

**John Ogonowski and Doug Bereuter Farmer to Farmer Program
Volunteer Trip Report Cover Sheet**

Name of Volunteer: Richard C. Meunier

Country of Service: Nicaragua

Dates of Trip: March 20, 2011 – April 3, 2011

Many thanks are in order to Partners of the Americas and Farmer to Farmer for the opportunity to represent you in Nicaragua while teaching and demonstrating family gardening.

Additional thanks go to Elisa Estrada Guido who, as FTF field officer, welcomed and assisted me with logistics and scheduling, while expertly driving through cities and countryside with nary a scratch (well maybe one). She cheerfully made introductions, participated in presentations, improved upon my explanations, and participated in hand's on gardening projects while at the end of the day finding an interesting place to eat. Accommodations were always more than adequate.

Our first excursion was to Nandasmo and PIO XII. This trip served as an introduction to Nicaraguan highways, urban and small town landscapes, and a changing topography. Pio XII was instructional to me in that many gardening techniques had already been tried and tested. I did leave some ¼" irrigation hose which may be helpful with dry season watering needs.

The cycle of legume leaves of plants and shrubs fed to rabbits, whose collected manure is converted to compost by California Red Worms, is most impressive. Typically rabbits are not eaten in Nicaragua so expanding this project to other sites would require a change in eating habits. I left some window screen which could be used to separate the red worms in completed compost to a fresh top layer of compostable material i.e., rabbit manure and bedding. Excess screen could be used for neighboring vermiculture projects.

A "chicken tractor" to be used to prepare planting beds was discussed as an alternative to having the enthusiastic neighbor running his horse drawn plow over and through the shallow root systems of fruit trees while preparing an area for a new garden site. Planting of a forage crops during the rainy season could help supply pasture for the chickens while they eat, scratch and till the soil for future raised beds-perhaps too big of a venture but worth considering.

Most impressive were the pits dug in low areas where plant litter had been piled and soaked by rain runoff, thus effortlessly creating compost while preventing soil erosion. This technique was suggested at several other sites during our travels.

Older fruit trees provide shade for lettuce, spinach and plants and trees started in black plastic bags. Such shade was generally lacking at other visited garden sites and should be encouraged.

We also toured neighboring gardens where families had enthusiastically started raised bed gardens. As we found several burn piles along the paths we suggested making a pile, or digging a pit in a low corner of the property to compost these leaves. Some tomato and pepper plants had been planted under shade and transplanting was suggested.

At the farm of Jose Garcia raised beds were planted where he had recently plowed. He promised to water frequently, build trellis on north side, and fence in the area.

SUMMARY of other site visits

RECOMMENDATIONS shared with Hosts	HOST
Suggest reconfiguring compost piles shaped to mimic volcano (flat top or concave top) rather than pyramids for more effective watering.	Camoapa school Camoapa near well @ San Martin
Have two to three compost piles at varying stages of development: fresh; half composted and turned; and one ready to use.	Several
Screen compost whenever possible (¼" worked for us-it's the sized used in concrete work). Screen at least top inch of each bed to improve germination; to eliminate and recycle non- composted greens; to separate and recycle large carbons; and to eliminate inorganic materials such as batteries, glass, and plastic.	Mujeres de la Bahia Several during 2 nd week
When plants such as lettuce, spinach and peas were planted, often in full sun, harvesting early while leaves are tender was suggested. Bolting should be expected which could be a seed collection opportunity.	All communities visited in the second week
Save seeds whenever possible, keeping them in a sealed container in a dark place, such as under a bed.	To everyone
The smaller the pieces of compostable material, the faster the decomposition process.	To most
Especially in summer, consider placing a mulch layer over newly planted seedbeds.	Pio XII; Jinotega; Camoapa
Recommend turning compost at least once per week. Different centers mentioned varied success, mixing from twice daily to never.	To everyone
Scatter small amounts of wood ash in compost pile and on raised beds for ph and insect control. Several had done this.	To most
If the garden is trellised and not accessible from the back, reduce the number of squares in the front to 2 – 3 squares deep in order to reach, care for, and harvest.	-La Bahia learning center. -Casa de la mujer Nuestra Señora de Monserrat-San Martin
Plant small seeds closer to the surface, water and cover with a fine layer of mulch.	To most
Spread heavy layer of ash around the square meter bed to dissuade critters.	Jinotega /Camoapa-school
High heat and frequently turned piles of compost piles versus the convenience of unattended slow composting	To most
Suggestion: rotate squares and do not replant same vegetable in the same square in succession.	To everyone
Use empty, inverted liter pop bottles perforated below the soil surface for plants occupying one square and in the middle of squares with four plants. Bottoms were cut off.	Camoapa-school
In the summer, to assist watering, make a saucer shaped (concave) indentation and plant the seed in the middle of the indentation and carefully water.	All sites 2 nd week
Sprinkle water at least twice a day until the plant emerges. Taper off watering as the plant becomes more established.	To everyone

