

IPM CRSP Trip Reports

Country(s) Visited: Guatemala

Dates of Travel: July 7-11, 2008

Travelers Names and Affiliations: Carrie Lapaire Harmon, University of Florida; Sue Tolin, Virginia Polytechnic and State University

Purpose of Trip: Augment plant disease and pest diagnostic capacity within the Central American and Caribbean laboratories.

Sites Visited: Universidad Del Vale, Guatemala City, Universidad Rafael Landivar, Guatemala City, AgroExpertos, Guatemala City

Description of Activities/Observations:

This trip was supported primarily by the IPM CRSP South and Central America regional program and Diagnostics Global Theme. Southern Plant Diagnostic Network and Universidades Landivar and DeIVale provided additional support.

Diagnosing plant problems through training and participation in the International Plant Diagnostic Network (IPDN) is an IPM-CRSP global theme, funded in part by USAID. In support of this mission, Marco Arevalo organized a week-long training session (agenda included below) for more than two dozen diagnostic personnel (participant list included below; seven women, twenty-six men, exclusive of speakers/organizers) from Honduras, El Salvador, Jamaica, and Guatemala. Instructors from Universidad Del Valle (Guatemala), Universidad Rafael Landivar (Guatemala), FHIA (Honduras), Virginia Tech (USA), and the University of Florida offered training in

- fungal plant pathogens
- diagnostic networks
- plant nematodes
- plant viruses, bacteria such as *Ralstonia solanacearum*
- digital diagnostic and communication systems (DDIS, Skype)
- plant parasitic insects
- development of Standard Operating Protocols (SOPs) for plant diagnostics

Hands-on learning included

- field sampling and diagnosis
- laboratory sections in sample processing for fungi and other plant pests
- digital photography for distance diagnostics
- virus diagnostics (ELISA, Immunostrip, inclusion bodies, and PCR)

On-site learning included

- Tour and demonstrations at the Mediterranean Fruit Fly facility (Programma MoscaMed)
- Field visit to Escuela Nacional Central de Agricultura (ENCA) vegetable and fruit production fields

Translation for the English-language presentations was provided by Isabel Arias, Marco Arevalo, Cristina Bailey, and Margarita Palmieri. Participants were encouraged to interact with questions and exchange of diagnostic protocols and experiences. Productive discussions occurred regarding sample management, sample form completion, communications, and diagnosis and identification of fungi, bacteria, viruses, insects, and nematodes. Following the SOPs presentation, participants discussed the need for standardization of diagnostics across Central America and the Caribbean. Several participants indicated they would begin developing SOPs for Central American pests and diseases (one specific case included the possible development of a full SOP for all diseases and insect pests of coffee).

Observations/Recommendations: Following this introductory session, training is needed in specific identification of Central American diseases, insects, and nematodes. This specialized training, to include hands-on identification would be most productive in small groups, perhaps led by Central American and/or international experts. Distance education could be helpful for some introductory lessons, but full hands-on microscopic, immunologic, and molecular techniques would be preferable, especially with fresh samples. Funding for such training may need to come from a collective effort in Central America. Joining Caribbean and/or South American efforts may increase the likelihood of funding. For the current training in Guatemala, most of the travel for the participants was covered through IPM CRSP funding (see participant list, below, IPM CRSP funded participants marked with *).

Agenda

<u>Date</u>	<u>Activity</u>	<u>Speaker</u>
July 7, Monday	Welcome and introductions	<u>Marco Arevalo</u>
	IPM-CRSP Global Theme, IPDN	<u>Marco Arevalo</u>
	The Functions of NPDN in the US	<u>Carrie Harmon</u>
	Break	
	Diagnosis of Plant Pathogenic Fungi	<u>Carrie Harmon</u>
	Biology and ID of fungi of economic importance to Central America	<u>Marco Arevalo</u>
	Lunch	
	Biology and Identification of important bacterial diseases in Central America	<u>Marco Arevalo</u>
	Biology and ID of <i>Ralstonia solanacearum</i>	<u>Edin Orozco</u>
	Break	
	Biology and taxonomy of fruit flies	<u>Ronaldo Perez</u>
July 8, Tuesday	Board bus for field trips	
	Visit the facility for the Mediterranean Fruit Fly Eradication Program (MoscaMed)	<u>Ronaldo Perez</u>

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- 30. *Edin Orozco USAC, Guatemala



Observation of pupae screening, MoscaMed. Skype conversation and DDIS w/ S. Miller.



Virus sample preparation

Field observation and sampling

