

# **SPECIALITY CROP BLOCK GRANT PROGRAM- FARM BILL**

## **GUAM DEPARTMENT OF AGRICULTURE**

FINAL PERFORMANCE REPORT

AMS Agreement 12-25-B-0918

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**In Vitro Development of clean planting stock to Guam's local Taro production  
Agreement 12-25-B-0918  
Final Performance Report  
5/22/13**

## **Project Summary**

Taro production on Guam is a deep-rooted tradition, as it is in all South Pacific islands, and it still contributes to Guam's local agricultural economy. However, production is restricted by a limited availability of clean planting stock and by several important diseases (Taro Leaf Blight, Taro Bacilliform Virus and Dasheen Mosaic Virus). Taro propagation is based on the use of corms and suckers; this type of vegetative propagation allows virus

infections to be carried from one generation to another. There is no formal taro planting stock production, so finding large quantities of propagules at one time is almost impossible, and there is no guarantee that they are disease-free. This could be overcome by *in vitro* propagation, which is efficient, fast and also yields disease-free planting material. We have produced 29 varieties of taro in a large quantity, where many of them are resistant taro to TLB disease and mostly lots of them were free of viruses and propagate it via tissue culture and they are available at little cost to local taro growers. This improved efficiency of taro production, improved plant health and therefore raised yields, resulting in trade enhancement and increased consumption of local taros over imported ones. This project started in March 2010 and finalized in February 2013 but with continuations of SCBGP funding taro cultures are maintained in tissue culture lab, in the nursery and in the field.

### **Project Approach.**

In the first year we collected 29 taro varieties from Palau, Pohnpei, Yap, Saipan, SPC, Hawaii and Guam. All plants were planted in the pots and in the field for the future planting material and farther tissue culture propagation.

Because of the project delay by the local bureaucratic process we were unable to hire technician that could fully carry out all work. As a result of salary savings quite large amounts of funds became available. We requested permission to use \$68,250 to expand our tissue culture facilities by purchasing a modular building, a new autoclave and a new extra laminar hood.

One research assistant working already on bananas project and another research associate working at UOG lab were able to support existing program.

### **Goals And Outcomes Achieved**

- All 29 varieties of taro were established in tissue culture.
- In a year we were able to plant hundreds of taro in the rooting medium and then plant all of them in nursery.

- As the taro was adjusted to the natural conditions we were able to plant all our varieties in the fields. One set was planted in one of our experimental farms in Yigo where we built individual beds from concrete blocks and planted whole collection. In the other experimental farm in Inarajan we planted the same collection directly in the soil.
- We also published and printed 500 copies of “Guam Taro Guide” booklet with all our taro varieties. Booklet is extensively illustrated and contains all-important information. It has been posted at:  
[http://www.wptrc.org/userfiles/file/Impact%20reports/taro\\_webapr\\_26\\_2013.pdf](http://www.wptrc.org/userfiles/file/Impact%20reports/taro_webapr_26_2013.pdf)
- In January 2013 we conducted a workshop with taro tasting test. Workshop was a successful event with more than 100 people attended. During taro taste test we served cooked corms and rated each of them based on survey conducted by all participants. Results were published in the Pacific Daily News (local newspaper). All of the best varieties are currently available to people.
- With our participation, local radio show presented a program about nutritional value of taro and its availability on Guam.
- In May 2013 Block Grand Program supported “Organic Festival”, local event organized by Guam DOA opened to the public. For lunch they were serving local dishes among them “taro leaves spinach” dish and taro corm cooked with fish.
- So far we do not see any new taro corms in the local markets.

## **BENEFICIARIES**

Farmers.

Close to one thousands of taro plants, many of them resistant to TLB, were distributed to the homeowners and recently we received an order from two farmers to get another two thousands of plants to be planted at their farms. Most of the plants will be delivered from tissue culture production with remaining share from nursery and field.

Homeowners.

Several hundreds homeowners learned about growing and maintain healthy varieties of taro by attending workshop as well studying Guam Taro Guide. Newspaper articles published in Pacific Daily News and radio show at Guam Public Radio generated wide-ranging public interest.

## **LESSONS LEARNED**

We learned that local residents are interested in opportunities to obtain other varieties than most prevalent Visaya and Agaga. This observation encouraged us to alter the scope of tissue culture propagation.

- All our varieties were tested to Dasheen Mosaic Virus (DMV) and Taro Baciliform Virus (TaBV). Most of taro varieties tested for these two viruses showed susceptibility. However, large numbers of plants were disease free which is typical when plants are propagated in tissue culture.
- Continuation of SCBGP –Farm Bill Program will allow us to expand as well maintain taro varieties presently cultured in the lab.