



Three separate projects are outlined in Agreement No. PNR-07-008-01-01-01. The University of Hawaii-Manoa, the University of Hawaii-Hilo, and the Hawaii Agriculture Research Center are each responsible for one project from this Agreement. As of April 30, 2008, the status of each project is as follows:

1. HARC – The establishment of test plots of *Moringa oleifera* on Molokai has been completed at the larger, low-elevation site in Hoolehua. The test site is approximately 1.2 acres in size, with over 650 moringa seedlings and approximately 150 jatropha seedlings. The jatropha seedlings were a last-minute addition to the site. The field was prepared and planted from January-February 2008. An irrigation system using individual emitters was installed to control the flow of water to each tree and minimize competition from weeds and grasses. The flow rate is 1 gallon per hour per tree. Seedlings were planted from a small nursery that had been established with moringa and jatropha materials. After all seedlings were used, direct-seeding was the method of establishment. Irrigation rates were lowered from 6-7 hours per cycle to 4 hours per cycle in late March. In late March the germination rate for the moringa lines was ~80%, and the rate for the jatropha lines was ~55%. The second site (Kalae) has about 75 moringa trees and 30 jatropha seedlings already in the ground (~6 months old) or awaiting transplant. Development at Kalae has been slow due to lower temperatures and a greater number of cloudy days. Growth measurements will begin in June 2008. The project will enter Phase II this summer with soil testing and fertilization regime introduction to determine nutrient utilization for each species at the Hoolehua site. Growth and overall tree performance will be monitored prior to, during, and following the fertilization trial.
2. UH-Manoa (CTAHR) – The goal of this project is to develop a method to produce genetically identical *Jatropha* trees to increase uniformity of growth and yield in the field. The major

accomplishments toward this goal were the hiring of a plant scientist and locating a suitable test plant. Ms. Gail Uruu has been appointed to carry out the tissue culture research.

All available literature on jatropha tissue culture has been evaluated and a selection made as to the procedure with the greatest promise. Leaf tissue from the jatropha tree at Pearl City Urban Garden Center has been taken to check the sterilization protocol and test the selected tissue culture media. The Pearl City line was chosen as it has larger seeds than other lines and consistently gives uniform off-spring. It is anticipated that some changes will be necessary in the media for the Pearl City line.

3. UH-Hilo (CAFNR) – The Waters of Life Charter School (WOLS) whose screen houses are provided free and were to be used to grow out the 10,000 seedlings of oil palm fell into financial difficulties in December. Delays in moving forward were experienced until the Board of Education determined whether they could continue operations or if they had to shut down the school. That decision has now been made to leave the WOLS in place, but a new WOLS school board has been elected and re-approval by that new board must be sought. That meeting is set for May 30, 2008.

The seeds of different palm hybrids were ordered in November 2007. The funds and the order seemed to have disappeared during the transaction from Hawaii to New York City to Costa Rica until last week. Word (and an apology) was received from ASD in Costa Rica; they acknowledge receiving my order and the funds for the hybrid seeds. They had sent their existing seeds of the hybrids requested to S. America and were waiting for the next batch to be prepared. They expect to ship in May sometime. Once the seed arrives and re-approval is gained from WOLS to use the shade houses, all the plants should be growing by September.

(END)

Subsequent project reports will provide more detailed analysis of the progress for each project. The HARC and UH-Hilo portions should transition into the Phase II efforts with significant carry-over from Phase I. The UH-Manoa Phase II will be a significantly different project from Phase I. Each component will continue to be reported as separate projects insomuch as possible.

*The information contained in this report is to be used only for the purposes of conveying an update to HECO with regards to Agreement No. PNR-07-008-01-01-01. Any other use of this information by parties involved in this Agreement is prohibited unless otherwise specified. HARC, UH-Manoa, and UH-Hilo are providing this update in accordance to the specified Agreement. The research financed under this Agreement is non-proprietary.*