the cooperative weed control expts. have had to be abandoned. No yield data will be obtained. However, visual evaluations on weed control and corn injury were obtained at 7, 15 and 30 DAS and weed counts and weights were taken at 15 and 30 DAS for the labor/capital substitution and stale seedbed expts. at Aglayan and for the weed control systems trial at MRCPC. The season long weed control expt. (to control late season weeds especially) was lost previously due to almost zero germination of the hybrid corn seed. - I visited the systems trial at MRCPC and the corn was almost dead; however, the Rottboellia exaltata or "aguingay", although suffering, was far from dead. - At our corn spacing or planting density there were about 5.3 plants/m² whereas in weedy check plots there were often 400 - 600 "aguingay" plants/m². Even with weed control the competition for available moisture was extreme. - A few days ago a small sprinkle had wet the upper 1 cm. of soil only. Already a new flush of 1-leaf stage "aguingay" had come up.

-- Next June either George Malchor and Felipe Lopez or George and Pabs Fernandes will pursue their studies at UPLB at the

masters level; either Lopez or Fernandez will take up weed science, but not both. So one will be left at least until November 1979 to help carry out the wet season expts. which are already being outlined. - An arrangement to finance these trials has been worked out with Director De Guzman of Reg. X BPI. NCPC/IPPC will cover the cost of fertilizer and pesticide (the latter mostly donated by industry) which can be purchased on this present contract (IPPC-AID/Washington) while I am still consultant in-country. MRCPC/BPI will cover land preparation, fencing, seed and total labor. - The expts. will not include L/C subst., but will be on weed control systems, season long weed control and stale seedbed. These are already outlined and materials and new experimental sites are being secured.

-- Mr. Felipe Lopez, Mr. Fabo Fernandez and I are finishing the writing of the research paper "preliminary Findings on Control of Rottboellia exaltata and Other Weeds in Corn in Bukidnon" for inclusion in the Proceedings of the First Technical Conference, Bureau of Plant Industry, Region X and 10th Anniversary.

-- Much of the above paper will be useful for 1-2 papers to be presented by my colleagues Lopez and Fernandez at the May 1979 meeting of the Pest Control Council of the Philippines (PCCP) in Manila.

-- Weed Science colleague Lopez also was able to generate useful data on accuracy of application of the Taiwanese 16a knapsack sprayer. Employing said sprayer not equipped with pressure gauge or pressure regulator, Lopez and assistant obtained delivery over 6 replications and also 6 times for small (3m x 6m) and large (3m x 15m) plots. These data are now being analyzed statistically to see if there are significant differences in delivery from one plot to another. - It is our contention that one can obtain satisfactory sprayer output for research purposes from a knapsack unit without a pressure gauge or pressure regulator if the operator is thoroughly familiar with the sprayer and develops a good spraying rhythm. This is important in developing nations where sophisticated equipment is difficult to come by. Some knapsack sprayers have a pressure regulator built. This would be better. Best would be to have both regulator and gauge. - A small paper is now being written on how to best calibrate the Taiwanese type sprayer without gauge or regulator for both small and large sized research plots.

-- When Mr. George Malchor leaves for graduate studies Mr. Padilla (presently business manager) will probably assume the position of Director of the MICPC.

-- Travel arrangements have been made for Lopez, Padilla and one other plant protection officer (Palalimpa, Mulat or Anay) to

attend the Fourth Mindanao Weed Science Workshop soon in Davao City. Lopez will participate as resource person; the other two as trainees.

-- The MRCPC has recently reorganized their program into three main thrusts of research, extension and training. Their projected activities for 1979 include weed science in all three of these. Part of the extension efforts will be on the radio and plans for joint MRCPC/CMU participation in plant protection education through CMU's new radio station (on the air already) have been made.

-- More experiment data could have been obtained for analyses if there had been electricity at Valencia to operate the photocopy machine. There is no electricity at CMU. There was not time to make the two hour round trip to Malaybalay for copies.

