



Sustainable Agriculture and Natural Resource Management Collaborative Research Support Program

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Trip Report: Ecuador

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Purpose of Trip: Participatory Assessment of potential SANREM sites, also individual assessment of potential farmer cooperators for severity of disease problems in crops, and other encumbrances that were affecting farm profitability/sustainability.

Sites Visited: Bucay and Guarana, Ecuador

Description of activities:

The group landed in Quito on June 25th, and the next morning traveled to the INIAP station at Santa Catalina, not far from Quito. After a brief stop to pick-up counterparts, and supplies, we traveled to the high country near the headwaters of the Chimbo River and close by to Mount Chimborazo. Later, we would visit, mid and low altitude areas, and finally spend the last day in the lowlands of the Chimbo. The key purpose for this trip was to assess farming practices, determine what key issues were preventing economic success, and develop practices that would add to the sustainability of local people, their communities and their environment. I left from Guayaquil on July 1.

Observations: Typical farms in the highlands area were above 3300 m, and were growing potato, fava bean or barley, and there was also some land used for pasture of sheep or cattle. Observations came from the region near the town of Codiac. Generally, all crops observed were carrying a fairly high level of plant disease. Potato had little foliage disease (the area had been in dry season for at least 2 months), but did show signs of virus. However, faba beans and barley had high levels of foliage disease, often with more than 50% of leaves showing disease symptoms. All crops grown by the indigenous people were typically from seed that were carried from previous crops, and likely were land races rather than improved varieties. Land holdings were usually less than 5 ha, and were likely averaging 2.5 to 3 ha. Soils were high in organic matter, and were being fertilized with 10-30-10 fertilizer. Marketing of production was achieved by shipping 40 km to Guarana using commercial transportation. Soils were deep (1-3 m), and not severely susceptible to erosion, even when plantings were made on severe slopes. Irrigation was found throughout the region and was in regular use during the dry season. No farmer owned marketing cooperatives were found in this brief visit. Tractors and plows were sometimes rented to break land. Spraying and fertilizing were done by hand.

In the mid-altitudes around Guarana, particularly in the area of San Simon, (2,500-3,000 m) a large portion of the land was producing soft corn, while there were also large areas devoted to potato, and small grains. Eucalyptus was frequently grown as a windbreak. It was also cut into boards on site (with a chain saw!) to provide cash income. Smaller plantings of squash, melons and peas were common. There were local grain mills that provided value added to farmers. All crops seemed to be derived from local land races, and were seen to have significant problems with viruses and foliage disease. Crops were planted from seed withheld from the previous crop, which may explain some of the virus problems that were observed. Nematodes and soil borne diseases were not severe, and were not observed in this area.

Due to transportation issues, I was unable to travel to the lower altitude region (1000-2500 m) near Chillanes. Here again, there was a large proportion of the land that was in maize production, bean production and more. Disease problems were reported to me (bean root rots) as the most severe of the 3 regional locations. Rusts and Ascochyta were reported to be damaging. Soils were being badly eroded, and many farming practices were failing to preserve these soils. This area along with the highlands was selected as a prime research location at a meeting of SANREM participants.

A few km further down the Chimbo river, near the town of Bucay we (with Ing. Danilo Vera from INIAP Pichelingue, Wills Flowers and Jonathan Lynch from SANREM) examined locations that would meet the objectives of the SANREM CRSP. Still in the Chimbo drainage, we were looking for cacao and plantain cropping systems that were being well managed, and offered potential to serve as examples for nearby producers. An organic producer near the village of San Joaquin (Guayas prov.) had all key diseases of cacao with black pod at high levels. Also, the bananas and plantains were showing significant levels of Sigatoka disease. There were also bananas that were falling over, and might indicate nematodes and/or root rots were active. This land was removed from forest only 4 years earlier, and thus was easy for the farmer to certify. No premiums are presently being paid to the grower for organic certification, and the organic growers group was unable to help. This location will likely be a research location for our lowland research, and an additional site nearby will also be developed. It would also be a good site for those interested in market development.

Suggestions and Recommendations (as appropriate):

The locations visited point to some central themes. The crops grown are frequently land races that could easily be improved by finding improved selections that are both high yielding and virus free. The corn for example often produced only one cob per stalk, and that one was often undersized. Potato fields frequently had many plants exhibiting virus symptoms. Cropping density adjustments and clean seed of improved selections could greatly enhance profitability and sustainability for most of the crops. We plan to compare diseases of cacao on land of different altitudes, slopes, etc. Quick observations support a hypothesis that sloping lands have better air drainage, reducing infection periods for pathogens. This work would be conducted with Ing. Vera. Certainly, the marketing of crops through grower coops or marketing groups could greatly help in profitability. In Bucay, the cacao had all three major diseases, black pod witch's broom and frosty pod. Planting densities, intercropping systems, and pruning schedules should be developed. Marketing systems should also be developed so that farmers recover more of the dock-side value.

Future Needs: With limited resources from SANREM CRSP, I will concentrate on work in Chillanes and Bucay areas. I will also be available to assist if pathology needs develop at the highlands site. I will need an INIAP counterpart to facilitate the plant pathology work. An INIAP person from Boliche station might be the best choice since they are so close. Also, Ing. Vera is willing to work with us if he can receive some SANREM support. Regardless, I need to make a trip to Chillanes to better assess the pest problems at that location.

List of Contacts Made:

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