Krome Memorial Section

**WILLIAMS GROVE GENETIC RESOURCE CENTER: A SCIENTIFIC AND OUTREACH FACILITY FOR SOUTH FLORIDA**

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**Abstract.** In 2004 Fairchild Tropical Botanic Garden (FTBG) received a donation of 20 acres in the agricultural district of Miami-Dade County from Mr. Frank Williams. The property had approximately 19 acres of commercial avocados, consisting of modern varieties with current commercial potential. A preliminary master plan is under development for the property. The property will be divided into a commercial avocado orchard of approximately 16 acres and a 4-acre public outreach facility. The commercial component will be maintained according to standard agricultural practices for Miami-Dade County. The proceeds of the commercial farm will be used to help offset the costs of the overall project. The public outreach and research center will house the living genetic bank for avocado, mango, jackfruit, mamey sapote, sapodilla, canistel, abricio (*Mammea americana*), caimito, Spanish lime (*Melicoccus bijugatus*) and tamarind. Each crop has its own scientific focus for development and use. A public education facility will be developed with a point of purchase outlet for specialty fruit, products and outreach materials. A teaching and research building will be constructed to house staff of the Tropical Fruit Program of F TBG, a classroom and a synoptic teaching collection. Williams Grove will serve as a valuable fruit genetic resource and outreach facility for Florida and Tropical America.

The Tropical Fruit Program of the Fairchild Tropical Botanic Garden (FTBG), located in Coral Gables, Florida, USA, began in 1987 with the goal to acquire, conserve, investigate and distribute superior tropical fruit cultivars. For 18 years this program has defined and focused its strategic direction within FTBG, a collections-based botanical garden and research institution specializing in palms, cycads and tropical trees. Previous to the inception of the Tropical Fruit Program, FTBG had worked sparingly with tropical fruit. Specific tropical fruit crops were identified and prioritized and their living collections improved through collecting expeditions and through local and international collaborators. The living collections have been conserved and duplicated on multiple sites in South Florida and to a lesser extent internationally. These collections have been used to generate original research information for published work as electronic, oral and written media for distribution to hobbyists, small and large-scale commercial growers in South Florida, Tropical America and throughout the world.

The donation of the 20-acre Williams Grove property expanded the possibilities for FTBG and the Tropical Fruit Program. The property provides a permanent home for the FTBG living genetic collections of tropical fruit and room for expansion in the short- and medium-term future. The commercial avocado grove on the property provides resources/revenues for the development of the property (Fig. 1). The location of the property, in the heart of the agricultural district of South Miami-Dade County provides a unique opportunity for the development of an off-site facility of FTBG for the marketing of specialty tropical fruit using the FTBG living collections. Also there are preliminary plans for the creation of a modest research and outreach facility to serve as headquarters for the Tropical Fruit Program, for tropical fruit outreach and teaching and as a site to house visiting scientists/intern program.

**Production and Demonstration Avocado Orchard**

Approximately 16 acres of the property will be used as a commercial avocado production orchard. The orchard consists of ‘Bernecker’, ‘Beta’, ‘Donnie’, ‘Hall’ ‘Miguel’, and ‘Simmonds’ avocados, cultivars desirable for commercial sale in the United States. Most of the trees were topworked less than 8 to 10 years ago. Overall health of the orchard is good with significant improvements in tree vigor, yield and fruit packout have been made in the first 2 years of management by FTBG. The income from sale of the fruit will allow for rudimentary maintenance of the property and implementation of the development plan. Management practices are consistent with commercial avocado production in South Florida. Significant replanting of trees and topworking of seedlings has improved the profitability of the orchard. The orchard will be used as a demonstration model for best agricultural practices in Tropical America.

**Living Genetic Collections**

Williams Grove will serve as the permanent home for the living genetic collections of the FTBG. The living genetic collections are the cornerstone of the program and serve a role for the conservation of clones of key tropical fruit species, investigation into applied horticulture, and for distribution of plants to the local, national and international community. The primary collections are of avocado, mango, jackfruit, mamey sapote, sapodilla, canistel, abricio (*Mammea americana*), caimito, Spanish lime (*Melicoccus bijugatus*) and tamarind. Each of the collections has its unique scientific focus based on the research and outreach objectives of the tropical fruit program. These objectives define the makeup of each collection, the space needed for their conservation and the commitment of resources to each.
The avocado (150 accessions) collection will serve as a core collection of promising West Indian selections of Tropical America and a collection of heritage cultivars to showcase and conserve the contribution of Florida to this crop. The mango collection, with nearly 200 accessions, has given the Tropical Fruit Program its greatest impact, and will further expand in number and diversity. The mango collection will number up to 300 accessions, encompass a wide diversity of cultivars and wild mango relatives, and will serve an international audience of home gardeners and commercial producers. The jackfruit (75 to 100 accessions), mamey sapote (50 to 75 accessions), sapodilla (50 to 75 accessions), and canistel (15 accessions) collections will also encompass a wide diversity of cultivars, with the addition of wild crop relatives for each. The goal is to build and conserve the world collection for these crops. The lychee (20 accessions), abricio (15 accessions), caimito (15 accessions) and Spanish lime (10 accessions) collections will conserve cultivars that contribute to the commercial development of these crops, but will remain more limited in scope.

Living collections will be accessioned within the plant records systems of FTBG. Labeling, mapping and overall presentation and maintenance will be consistent with access by the general public. Plants, budwood and seed will be distributed from the living collections locally, nationally and internationally.

Fruit Market and Tropical Fruit Outreach

Williams Grove provides the unique opportunity for FTBG to promote specialty tropical fruit. The fruit produced from the living collections will be made available to FTBG staff, FTBG members and to the general public. The sale of these unique fruit cultivars and products will be based on education. An outreach program will be built around the use of tropical fruit and tropical fruit products, with workshops, classes and intern programs presented by FTBG staff and volunteers. The goal is to sow an appreciation for tropical fruit in the general public. The fruit, products and information presented at the fruit market and outreach center will be unique to Williams Grove.

FTBG Horticultural Center

A tropical fruit horticultural research center will be constructed as part of the public campus of the Williams Grove Genetic Facility. The building will be compatible with the existing land use in the area and will house the tropical fruit program staff, an office for visiting faculty and a small teaching laboratory/classroom. The exterior landscaping of the entire campus will be developed as a synoptic tropical fruit collection compatible with the teaching of economic crops.