At CMU:

-- Weed Science colleague Pat Elliot has just finished harvesting his masters thesis land preparation/weed control expt. Since it was planted October 9, it escaped the full effects of the drought. Other problems, however, included whole maggot at about 30 DAS controlled by Turadan and some stem borer at 45 - 50 DAS still controlled by the Turadan. Therefore, yields will probably not match those of the previous dry season when we had 4 - 4.5 t/ha

where weeds were controlled and fertilizer was applied. From Pat's expt. we should obtain good information on effect of land preparation, various weed control treatments (including stale seedbed) and fertilizer on corn yield. Data from this trial includes: corn stand counts (early and at harvest), visual evaluations on weed control and corn vigor, weed weights and counts, weeding times and yields. Colored slides were taken of the corn production (labelled piles of corn from each plot) from five of the 12 treatments. - The other trials were pretty much lost. The season long weed control trial was abandoned early because the hybrid seed did not germinate. The weed control systems trial was planted much later than Elliot's trial so it dried up. Only visual evaluations, weed weights and weed counts were obtained from this last trial. - Some data were obtained from Elliot's land preparation trial for subsequent analyses in Corvallis (IPPC). -- Plans are already outlined for the next season's weed control expts. In addition to Elliot's trial (to be improved and reduced in size as suggested by his advisor Dr. Enrique Paller, UPLB and by me), colleagues Margate and Elliot will establish a season long and systems trial each. All these have been already approved by the CHU Research Council. Mr. Roy Bagares will continue as field research aide. Fortunately, CHU will be hiring him officially at about the time I leave the Philippines so we do have continuity in research and Bagares has employment.

-- Mr. Margate will possibly go on for his Ph.D. in weed science sometime this year. This will probably not create too much of a problem to the weed research program at CMU since Elliot is very enthusiastic and is doing a good job in his research and also teaching the weed science course of 28 students.

-- Elliot was also able to obtain the same types of knapsack sprayer delivery data (like Lopez at MRCPC and also from a field surface prepared for herbicide application). - Hopefully, all these data will be useful for IPPC's upcoming publication on knapsack sprayers.

-- Margate and Elliot are also preparing two papers for the FCCP conference in May, covering our cooperative research to date.

-- Probably four from CMU will be attending the Davao City Workshop: Margate and Elliot as resource persons and Mr. Bagares and Mr. Lao-ay (CMU corn agri-business project) Their travel arrangements have been made through CMU.

-- CMU is serious about an "aguingay" campaign aimed at preventing its spread and controlling it. Two meetings were held with Dr. Goodell, Margate and Elliott. To begin with, a radio program interview with Mr. Margate will be on the air this week. Jointly, we drew up layman's (farmer's) answers to 26

questions on "aguingay" from its description, to prevention and indications on its control - especially means that the farmer can afford. The interview will be repeated and new ones will be developed. Also two field days for farmers and technicians are being formed. The idea is to stress concerted effort by the farmers, government, industry, etc. in one area to serve as a pilot project. A proper site and adequate support is being sought now.

At Davao City:

-- I visited the Bago-Oshiro Expt. Station site with Reg. XI BPI Director Alex Yadao and Sta., Superintendent Luis Petrache. The B-O station will be adequate for the Fourth Mindanao Weed Science Workshop, March 19-23, 1979. Yadao will be the overall director of the workshop while Petrache will be the coordinator at the station. A Mr. Gandia will be Davao City BPI coordinator and I will be overall coordinator. Enthusiasm is high and I feel the myriad of details can be adequately worked out. Individual responsibilities were delegated. About 35 trainees are expected as well as 11 - 12 resource persons. I will make one more trip prior to the workshop to install the evaluation demonstrations.

At Cagayan de Oro:

-- Both coming and going I visited with BPI Reg. X personnel.

Current and future weed research and training were discussed with Director De Guzman and others. Reg. X BPI expects to send about 8-9 personnel to the 4th workshop in Davao City, most as trainees.

-- Although officed at Cagayan I had met Joel Lumagbas of CIBA-GEIGY at CMU and then we proceeded to the MRCPC. He had just tested more Phil-Hybrid, Inc. hybrid corn seed at CMU which gave 20% germination. Others (including us) also had the same poor results. According to Lumagbas the above company went under. The Ayala Group will be handling hybrids now. - Lumagbas will be resource person at the Davao City workshop (also his 4th cooperation with us) and Mr. Wolf Dinnendahl of CIBA-GEIGY (Manila) will present a lecture/film on correct herbicide application there.

-- Neither Dr. Frank Aclan or Dr. Russ Sagaral of the Weed Science Section of the Dept. of Agronomy, IU were there when I passed by. I had wanted to ask about the possible support of the Weed Science Society of Mindanao toward the fourth workshop at Davao City. (This would probably be minimal.) Mr. Dalapag will probably attend.