

Cooperative Research Extension Report
From
COM-FSM, Kosrae Campus

Overview

During the reporting period CRE Kosrae staff are concentrating on extension program activities on 5 approved Knowledge Areas. So far five extension programs are undertaken in the communities dealing with women groups, crops producers, school children and parents. CRE Kosrae was sponsoring a Banana Jam competition during Kosrae State Annual Fair. Interest and motivation on using local crops is very high. As obviously seen nowadays, taiwang banana is now included in snacks served for Kosrae High School and COM-FSM students. Local markets are selling local products and more people are buying local and fresh foods than imported foods. Mini nurseries and lawn gardens are increased in the communities.

PLANNED PROGRAM: HUMAN NUTRITION/EFNEP

PLANNED PROGRAM: Sustainable Agriculture

PLANNED PROGRAM: Small and Home-based Business

PLANNED PROGRAM: Biobased Products & Processing

Mid-August to Mid-November 2007 LGP/BOR Report

Stanislaus J. Fal'Mngar -Yap Campus

November 14, 2007

Yap-CRE Activities:

- Yap-CES completed and updated her on-line activity and accomplishment report for the year 2006-7. All AES and CES reports have been screened and approved prior to the deadline of September ending.
- The EFNEP online report of CRS5 was completed the first week of October and hard copies submitted to COM/LGP Margaret Weital in Ponape.
- In partnership with YINEC or the Yap Interagency Nutrition Education Council, Dr. Lois Engleberger conducted a workshop in Yap September 26-28 at the Agriculture Station. Dr. Engleberger focused on 3 crop varieties in Yap: Taro, Breadfruit, and Banana. A collection of these 3 crop types were made, documented and photographed and nutrient contents elaborated on. Yap Land Grant participated.
- After the Yap Noni Workshop facilitated by UH Dr. Scott Nelson and Dr. Craig Elevitch, a Farmers' Agriculture Organization was formed to assist farmers with their crops like noni as well as other land and water agriculture crops and products. A total of about 20 Yapese farmers signed an organizational By Laws with elected Officers as well as a Charter of Corporation document addressed to the Yap Government to recognize the group as a non-profit organization for farmers. Yap Government had given its official approval to the group as non-profit before this report. All small grant applications to the FSM's Small Grants Programme/NZAid Pacific Environment Fund have been put on hold pending earliest screening and review by the Yap Farmers Organization before submission off-island.
- Yap State Emergency Operations Plan for Farm Animals against Pandemic Influenza. I participated as a member of a task force committee to author a Farm Animal Plan for the State of Yap in

preparation against pandemic influenza like SARS, West Nile or Bird Flu (H5N1). Meetings were conducted throughout 2006-7 to author a farm animal plan for the State that could be adopted as the Yap State official plan – either by itself, or as an Appendix to the Yap State Emergency Operations Plan for Pandemic Influenza. Collaborators include Dr. Martin Bell – Yap Memorial Hospital, Dr. Ngaden – Yap Memorial Hospital, Dr. Paul – Yap Memorial Hospital, Dominic Teruwemai – Yap Memorial Hospital, Lawrence Yug – Environmental Health, Thomas Gilgiyoch – Office of Planning and Budget, Alysius Wag – Environmental Health, Andrew Fagolur – Yap Quarantine/Agriculture Station, Xavier Jibemai – Yap-EPA, Arnold Yokbay – Education Department, et al. The plan with some Standard Operating Procedures (SOP) is yet to be finalized for Yap and approved by the Yap leaderships.

- January – November 2007: in monthly activities: Banana Plantation Project to serve as a center (genebank) where farmers can come to and obtain banana planting materials for their farms. To date there is not a center on the island where any farmer can freely come to and obtain banana plantings. Elementary schools have to depend on their teachers and parents for planting contributions. Land owner by the Campus has given permission for various types of banana plants to be planted on her land. In addition another small site in the village of Nimar has been cleared, cultivated with banana plantings. And to eventually collect and plant all types of banana trees presently in Yap.
 - Mr. Louis Bmoon, a aquaculture farmer from Lamer village Rull municipality attended a WSARE proposal writing & report workshop in Guam October 17-18, 2007 and was able to tour many projects in agriculture as well as aquaculture.
 - Ms. Merlyter Sylvanuz SPC/DSAP Agent for FSM arrived Yap on November 7, 2007 and will be working with Yap-CES until November 16, 2007. Her critical role is providing enhancement to extension programs in whatever way she could. For example, she purchases for the farmers needed seeds and planting materials as well as visits to the various private farmers providing technical assistance alongside the local CES agents.
 - Dr. Manny Duguies of UoG/Guam and FAO/Palau Philip Castro facilitated a workshop on piggery at the Agriculture Station on November 5-9, 2007 at the Agriculture Station. There were 30 participants and Merlyter Sylvanuz and I were official guests and speakers at the graduation ceremony.
- Expected Outcomes for the above and the following activities:
Increase agriculture and/or other science-based knowledge, improved general health, improved character/motivation/attitudes, improved cultural skills/knowledge, improved quality of life, improved life-time skills, improved knowledge/awareness, improved aspirations, improved agriculture products, improved/protect natural environment, improved natural resources, improved family situation/systems, improved family resources, development of new products, and also program enhancement for sustainability.

