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THE MAMEY SAPOTE IN SOUTHERN FLORIDA

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ABSTRACT

The mamey sapote, *Calocarpum sapota* (Jacq.) Merr., is relatively easy to grow, but is rare in southern Florida. The tree bears a large fruit which is highly esteemed by people of the American Tropics. Much variation in fruit quality and yield occurs among seedling populations, so there is a good posibility for selection of superior types. There is a ready market for limited amounts of fruits in Florida and small-scale production is possible in the warmest areas of the state.

INTRODUCTION

The mamey sapote, *Calocarpum sapota* (Jacq.) Merr., grows well in southern Florida, but is relatively rare. Although it has been grown in the state at least since the mid-1800's (7), only a few brief reports have been written about its culture or its occurrence in Florida (1, 3, 4, 5, 6, 7).

The fruit is highly esteemed by people of the American Tropics for use as fresh fruit and in preserves and sherbets (6). There has been a small market for the fruit in a few cities of the United States for a long time (6). Recently an increase in demand has occurred because of an influx of Cuban people into the cities of Florida.

This report summarizes what is known about the culture of the mamey sapote in Florida.

Florida Agricultural Experiment Stations Journal Series No. 2809.

DESCRIPTION

The tree is large, growing to a height of 45 to 50 feet in Florida. In tropical regions it may exceed 80 feet in height. It has a large central trunk and a few large branches. The large leaves are clustered near the ends of the stout branchlets.

The small white to pale yellow flowers are produced in great numbers along the branchlets (Fig. 1).

The fruit (Fig. 1) is ovoid to ellipsoid in shape and three to six inches long. The skin is thick and hard with a brown, scurfy surface. The flesh of the ripe fruit is pink to red in color, with a sweet, agreeable flavor. The fruit contains one to three large brown seeds which are hard and shiny.

In Florida the greatest part of the fruit crop matures from May through September, but some mature fruits can be found at any time of the year. Often flowers, immature fruits, and mature fruits will be present on a tree at the same time. An individual fruit takes more than a year to mature in Florida.

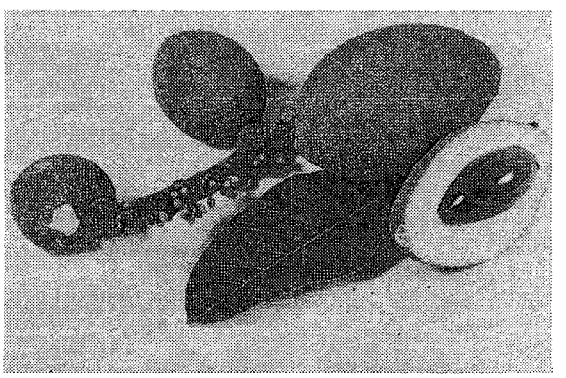

Fig. 1.—Flowers and fruits of the mamey sapote.

Cultural Requirements

Soil and Water.—The mamey sapote tree grows well in a variety of soils, including the limestone soils of southern Florida. The tree is injured by flooding, so good drainage is essential.

In contrast to related species such as the sapodilla, which is little affected by drought, the mamey sapote may need some irrigation during the dry months of the year. Large trees have been observed to die back during prolonged dry periods in the Homestead area.

Fertilizer.—Satisfactory growth has been obtained in trees maintained on the same fertilizer program as used for other fruit trees, such as citrus and mango (8, 9). If small trees become yellow they probably are showing symptoms of minor element deficiency. This condition can usually be corrected by applying zinc and manganese in nutritional sprays or by applying chelated iron compounds to the soil.

Pruning.—The tree usually will develop a desirable shape without any pruning. When trees become large, pruning may be necessary to reduce their size because of crowding or danger of damage to the tree and its surroundings during windstorms. Experiments at the Sub-Tropical Experiment Station have demonstrated that severe pruning does not harm the tree, but does cause it to cease fruit production until considerable new growth develops.

Seedling Variation

Seedling trees vary greatly in fruitfulness and in the quality of their fruit. So few trees have been grown in Florida that little selection work has been done. Selections from Central America and the West Indies have been brought to Florida for trial, but none has borne fruit long enough for a reliable evaluation of performance. Considering the variation known to exist, there is great possibility for selection of superior types from seedling populations.