Vermiculture techniques for compost making and possible sale of worms discussed.	Jinotega @ church Pio XII
Suggested using tree moss called "paste" to cover newly planted seedbeds.	Jinotega Camoapa
Prune off the lower leaves of growing tomato plants to prevent disease.	To everyone
Mulch around the outside perimeter of the raised bed with dry material such as: dry/chopped leaves or similar material to prevent the evaporation of water and over heating of raised bed.	Camoapa
Add at least two handfuls of compost to each square after harvest to replenish lost nutrients or to improve the original soil, which may have lacked sufficient compost to begin with.	To everyone
Mention the possibility of small sticks and large debris for the bottom layer of compost piles for better ventilation. Also recommended jabbing a bar or shovel into extremely hard soil to loosen and aerate it before laying down a layer of compost.	RIVAS-Bahia learning center Jinotega-Datanli
Bean rows closer together or 9 plants/Sq. Use irrigation hose; keep up the good work.	Pio XII
More sun for tomatoes and peppers. Achieve hotter compost for weed control. Water new plants. Great job of fencing and shading new plants with palm leaves. Tin for sides may limit air movement-possible leaf problems.	Mujeres de la Bahia-am.
¼" screen used for sifting compost; divided compost; distributed seeds	Mujeres de la Bahia-am
Guide scarlet runner; sift compost; distribute seeds; continue good work	Angelita Lopez
Keep watering; top dress with mulch; ashes on remaining beds; dig ditch(s) for run-off; water plastic bags for tree seeds and wait two weeks for further composting-meanwhile build roof to shade future tree seedlings.	Camoapa-school
Water compost-flattening top of pile; Build square meter raised bed before next visit, fencing out animals; compost rather than burn leaves	Camoapa-home
Top dress new plants w/ compost; water; mulch; protect; & make more compost.	Camoapa-school
Large quantities of weeds in garden plots indicated not composted manure in soil and/or composting done at low temperatures; new plants look good, but grass and weed must be pulled now.	RIVAS- Bahia learning center
Significant amounts of non composted manure in area chosen for raised bed; keep watering; watch for weeds; mulch seed bed; build trellis; general consensus that peppers were damaged during daytime spraying- keep well watered; hope for the best; destroy and burn 'beyond hope' plants.	RIVAS-last stop/near wasp nest

PROFESIONAL MANAGEMENT SUGGESTIONS

2-3 square meter gardens One for shade needy vegetables One for sun tolerant vegetables Possibly a third square meter garden for seed saving purposes.
Screen compost whenever possible. For this purpose one large sifter made of ¼" screen was purchased and is with the Managua, Nicaragua office. Additional ¼" screening was purchased to make portable sifters for demonstration purposes.
Idea: have miniature models showing shading and trellising techniques or a few more laminated photos showing examples.

Have a list of in-country resources available to “Farmer to Farmer” personnel such as “Plant Doctors” to assist with on-site questions that may arise.
Reinforce the need to have compost ready before volunteer’s arrival.
Consider designating a square meter specifically for seed saving. It seems to me that just leaving a plant or two per square for seed saving makes it hard to replant and rotate squares.
Green banana plant parts should decompose when finely chopped and when mixed as a small percentage of the total mix. Screening will eliminate them if they’re a problem.
Advise those digging pits for composting to make them long enough to allow access for “turning”.
Publish additional copies of the list of home remedies to control pests to have as handouts.
General observations about Organic Material: - Scarcity of greens to mix with carbon noted. - plenty of browns (leaves/carbon material) to be found. The main task is to chop this debris into small sizes before layering or mixing and watering. - Often this plant debris is not near the proposed garden plot, so temporary piles of browns in mounds or in pits will begin the decomposing process. Watering, rain, and adding soil and green material will speed the process. The alternative is to transport large amounts of dry material rather than small quantities of compost.
Ask to have an animal exclusion strategy planned before “Farmer to Farmer” volunteers arrive.
Provide simple ph testing kit to FTF volunteer for in-country use for data collection and for future recommendations, especially quantity of ash to add.
Divide seed packets placing smaller amounts of seeds into labeled plastic bags or small envelopes, and if possible before the frenzy of planting or seed distribution begins.
Color code squash/zucchini/ pumpkin/ packets one color each for: cucurbita(C. maxima); C. pepo; C. moschata; and C. ficitioia. Tell home gardeners to plant only one variety of each color to prevent cross-pollination so that seeds can be saved.
Change the terminology from “square foot” to “square meter” in the FTF literature.
Have a portable reference library in the Partners in America office that includes pest control information. Include Puesto para Plants (Plant Doctors-Mobile plant clinics) 31 fact sheets-“ 31 hojas volantes”
INTA-Instituto Nicaraguence de Tecnologia Agropecuaria, personal are reported to have seed saving experience.
Create a planting calendar by season and/or month (It was suggested that we may have been a month late with some of our vegetable planting) -PRIMERA starts with the rainy season in May-corn and bean are planted -POSTRERA starts the dry season in August and September –carrots & beets -APONTE is before the rainy season (Nov/Dec/Jan) Carrots and beets take 90 days. Tomatoes and potatoes are problematic in the rainy season and cabbage in summer. The accuracy of this info needs checking and altitude makes a difference, but the point is a ‘planting calendar’ would be most helpful.
Increase the number of laminated squares with pictures of additional vegetables and their correct spacing.
Question: Some chilies are perennials. How long might that square be occupied?
Needed: shrub and fruit tree recommendations to complement shade requiring vegetables in square meter gardens.

