

# **Treasure Beach Ital Farmers Association Organic Agriculture Improvement Project**

**Farmer to Farmer Volunteer: Thomas D. Syverud,  
Extension and Outreach Educator, University of Wisconsin-Madison,  
Treasure Beach, Jamaica, September 4 to 18, 2006**

## **BACKGROUND**

### **Assignment Purpose:**

**To increase the awareness and understanding of organic production practices and organic pest control strategies of the members in the Treasure Beach Ital Farmers Association. Increasing the group's level of proficiency in organic farming will improve returns to the individual growers and provide a safe, natural, quality product to the restaurant clientele and the public consumer alike. This in turn will increase the credibility of organic farming in the area, attracting more producers to transition to organic production. The main contact for this project in Treasure Beach, Jamaica was; Liz Anton, lizanton@aol.com She will be the Director of the Treasure Beach Ital Farmers Association until September 30, 2006.**

### **Assignment Objectives:**

- 1) Work individually with association members to identify their main pest control and production issues,**
- 2) Study the grower's current production practices, such soil preparation techniques, planting schedules, use of mulches, etc.**
- 3) Learn about the area's agricultural production infrastructure, such as tools, supplies and equipment available, market opportunities and constraints, transportation issues, etc.**
- 4) Develop and deliver an educational program that addresses the main issues of organic production and pest control, in a format that is understood by all in the association, given various levels of educational background.**

### **Background information and observations of current practices for September 2006:**

**Treasure Beach is large area made up of many small communities. Many residents of Treasure Beach proper and the surrounding hills and valleys devote much of their available land to crop production. Land ownership is relatively high and the economy good, based in large part on tourism. The parish of Saint Elizabeth is considered the bread basket of Jamaica for vegetable production. The lowest branch of government is at the parish level, not the town.**

**Many farms raised cattle in the past. However, international market issues and the local economy, which does not allow the consumer to purchase relatively expensive beef, has lead to the virtual disappearance of beef cattle farming in the area. Beef is**

on a few menus, but the main beef eaten is in the inside of a baked bun, called a patty. Chicken, fish, lobster and vegetarian meals are common. The common crops grown by farmers, larger and part-time include the traditional crops of yam, arrowroot, sweet potato, corn, pumpkin, okra, pigeon peas, cassava, eggplant (aubergine) and dasheen or taro. Other cash crops include; cabbage, broccoli, cauliflower, bok choy, tomato (main crop and cherry), sweet and chili peppers, beans (dry and string), carrots, onions, thyme, basil, cilantro, shallots, cucumber, watermelon, cantaloupe, honey dew melons, romaine and leaf lettuce and arugula. Callaloo is an amaranth that is allowed to grow, harvested and used in many dishes including Pepperpot soup, fritters, and as a cooked green vegetable. Used in many tropical countries as a green, amaranth is called michicha in Kenya (Kiswahili), or terere (Kikuyu), in Jamaica it is called callaloo.

It is common to see yards planted to thyme and shallots, a red cultivar is preferred. These are two common, traditional and profitable crops. Most are grown on a part-time basis. Shallots are harvested year around, sometimes up to two years or until the individual bunch gets weaker. Harvesting is done by pulling strong sets off the main bunch. When the remaining sets are too small, a new planting is started, hopefully using crop rotation. However, for an individual farmer enough production crop land can be limited. Thyme is a consistent producer grown in yard areas, without much inputs needed.

The other crops raised under traditional, called commercial, agricultural systems require many inputs. On a daily basis in the morning, it was common to hear the gasoline engine pesticide sprayers operating. Tomatoes, watermelons, cantaloupe, sweet melons, peppers and other lesser crops were sprayed often with a combination of fungicides and insecticides. Some of the pesticides used are no longer available in the United States. Protective equipment is not used. Field corn is raised as a staple, and showed classic nitrogen deficiency.

