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Circular 1440

New Plants for Florida: Tropical Fruit[1]

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The Florida Agricultural Experiment Station tropical fruit breeding began in 1930 with the establishment of the Homestead Subtropical Experiment Station, now called the UF/IFAS Tropical Research and Education Center (UF/IFAS TREC). S. J. Lynch, H. S. Wolfe, G. D. Ruehle and L. R. Toy introduced germplasm of numerous tropical crops for testing and evaluation. Their efforts, along with those of subsequent TREC scientists during the 1940s and 1950s, resulted in superior guava (*Psidium guajava*), sapodilla (*Manilkara zapota*), and loquat (*Eriobotrya japonica*) varieties with improved fruit yield and quality. Later scientists C. W. Campbell, S. Malo, and J. Popenoe continued to introduce, evaluate, and select superior tropical fruit. These efforts lead to the release of 'Cariflora' papaya (*Carica papaya*) and the 'Homestead' guava. The 'Golden Star' carambola (*Averrhoa carambola*) is now used as a main source of rootstocks for high-pH, calcareous soils. The 'Ruehle' avocado (*Persea americana*), released in 1962, remains a minor commercial variety today. 'Cariflora' papaya has been identified as one of the most papaya-ringspot-tolerant varieties ever produced and has been used throughout the world (e.g., Taiwan, Thailand, Latin America, Hawaii) to further the development of superior papaya-ringspot-resistant varieties.

From the mid-1950s to the 1970s, researchers released a number of superior 'Tahiti' lime (*Citrus latifolia*) selections. In addition, UF/IFAS TREC introduced the 'Mauritius' lychee (*Litchi chinensis*) from South Africa in 1952, the 'Magaña' mamey sapote (*Pouteria sapota*) from El Salvador in 1961, and the 'Mysore' raspberry (*Rubus niveus*) from India in 1948. Currently, 'Mauritius' lychee is the major lychee, and 'Magaña' is the second most important mamey sapote variety grown in Florida. Several superior sapodilla varieties grown commercially today were released by UF/IFAS TREC.

Today, the tropical fruit program includes the evaluation of open-pollinated seedling material of mamey sapote, pitaya (dragon fruit), and mango. A molecular genetics project for papaya seeks to develop resistance to ringspot virus and superior fruit quality and yields. Recently, new projects have been initiated using molecular genetics and genomics to test the feasibility of breeding superior mango (*Mangifera indica*), banana (*Musa* spp.), miracle fruit (*Synsepalum dulcificum*), vanilla (*Vanilla* spp.), and avocado cultivars for south Florida production.

Florida tropical fruit industry acreage has fluctuated during the past 70 years due to natural disasters, foreign competition, and changes in US demographics. Today, there are

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about 13,000 acres in cultivation, with an economic impact of over $100 million annually.

For more information about tropical fruit varieties, please visit EDIS publications at http://edis.ifas.ufl.edu and search by keyword (e.g., sapodilla, avocado, guava, mamey sapote, loquat, etc.)

Table 1. FAES tropical fruit varieties selected or bred at UF/IFAS TREC, Homestead.

Tropical Fruit	Variety	Date of Release
Guava	Redland	1941
	Supreme, Ruby	1946
	Homestead	1989
Sapodilla	Prolific	1941
	Brown Sugar	1945
	Tikal	1959
White sapote	Dade	1943
Mamey sapote	Copan, Mayapan, Tazumal	1980
Black sapote	Merida	1988
Canistel	Oro, Trompo	2001
Barbados cherry	Florida Sweet	1956
Avocado	Ruehle	1962
Loquat	Wolfe	1965
Carambola	Golden Star	1965
Lime	10 Tahiti lime selections	1975
Papaya	Cariflora	1986