<p>Metal mosquito/window screening can be used to harvest worms by placing it over the hungry worm filled, digested compost. Adding a 2" layer of new food (especially manure) and covering it with dark plastic or wet burlap bags encourages 80 % of the worms to pass through the screen while seeking fresh food. After several days the screen holding worms and bate food can be transported to their new food supply.</p> <p>Two meters/yards of metal window screening were left at the Managua office for use or demonstration purposes.</p>
<p>Coffee plant pruned suckers work well to mark square meter garden boundaries and squares.</p>
<p>Suggest that host groups write letters to INTA and to Seed Savers of Decorah, IA, making specific requests for a volunteer to teach seed saving techniques.</p>
<p>When presenting the remedies that use tobacco, make mention of precautions to take while handling.</p>
<p>Have as much of the 3 ringed binder that I left at FTF office TRANSLATED into Spanish as is necessary.</p>
<p>TRANSLATE the table of greens, carbons, and the "Don't Use" into Spanish.</p>
<p>We used much of the seed I brought, as well as some brought by Arlen Albrecht. We have no onion or cabbage seed left, not much pepper or indeterminate tomato seed, and cucumbers we often requested. There remains an abundance amount of radish, bean, pea, and large squash and pumpkins, as well as exotic vegetable seeds of many kinds.</p> <p>Chile (hot) peppers are in demand, in part because they are easier to grow than bell peppers.</p> <p>Chives (cebollinos) are desired-how about as borders?</p>
<p>Compost tea should be recommended for the vegetable beds with little or no compost. A foliar spraying when the plants begin to blossom should help. For plants with bigger problems removing the sprayer nozzle (tip), pushing it into the root area, and giving the plant a direct shot was suggested by experienced personal at Selva Negra near Matagalpa. At the office, I left some manure tea recipes.</p>
<p>Lots of organic growing and experimentation is taking place at Selva Negra and it's a great place to spend the weekend.</p>
<p>How do we save beet seed in the tropics? The literature is not helpful or promising.</p>
<p>Investigate exchange of information and experience possibilities with FABRETTO of northern Nicaragua</p>
<p>I received free seeds from Seed Savers (Herman's Garden-include \$10 for shipping) and Seed Solutions-former L. L. Olds who have boxes of 1000 packets of year old seed.</p>

In conclusion: I had a terrific experience, was treated very well, and was given the impression that my efforts were appreciated. There is the concern that the weather or conditions will not always be kind to those recently planted seeds, but it is my hope that many (most) will flourish under the tender care of the many enthusiastic children, men and especially the women who worked hard to learn, prepare seed beds, plant, water, and promise to care for the plants they hope to harvest for their families kitchen table. Two months more of carrying water is a lot to ask, but at every visit I encountered enthusiastic people who were determined to improve the diets of their families. A big challenge will be rainy season pest problems and the difficulty of harvesting and preserving seed. Hopefully other volunteers will be available and able to provide guidance. For my part I hope that I did no harm in my attempts to be instructive. Personally I benefitted greatly from this Nicaraguan experience and hope that in a few short weeks the families in the communities I visited will feel the same.

Respectfully submitted,

Richard Meunier
FTF VOLUNTEER

April 18, 2011