CRE AES National/Pohnpei

FOURTH QUARTER REPORT OF ACCOMPLISHMENTS AND RESULTS **FY 2007**

SPECIFIC PROGRAM – HORTICULTURE

Knowledge Area - Plant Management Systems: Taro (*Colocasia* spp.)

A. Brief Project Rationale and Objectives - The approved Hatch project on taro (*Colocasia* spp.) aimed at introducing taro leaf blight (TLB) resistant varieties from SPC RGC to evaluate field performance and disease resistance under Pohnpei conditions. SPC RGC germplasm collection provided taro TLB resistant varieties originally from the region (Samoa, Papua New Guinea), including Southeast Asia (Indonesia, Malaysia, Philippines). The field performance evaluation on the characteristics of the varieties and corm quality conducted in other locations is no guarantee that the same TLB resistance will be the same or maintained when plants are grown elsewhere. Taro varieties selected for leaf vegetable in Hawaii and Japan were also introduced for field performance evaluation in Pohnpei. The taro varieties for leaf vegetable are intended also for future nutritious food on the island. The varieties would increase diversity of TLB resistant taro (*Colocasia* spp.) and improve taro production in Pohnpei.

Completed planting of the taro in the five municipalities in farmer cooperators' field to evaluate field performance under the traditional planting adopting traditional practices and management. The approach will facilitate sensory evaluation on-site (in the communities); awareness of the varieties in the municipalities and communities; and facilitate distribution of varieties.

Knowledge Area - Plant Management Systems: Banana

A. Brief Project Rationale and Objectives - Another project is focused on the rare traditional nutritious Pohnpei banana varieties, the 'Utin Iap', Akadah Weitahta, and the promising commercial variety, 'Macau'. The varieties established in the collection area are being maintained in cooperator's field. The result of the experiment of *in vitro* multiplication using explants from suckers of open field-grown bananas was from nil to low number of plantlets produced for the varieties attributed to field conditions. The alternative *in vivo* multiplication of CARBAP known as the PIF (stem fragments) procedure to produce 'plantlets' was conducted.

Knowledge Area - Plant Management Systems: Cinnamon

A. Brief Project Rationale and Objectives – Cinnamon is considered new commercially promising crop for Pohnpei. The research is aimed at determining the methodology of growing cinnamon in the lowland to produce regular bi-yearly harvest of shoots/sticks for commercial 'quills' after three or four years after planting.

Report for Board of Regents

Agricultural Experiment Station, Yap Campus

Agricultural Experiment Station of Yap Campus is working on the following key themes:

- (i) Production agriculture of Noni (Noni Project)
- (ii) Diversified/Alternative agriculture and food security (Gargey Project)
- (iii) Pests and diseases of crop plants (Nematode Project)

Two new Hatch Projects kicked off during this period of reporting

Swamp Taro Nematode Project

Screening swamp taro cultivars under field conditions for resistance to corm rot induced by burrowing nematode Radopholus similis (#MIR-COMF37, 2007-2011; \$79,420.00)

This new project aims to evaluate the susceptibility of swamp taro cultivars against corm rot inducing nematodes. Earlier study from this laboratory revealed the presence of corm rot inducing burrowing nematodes on swamp taro, staple crop of Yap islanders. Yapese identify at least seven cultivars of swamp taro, chiefly based on the morphological features such as shape of the leaves, size and color patterns of the various parts of the plant. Our interaction with several Yapese women farmers reveals information about some cultivars that apparently show some kind of resistance to nematode attack. The use of resistant varieties is a cost efficient and environmentally-sound management strategy for minimizing production cost and maximizing quality. Current research, therefore, focus on the susceptibility/resistance of different swamp taro cultivars to nematode infestations under field conditions.

