

IPM CRSP Trip Report

Country(s) Visited: Dominican Republic

Dates of Travel: May 3-7, 2011

Travelers Names and Affiliations: J. Alwang and G. Norton (VaTech), S. Weller (Purdue), B. Gugino (Penn State), J. Brown (Arizona), V. Barrera and J. Ochoa (INIAP, Ecuador), Hernan Espinoza (FHIA, Honduras), Marcos Arevalo (Agroexpertos, Guatemala).

Purpose of Trip: To supervise ongoing research in the Dominican Republic (DR), to review research progress from the LAC Countries and participating universities, and to plan for following year activities.

Sites Visited: IDIAF (Santo Domingo), San Jose de Ocoa (field site in Western DR), Sabana Larga Experiment Station in San Jose de Ocoa, CENTA (Center for Agricultural Technology, IDIAF laboratory in Santo Domingo), USAID Santo Domingo.

Description of Activities/Observations:

Day 1 (May 4):

(i) Overview of current activities and progress. Presentations by each country team (DR, Ecuador, Honduras and Guatemala). This four-hour session involved feedback and discussions by participants. Substantial progress has been made toward developing IPM packages for Andean Fruits and potatoes in Ecuador. Priority problems have been identified in Honduras and some progress has been made toward developing and testing IPM components. Work has begun in the DR and Guatemala. There is need to improve the focus of the research on developing and testing IPM packages for priority crops. We also observed that in Honduras, Guatemala, and DR we would like to see more work on farmer fields.

(ii) Presentations by global themes (viruses, disease diagnostic network, impact) and US universities. Several areas of collaboration across countries and universities were identified and discussed. Alwang presented the calendar of activities and emphasized the importance of completing PERSUAPs for all the countries in the LAC region.

(iii) Planning for subsequent year activities. Individual country teams discussed plans and how they were affected by the morning debates. Teams were charged with preparing a presentation to the plenary on May 6.

Day 2 (May 5):

Field trip to observe ongoing experiments. Several farms were visited in an area where IDIAF is focusing its experiment station research. The IDIAF team noted that on-farm trials were not being conducted and that much energy had been expended in identifying farmers who would potentially collaborate with the CRSP. The team first visited a greenhouse production facility where the owner was engaged in pepper production. Discussions were held with the grower who seemed to be aware of potential problems (it was the first cycle of production) but unaware of solutions. The IDIAF team noted that most producers in the area are entirely dependent on pesticides and received much of their information from chemical dealers. Viruses and soil-borne pathogens could clearly cause problems in this greenhouse in the future. Market access was also identified as a problem as the producer reported receiving very low and volatile prices from a local intermediary. The producer demonstrated artisanal production of creosote from green wood—he claimed the product repelled insects. The IDIAF team took a sample of the product for testing in Santo Domingo.

Another farmer was visited (Jose Ortiz). The farmer seemed to be confident in his knowledge of production practices and stated that he would deal with any problems by spraying. IDIAF researchers noted that a substantial problem in the area is finding farmers willing to conduct on-field trials.

A second tomato farm was visited where severe fungal and viral problems were observed. The producer was using a form of high-pressure drip irrigation and the irrigation holes were pointed upward, wetting the plants and surely contributing to the disease problem. The grower was unavailable therefore we were unable to determine if the grower was aware of the potential negative impact this practice may have on both produce quantity and quality. Proper use of drip irrigation directs the water at a low pressure towards the soil reducing leaf wetness and therefore favorable conditions for disease development.

The team visited the Sabana Larga experiment station where IPM CRSP trials are being conducted. One trial was set up to examine the impacts of mulching and solarization on soil-borne pathogens (primarily *Fusarium oxysporum*). However, the degree of *Fusarium* infestation was not known prior to initiation of the experiment, so it is unclear whether the results will be of much use. It was suggested that infesting the soil with the pathogen would be one way to ensure a more uniform

distribution of the pathogen in the soil. Gugino will work with the DR team to identify *Fusarium oxysporum* races. A second demonstration plot was partially set up to examine the impacts of exotic plants on the attraction of beneficial insects. None of the attractants had been installed at the time of the visit and the team noted that one of them was actually the noxious invasive weed *Parthineum hysterophorus*. This information was conveyed to the IDIAF team. All of the experiments were in premature stages and the team was able to make constructive suggestions to improve them. Ms. Martinez (the IPM CRSP coordinator in DR) observed that they need more personnel to manage these experiments. She was told that it was up to her to do the budgeting to ensure proper management.

Day 3 (May 6):

Planning meeting at CENTA. Each country team presented its tentative plans for work in the subsequent year. There was a consensus that it was not appropriate for any country to state that it will just continue doing what it had been doing in the prior year.