Fields are small, ranging in size from  $\frac{1}{2}$  to one acre. The main soil type, in the Treasure Beach area, is a red tropical soil, high in clay content, calcareous, high in Aluminum, and shallow. The bedrock was visible in many places; the soil is also highly erosion prone. One form of production is to clear a field of vegetation, mulch and plant after a wait of 30 to 60 days. A local coarse dry grass is often used as mulch for moisture retention and weed control.

The willingness to make the transition to organic was apparent among the growers I met. The reason is to produce vegetables and fruits pesticide free first and foremost. Many of the growers I worked with were Rastafarians. Their strong belief is to raise and eat food that is produced in a natural (ital) way. Many are strict vegetarians, not eating any animal products including fish, dairy, eggs and even honey. Return to the grower/farmer was important, but it was felt that a good price for their produce will follow when the awareness was created. Finally, the cost of inputs, insecticides, fungicides, herbicides and fertilizers are high and could encourage more farmers to transition to organic production. Marketing of the

crops, whether organic or commercial is an important step that needs attention. At this time of year, tourism is low and it is not uncommon to see sweet melons and watermelons just left in the field because the market can not absorb the production. At the same time, because there is no coordinated production, new melons crops are just coming into production. This has a lot to do with the rainy and dry seasons as well.

#### **Some Common Diseases and Insects Observed.**

##### **Yellow Curl Leaf Virus Transmitted by a White Fly:**

This is the worst tomato disease, locally called Curly Leaf. The virus causes stunting of plants, chlorosis, mottling and puckering of leaves, and reduced yield. Feeding by the white fly causes honey due droppings and consequently the development of sooty mold. When infection occurs early, yield can be reduced to zero. A recommendation is the identification of other host plants for white fly and the virus; since those plants may not be the same. Control is best directed at the vector, white fly, early in the growing season. White fly is a weak flyer, so spraying with soapy and/or oil water mixtures, early or late in the day, is a control option. Better yet, spray nymph stage. Complete coverage of upper and lower leaf surfaces is needed. Also a catch crop of beans and tall grass surrounding the fields can be a helpful tool. The catch crop can be burned when the pest numbers are high. The time of year influences white fly numbers, and a planting schedule to avoid this pest should be investigated. Commercial production of tomatoes requires consistent insecticide applications.

##### **Early Blight on Tomatoes;**

It is serious disease of tomatoes. Control is through sanitation, and cultural practices to reduce fungus inoculum's source. Practices such as pruning lower branches, staking plants off the ground, rotation and reducing the number of host plants adjacent to the field and mulching helps.

##### **Cabbage Worm Group:**

All three of the major cabbage worm pests exist in great numbers in Jamaica; Cabbage Looper, Diamond Back Moth larva and the Imported Cabbage Worm. The organic product Bt (*Bacillus thuringiensis*) is available, known about and used when it can be afforded. It is very effective when applied early when the larva are small. Repeat applications are needed after heavy rain or when new foliage growth appears.

##### **Corn Earworm:**

This is a serious pest on corn but also is the Tomato Fruitworm. A few drops of mineral or vegetable oil on the silks reduces the problem on corn. A second type of Bt, different from the cabbage Bt works well, but is not known or available in Jamaica.

##### **Cucumber Beetle:**

Both the striped and spotted cucumber beetle occur in Jamaica, although they are more of a yellowish-green color compared to the northern US. Heavy feeding causes shredded foliage. This insect carries bacterial wilt as well, however I did not observe this disease.

#### **Aster Yellows Complex:**

Aster yellows is caused by a virus-like organism called a phytoplasma. The plant symptoms resemble a virus, stunting, yellowing and mottling. Affected plants observed were marigolds, parsley and carrots. The susceptible plants are many. It appears to not be a serious disease currently; control is best directed at the vector, leafhoppers.

#### **Other Diseases and Insects:**

Aphids are abundant on various crops at various times of the year, depending upon the crop grown and time of year. Different aphids affect different crops. Management is easy by spraying warm soapy water early and often. Aphids can transmit virus diseases as well. Thrips, leafminers, rootworms, grubs and many, many leaf-feeding beetles occur as well, needless to say in this year around warm climate. Slugs are a problem in the wet seasons. There remain many insects and diseases to identify and develop general organic management recommendations for control. For example, I observed many different bacterial leaf spot diseases on Cole crops, tomatoes and melons.