Noni Varietal Evaluation Project

Evaluation of intra-varietal diversity in Morinda citrifolia L. var. citrifolia L. from Yap Island (#MIR-COMF38 (2007-2010); \$64,720.00)

This project aims to evaluate the varietal differences in Yapese noni and to scientifically validate the traditional knowledge pertaining to their medicinal qualities. During the recently held workshop, participants felt that there are at least three varietal forms on noni in Yap that call for detailed evaluation for potential exploitation of their medicinal properties. Any unrecognized intra-varietal diversity and difference in chemical constituents will be a potential marketing tool.

Noni Project

Production agriculture of Noni (Morinda citrifolia L.) to promote commercialization and small-scale private sector development on Yap

Noni Project aims to promote noni (*Morinda citrifolia*) cultivation and commercialization of noni products on Yap. Objectives of this project are to (i) establish a nursery for the mass multiplication of noni seedlings from cuttings and seeds, (ii) educate and train small-scale farmers in the cultivation and establishment of small and medium-sized noni gardens, and (iii) assist in the sustainable management of noni as a beneficial crop.

Gargey' Project

Vegetable production through simplified hydroponic micro-gardens to enhance the livelihood of displaced Gargey community on Yap

Accomplishments: The project completed first year of operation. Seven low-cost composting units have been erected at the project site and members efficiently completed first one round of composting process involving household organic wastes and grass trimmings. Not only this has reduced volume of wastes accumulating at the settlement, but finished compost is being used for vegetable cultivation. Increased participation in field activities is a positive sign noticed among the community groups.

Nematode Project

Assessment of the Occurrence and Damage Potential of Plant-Parasitic Nematodes Associated with the Major Food Crops on Yap (#MIR-COMF34; \$31,250.00)

This Hatch project aims to assess the damage potential of plant parasitic nematodes affecting various food crops across Yap. Field grown and potted plants are continuously being screened for the presence of plant parasitic nematodes. This is an ongoing study and screening is conducted on a wide array of crops on a regular basis.

FOURTH QUARTERLY REPORT FISCAL YEAR 2007
MICRONESIA PLANT PROPAGATION RESEARCH CENTER
COOPERATIVE RESEARCH AND EXTENSION
COLLEGE OF MICRONESIA-FSM, KOSRAE CAMPUS

Date: October 02nd, 2007

Program Accomplishment Narratives/Overview:

In the reporting period, Micronesia Plant Propagation Research Center (MPPRC) concentrated on staple food crops of Kosrae like banana, taro, citrus and sweet potato. Ongoing research focused on improving micropropagation protocols and nursery techniques for mass-multiplication of different varieties of banana, taro, citrus and sweet potato. More than 2,600 seedlings of different varieties of banana, taro and sweet potato were produced. Extension activities continued to address important agricultural issues of availability of limited planting material and technical assistance through increased seedling production and farm visits. Total 310 seedlings of different varieties of banana, taro and sweet potato were distributed to the local farmers. Given full consideration to another major issue of unavailability of grafted and quality seedlings of lime, the research has been started on in vitro and in vivo grafting of lime. To improve the biotechnology research facility, a hatch proposal has been submitted to the United States Department of Agriculture (USDA).

Planned Program:

Sustainable Agriculture

Program Knowledge Areas:

Plant Genome, Genetics, and Genetic Mechanisms

Plant Genetic Resources

Plant Product Quality and Utility (Preharvest)

Plant Management Systems

Pathogens and Nematodes Affecting Plants

Integrated Pest Management Systems

Report by Hirugu Sawano, Food Processing Technology Volunteer - Pohnpei

Thank you for everything. First I'm going to report about Breadfruit flour. last week me and Mark visited the each municipal office (u, kolonia, nett, sokehs) and show that sample to people. Their reaction was very well and got promises of a workshops. This week Thesday, open the workshop in kolonia.I will report the result of the workshop later.

Thank you for the management about the RI funds.I think this program is a good opportunity to promote the food industry of this country and I feel weight of my responsibility at the same time .

By the plan with KIYOSHI, I do the guidance that students can get an income from by agriculture and food processing in the future and I'm planning to teach how to make JAM.

Last time, we made The mountain apple Jam and succeeded. But I felt that can not get a income in the last way, because, the reason is a jar is very expensive. Therefore I hit on an idea what collect a jar from a people and reuse them.

A one of Japanese volunteer who works for EPA (Pohnpei Environmental Protection Agency) and he may cooperate this plan If some problems will be clearly. How do you think about it ?.

If can collect jars, we can support a producer who cannot buy the jar. Of course that is good for the Environment of Pohnpei.

Anyway, I want to make a successful model case of food processing.