

**Report on Trip to Costa Rica  
January 11 - 17, 1998**

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SM-CRSP Project *Decision Aids for Integrated Soil Nutrient Management*

**Travel Team:**

Lloyd Hossner - Texas A&M University

Anthony Juo - Texas A&M University

**Objectives:**

This travel was initiated to review current projects associated with the Soil Management CRSP in Costa Rica and Nicaragua and to determine the feasibility of additional collaborative programs in those countries.

**Report:**

The first four days in Costa Rica were at the La Selva Station of the Organization of Tropical Studies (OTS) about two hours northeast of San Jose. The La Selva Station is located in the northern part of the largest Tropical Rain Forest Reserve (50,000 ha) of Costa Rica. A collaborative agroforestry program with a Texas A&M graduate student, Mr. Rick Wesch, is being initiated with Dr. Eugenio Gonzalez an OTS scientist and Director of Palo Verde Station of OTS, to evaluate the effect of soil properties on the occurrence of leguminous trees in a wet tropical forest and a dry tropical forest. Dr. Gonzalez received the Ph.D. degree from Texas A&M University with Dr. Richard Fisher. Mr. Rick Wesch will conduct the research and a portion of the visit was to orient and place Mr. Wesch at his research sites. Studies will be conducted in a native forest site and a secondary growth forest site at La Selva. Soil samples were collected from prospective transect locations and some preliminary analyses conducted in the laboratory. We met with Dr. Orlando Vargas who is the resident forest ecologist and skilled in identification and classification of tropical forest species. He is a resource person who will collaborate with the project as needed.

Dr. Tamia Brenes Argvedas is the head of the analytical laboratory. She has an excellent laboratory facility and some good laboratory equipment, however, much of the equipment appears to be inoperable or unused for some time. She is working on the GIS system that has been developed for the La Selva forest preserve.

We also met with Dr. Clark, a former director of La Selva (with her husband). They have developed a soil classification system for La Selva based largely on soil color and texture. She would be interested in any soil chemical analyses that would assist her in her work. She has a good working knowledge of the La Selva forest reserve and should be a good resource person. During the visit we were oriented on several on-going agroforestry experiments which have been designed to select and use native tree species for commercial plantations.

Upon leaving La Selva, we visited the University of Costa Rica and the Soil Management CRSP collaborative research site for the IntDSS project near El Tigre, Costa Rica. The site is located in a large commercial peach palm plantation where there is a need for research on nutrient requirements and nutrient cycling. Many of the small farmers in the region are also interested in

contracting for peach palm production and they do not have data to support fertilization and management practices. There are apparently documented yield responses to nitrogen, phosphorus, potassium, and calcium. More research is needed to fine tune these practices if the small producers are to get into the production of peach palm. We were met there by Dr. Alfredo Alvarado of the University of Costa Rica and two of his graduate students. He received a Ph.D. from North Carolina State University with Dr. Stan Buol. We toured the main plantation and were given a demonstration by the plantation's staff on peach palm management and harvest.

While in San Jose, we visited the Center for Agricultural Research at the University of Costa Rica, headed by Alfredo Alvarado. He is building an excellent faculty and adding to the facilities where possible. They have an extensive soil and plant testing laboratory, soil chemistry, fertility and physics laboratories, and a number of plant scientists, including crop physiologists and a crop management program. In addition, they will contract for special projects when they have the personnel and resources to conduct the research. Dr. Alfredo Alvarado will be an excellent local contact and collaborator with the Soil Management CRSP.

We then traveled to OTS Palo Verde Station in the northern part of Costa Rica. The station is located in the Palo Verde National Forest Preserve, about 4 hours northwest of San Jose by car. Dr. Eugenio Gonzalez is Director of OTS Palo Verde Station. This region represents the tropical dry forest ecology and Alfisols derived from limestone. Leguminous trees in the primary and secondary growth forests were identified and soil samples collected at the proposed research sites to generate some preliminary data for the research study.

Drs. Juo and Hossner returned to San Jose on Saturday, January 17 with plans to fly to Nicaragua the following day. Unfortunately our belongings (airline tickets, cameras, clothing, etc) were stolen from the trunk of a rental car while we had lunch in Alejuela, a town near the international airport, so we were forced to cancel the Nicaragua leg of the trip as originally planned. We will plan to visit the commodity groups, farmers in Nicaragua and a potential CRSP sites at a future date. We spent the rest of the day filing a police report and replacing airline tickets for the trip to College Station.

We returned to College Station on Sunday, January 18.

**List of Contacts:**

*University of Costa Rica*

Dr. Alfredo Alvarado, Soil Scientist

*Organization of Tropical Studies (OTS)*

Pablo Arroyo, Forest Ecologist

Dr. Eugenio Gonzalez, Director & Forest Ecologist

Tamia Brenes Argvedas, Lab Manager - La Selva Research Station (OTS)

Orlando Vargas, Forest Ecologist - La Selva Research Station

*Texas A&M University*

Rick Wesch, Graduate Student