Nitrogen Deficiency was observed on numerous plants, the most important was corn and various grasses. High rainfall and continuous cultivation, lack of a rotation with legumes, and only small amounts of compost available are the reasons for seeing this plant nutrient deficiency.

#### **DISCUSSIONS AND WORKSHOPS HELD/ASSISTANCE PROVIDED:**

On Tuesday September 6 Liz Anton, the Director and I spent the day touring the community of Treasure Beach. One goal was to learn about daily Jamaican life in this community. We visited the internet site, a grocery, bakery and fruit and vegetable stand to buy food for the week, and at the same time, we discussed the Treasure Beach Ital Farmers Association's goals and production problems and what activities were expected of me. We made a brief visit to meet Marlon Campell, an association member as well.

On Wednesday September 7 Liz and I traveled to Junction, a nearby larger city to shop for the ingredients necessary to make the organic spray solutions, and to visit the local agricultural supply store to check what organic products are available. They are not available except for Bt, *Bacillus thuringiensis*, for caterpillars.

On Thursday Sept 8 we conducted a farm visit at the Marlon Campell and Frankie Genus farm. While visiting the fields in the morning, disease and insect problems were discussed. Many of the problems listed above were apparent. After lunch,

**Marlon Campell and I spent an hour or two viewing and discussing the power-point presentation on composting, disease and insect pests and organic pest management. Later we harvested basil and cilantro and delivered them to a buyer at an area restaurant. While we were at dinner, we met with the owner/operator to discuss the project and the grower's association.**

**On Friday September 9 Liz and I spent the day at the internet site. I loaded the new Jamaican insect and disease photos I had recently taken onto the computer and incorporated the best examples into the Organic Pest Management power-point. Liz and I discussed in detail my presentation and prepared for the large group meeting and field day on Monday. Later I continued to develop the presentation.**

**On Monday September 11 we left early, at 6:00 am, and traveled to Allied Farms, Pantrepant, Parish of Trelawny a three hour drive. We met with Adam Miller, the farm manager and the Markus Braun, the director of Organix to discuss the day's plans. I gave a three hour presentation to 31 people (10 women), including organic growers and the production staff at Allied Farms, on the following topics;**

**Soil Fertility: including what are plant nutrients and deficiency symptoms, soil pH, manure nutrient values, key components in compost production and best compost use practices,**

**Diseases and Insects: including an introduction to diseases and common symptoms, general Integrated Pest Management, common Jamaican disease and insect problems, and**

**Organic Control Recommendations: including recipes for homemade solutions, general approaches to pest control, with much questions and discussion.**

**Beneficial insects were briefly discussed. Handout materials and a soil testing kit were left with the group.**

**Later I participated in a walking tour of several gardens and fields, for disease and insect identification, and recommendations. Later we visited two additional farms and had 'walking the field tours' with 6 (2 women) organic growers. We returned at 8:30 Pm to Treasure Beach.**

**Tuesday September 12, 2006 was basically an off day, due to the length of the previous day. I took photos of the ingredients needed to make organic control solutions to include in the power-point presentation.**

**Wednesday September 13, 2006 we spent the day with Gerva Bennett, an association member, at his farm. I viewed and discussed his compost making procedure, in particular covered including more nitrogen rich materials to increase the reaction rate and the overall quality of the compost. We reviewed the irrigation system. We toured his vegetable production fields, looking closely at tomato problems. Also, we looked at and discussed many insect and disease problems on peppers, marigolds, carrots, melons, corn, pak choi, beans and calalou. We discussed**

hardening off of transplants and the early care of transplants to get them off to a good start. Later we demonstrated the mixing of various homemade organic pest control solutions. At the end of the day we went to the internet site, copied the power-point presentations for Liz Anton to distribute to organic grower contacts. Due to its size, the power-point presentation will be forwarded to the Farmer to Farmer Washington office in a hard copy.