Recommendations:

Ecuador will continue to work toward refining its practices. Alwang and Norton will focus on ensuring that the work continues as planned. It is hoped that some of the focus of Penn State will move from Ecuador toward support of research activities in the Dominican Republic.

Honduras will focus on priority pests and diseases in potatoes, peppers and tomatoes. Its main priorities are in addressing zebra chip disease, the life-cycle of the tomato-potato psyllid that vectors it, and viral (mostly insect-vectored) and soil-borne diseases. Efforts will also be made to increase the presence of experiments on farmer fields. Weller and Brown will interact with the country team to ensure that the workplan is focused toward developing IPM packages by year 4.

Guatemala will continue to develop its research plan, focusing on potatoes, peppers and tomatoes. The pest problems to focus on include *Candidatus liberibactor* bacterium (causal agent of potato zebra chip), *Fusarium* spp., *Ralstonia solanacearum* (causal agent of bacterial wilt of tomato/potato) and insect-vectored viruses. The team expressed a strong need to better understand the experimental treatments and to expand the experimental work beyond diagnosis (particularly of viruses) toward potential practices (hence the need to identify potential treatments). The team also expressed interest in seeing more work done on farmer fields. The subsequent year's planning meeting will be held in Guatemala. Brown will work closely with the Guatemala team.

Dominican Republic will conduct a review of the current state of knowledge of IPM practices in peppers and tomatoes and produce a summary manual based on what is known and as possible, will direct resources to address what is not known.

Researchable objectives will concentrate on viruses (primarily insect-vectored) and soil-borne pathogens. It will establish experiments in farmer fields to complement experiment-station work and serve as demonstration trials for farmer outreach. It will also examine the potential of using undergraduate students at local universities to facilitate research. Gugino and Weller will take lead responsibility in overseeing the planning process.

Team toured the well-equipped labs at CENTA.

Alwang, Norton, Weller, Gugino, Barrera and Ochoa visited Dr. Duty Greene, the agricultural policy advisor at the USAID mission. Dr. Greene was briefed on the IPM CRSP activities and gave an overview of USAID activities related to horticulture production and marketing in the DR. USAID is funding a large 5 year \$20 million + project run by ABT associates designed to develop market value chains in a number of areas, one of which is horticultural crops. This project is working in the same area of the country as the IPM CRSP and Dr. Greene strongly recommended that the DR country team contact the project director, Dr. Jesus de los Santos (PhD, Agricultural Economics, Virginia Tech) to coordinate activities. Dr. Greene also suggested that the Instituto Superior de Agricultura (ISA—in Santiago, DR) would be a good focal point to link the IPM CRSP work with a local university. This would allow broader participation and the possible inclusion of undergraduate research interns (tesistas). The team conveyed this message to Ms. Martinez.

Suggestions, Recommendations, and/or Follow-up Items:

Weller and Gugino will transmit IPM programs from the US to the DR and other LAC country teams.

Espinoza will transmit the curriculum for FHIA's IPM training program to the DR and other LAC country teams.

Martinez will follow up by contacting and setting up a meeting with Dr. de los Santos. She will also contact ISA to open linkages and explore the possible involvement of tesistas in the CRSP research program.

All country teams will immediately contact Dr. Amer Fayad (IPM CRSP ME) and provide him with the information he needs to complete the PERSUAPs for each country.

Draft workplans will be sent to Alwang by no later than July 7. These workplans will contain a clear prioritization of activities design to move the programs toward production of IPM packages by the end of the projects. They will also make clear that some of the experimental work in each country will be conducted on farmer fields.

Cost of production data will be collected for all experiments on farmer fields.

International travel requests will be submitted to Alwang along with the workplans.

Alwang will provide a link between the USDA Beltsville Perennial Crops Laboratory and FHIA. The USDA laboratory is working with cacao and FHIA has a growing program in this area.

Alwang will inquire about whether Zamorano (Honduras) can take leadership in social sciences and gender for Honduras and Guatemala. Neither FHIA nor the Guatemala team has the capability to do social science work, and Yordana Valenzuela at Zamorano has this capability.

Guatemala will send survey questionnaires related to social science questions to Alwang.

Guatemala will expedite process of MS student applying to University of Arizona. Student has yet to submit application, GRE or TOEFL scores.

List of Contacts Made:

Name	Title/Organization	Contact Info (address, phone, email)
Dr. Duty Greene	USAID	
Dr. Genaro Reinoso	Director, CENTA	
Dr. Rafael Perez	Director, IDIAF	