**Thursday September 14** We traveled to Marlin's farm, spent the day with one-on-one interactions. We discussed the growing of seedlings, using compost tea, sterilization of soil for the seed-starting mix, dividing, hardening-off, and the transplanting of seedlings. We toured the fields discussing weed species, tomato diseases and soil sampling. Late in the day, we analyzed the soil for pH, Nitrogen, Phosphorus and Potassium using an off-the-shelf reagent kit. Results for the Treasure Beach area soil were high pH, around 7.0, not surprising given the limestone rock outcrops visible. Phosphorus and potassium were adequate to sufficient on the kit's scale. Nitrogen was low to adequate, for the reasons listed about. These results were discussed in detail with Marlon. The remainder of the testing kit was left with Marlin, soon to be Director of the Treasure Beach Ital Farmers Association.

**Friday September 15** I worked on project materials and the final report.

**Materials distributed:**

University of Wisconsin publications including; Common Insect Pests, fact sheets on diseases, Wisconsin organic production standards, and a handout on Homemade Organic Sprays. Soil test kits were demonstrated and left with the Treasure Beach Ital Farmers Association, Treasure Beach and Organix, a Jamaican organic farmer's cooperative.

**OBSERVATIONS:**

Assistance was provided to three groups: the Treasure Beach Ital Farmers Association, Organix, a Jamaican organic farmer's cooperative and the Allied Farms Ltd. The level of understanding of organic production practices varied greatly among the groups and people I worked with. Members of the older established organization, Organix, were more familiar with the pest problems and general approaches to pest control. This was due in large part to the level of experience and background of the director, Markus Braun. Allied Farms Ltd. was at one time, the largest producer of organic food in Jamaica. The current farm manager, Adam Miller, wants to return the farm to a high level of organic production. Follow up visits and educational programs were requested by each group that I had contact with. All participants in the meetings were keenly interested in the material covered. The different level of educational backgrounds always has to be kept in mind when presenting to these groups.

**Markus Brawn and Organix would be prime contacts to continue educational efforts. They are established and have a significant membership. Closeness to the markets of Montego Bay and Negril are important. Adam Miller and Allied Farms Ltd. offers a perfect site for meetings and continued field demonstrations. The Treasure Beach Ital Farmers Association is small, but they have an established market in Jakes Restaurant, a strong supporter of organic production in the Treasure Beach area. Jakes is an important and influential tourist site on the south coast of Jamaica. From this assignment and my previous Farmer to Farmer program experience, I believe follow-up activities are warranted, if a suitable Jamaican counterpart is found. That could be the Treasure Beach Ital Farmers Association or one of the other organizations I worked with during this assignment. Additional support from the Farmer to Farmer staff in Jamaica would be helpful.**

**There were no previous *Farmer to Farmer* activities to report on.**

**CONTACT INFORMATION:**

**Treasure Beach Ital Farmers Association  
Marlon Campell, Coordinator and grower  
Calabash Bay P.A.  
Treasure Beach, St Elizabeth  
Jamaica, West Indies  
876-474-8768**

**Contact for Ital Rest Guesthouse:  
Frankie Genus, owner and farmer  
Calabash Bay P.A.  
Treasure Beach, St Elizabeth  
Jamaica, West Indies  
876-863-3481**

**Organix, a Jamaican organic farmer's cooperative  
Markus Braun, Director  
[markusbraun@cwjamaica.com](mailto:markusbraun@cwjamaica.com)  
876-337-4016**

**Adam Miller, Farm Manager  
Allied Farms Ltd.  
Pantrepant  
Bunker Hill P.O.  
Trelawny, Jamaica  
876-610-2809 (office)  
876-610-2801 (FAX)  
[adammler.ja@gmail.com](mailto:adammler.ja@gmail.com)**

**Other contacts not needing report**

**Gerva Bennett, organic grower and member  
Calabash Bay P.A.  
Treasure Beach, St Elizabeth  
Jamaica, West Indies  
876-872-9337**

**Triple Eye Farms, Parish of Trelawny**

**Ann Lyons, Restaurant owner and buyer  
Culloden Café  
Whitehouse, Jamaica  
876-383-3872  
[lyons@cwjamaica.com](mailto:lyons@cwjamaica.com)**

**Criston Maxum, Taxi driver  
Beacon District  
Treasure Beach Post Office  
Treasure Beach, St Elizabeth  
Jamaica, West Indies  
876-844-2891**

#### **FUTURE VOLUNTEER ASSIGNMENTS/ACTIVITIES:**

##### **Recommendations:**

**Participation Certificate: For all new or additional training sessions through the Farmer to Farmer program, have in place, the possibility of attendees receiving a participation certificate. This could be useful for the practicing organic farmers in maintaining organic certification.**

**Advanced training in entomology and plant pathology: Detail on insect life cycles and identification and further disease identification is needed. A series of presentations could be developed for organic and commercial growers alike. Including commercial producers could reduce and make safer pesticide applications. Field days could also be held at appropriate sites.**

**Develop, publish and distribute a series of fact sheets on each major disease and insect problem. Include photos of important life stages or cycles and general information including control strategies. These need to be written and diagramed so that growers with various education levels could understand them.**

**Vegetable Culture: Numerous growers mentioned that they would like more training in the growing of various vegetables. Particularly ones they have not raised before. The growers are looking to expand their markets. Also, the topic of how to save and store seed was requested.**

**Pesticide Education: Introduce the concept of Integrated Pest Management to the farm community. Topics include the use of protective equipment, pesticide application safety, proper disease and insect identification and use of the appropriate chemical at the appropriate rate.**

**Demonstration/evaluation plots: Establish demonstration/evaluation plots at the Allied Farms Ltd. Support would be needed for this organization to do that. An example demonstration may be; to include an area of unsprayed in an area sprayed with an organic control. For example; have a 10 by 10 area unsprayed while the rest of the cabbage planting is sprayed with Bt. The site then could be used for a field day and discussion.**

#### **ADDITIONAL COMMENTS:**

**Buying a cell phone upon arrival in country would have been beneficial. The cost was approximately \$40 including phone time. This would have helped with contacts, travel, meetings dates and times, etc.**

**The tree Manilkara zapota is called Naseberry in Jamaica and Sapodilla in Nicaragua, Central America. It is widely known as the tree chicle gum comes from. It is reported to have some insecticidal activity or at least act as a repellent for insects. Follow-up investigation would be beneficial.**

## **Treasure Beach Ital Farmers Association Organic Agriculture Improvement Project**

#### **EXECUTIVE SUMMARY:**

**Land ownership in the farming areas of Jamaica allows for small scale vegetable cropping. This is important in the local economy. There is also a tradition of organic production. Traditional crops include cassava, yams, sweet potato, shallots, thyme, corn, beans and peppers. Producing tomatoes and cole crops present significant insect and disease challenges. The three groups I worked with; the Treasure Beach Ital Farmers Association, Organix, and the Allied Farms Ltd. were highly motivated to learn more and to the continued development of organic production in Jamaica.**

**An all day educational program and field day was held with 31 organic producers, including 10 women, from Organix, Allied Farms Ltd. and the Treasure Beach Ital farmers Association. Individual all day farm visits were also held on 3 separate occasions. An extensive educational power-point presentation was prepared and left with leadership participants from each organizations.**

**I recommend that future Farmer to Farmer programs provide participation certificates to those attending educational events. Future assignments should include; advanced training in entomology and plant pathology, integrated pest management and pesticide application education. Additional training on vegetable**

**production and saving seed is needed. Demonstration and evaluation plots should be established at an appropriate site, such as Allied Farms Ltd. Additional support would be needed for an organization to conduct this extra work. Finally since there is no University Extension system in Jamaica, a volunteer assignment could be to develop, publish and distribute a series of fact sheets on each of the major disease and insect problems affecting the dominant crops.**

**Respectfully submitted September 27, 2006**

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