Propagation

It is not adivisable to plant seedling trees for fruit production. Not only do they take eight or ten years to bear fruit, but it is likely that they will be unfruitful or have fruit of poor quality. It is best to plant vegetatively propagated trees of selections known to be superior. An important advantage of vegetatively propagated trees is the fact that they come into bearing in about half the time it takes for seedlings to bear.

Side veneer grafting is the best method of vegetative propagation under Florida conditions. The best scions are shoots on which the terminal bud has begun to grow, but on which the leaves have not expanded.

Chip budding has also been done with some success.

Young, vigorously growing seedlings are used as rootstocks. Seeds for rootstocks are removed from ripe fruits, laid flat in containers of a light potting soil, and lightly covered. They germinate in two to four weeks.

Air layering is difficult and is not considered a desirable method of propagation in Florida.

Area of Adaptation

The mamey sapote is a tropical tree and is easily injured by low temperature. It is less resistant to cold injury than a related species, the sapodilla.

Small trees are injured by exposure to air temperatures below 32 F. Mature trees are injured by temperatures below 30 F and are killed if the temperature goes below 25F for an appreciable length of time. Therefore, mamey sapote trees can be expected to survive the winters only in the warmest areas of southern Florida.

Future Possibilities

There is a ready market for the small amount of fruit which is now produced in Florida. However, it is not likely that large quantities of fruit could be sold profitably without the expenditure of considerable money in market development. Commercial production should be limited to small plantings.

For the homeowner with little space for trees, the mamey sapote is not a good tree to plant because it becomes very large. For the gardener with plenty of space, the species makes a picturesque specimen tree, requires very little care, and yields a useful, unusual fruit.

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YELLOW PASSIONFRUIT IDEAL FOR FLORIDA HOME GARDENS

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Over the past three years, Florida homeowners have become increasingly distressed by the Caribbean fruit fly infestation of their dooryard fruits. Inasmuch as there is no immediate prospect of effective control of this insect, it seems appropriate to recommend a fruit that appears to be unaffected by it—a fruit which provides an attractive and flavorful juice, and which is advancing horticulturally in other countries.

COLLOQUIAL NAMES AND DESCRIPTION

The yellow passionfruit (*Passiflora edulis* f. *flavicarpa* Deg.) has a number of colloquial names such as *ceibey* in Cuba, *maracuja peroba* in Brazil, *parchita maracuyá*, or simply *parchita*, in Venezuela, *parcha* in Puerto Rico, yellow granadilla in South Africa, *grenadille* or *couzou* in French-speaking countries, yellow *lilikoi* in Hawaii, and golden passionfruit in Australia.

It is borne by a woody, perennial vine, climbing by means of tendrils. The evergreen leaves are glossy, deeply 3-lobed, finely toothed, 3 to 8 inches long and, like the young stems and tendrils, tinged with red or purple. A single, fragrant flower, 2 to 3 inches wide, is borne at each node on the new growth. The bloom, which opens about noon and closes in late evening, consists of 5 white sepals, 5 white petals, a fringe-like corona of straight, white-tipped rays, rich purple at the base; also 5 stamens with large anthers, the ovary, and triple-branched style forming a prominent central structure. The nearly round fruit, 1½ to 2½ inches wide, has a tough rind, smooth, waxy and ranging in hue from light-yellow to pumpkin-color. Within is an aromatic mass of membraneous sacs filled with orange-colored, pulpy juice and as many as 250 small, dark-brown seeds. The flavor is musky, guava-like and very acid.

HISTORY AND STATUS

The yellow passionfruit was, until recent years, largely overshadowed by the purple passionfruit (*Passiflora edulis* Sims.), a native of southern Brazil widely esteemed for its agreeable, less acid flavor (101). It has been stated that the yellow form is of unknown origin, but in recent Colombian writings it is presumed to be native to the Amazon region of Brazil. Speculation as to Australian origin (2) arose through the introduction of seeds from that country into Hawaii and the United States by E. N. Reasoner in 1923.

Brazil has long had a well-established passionfruit industry with large-scale juice extraction plants. The purple passionfruit is there preferred for consuming fresh; the yellow for juice processing and the making of preserves (65). Strains being grown for these purposes include "Ouropretano", "Muico", "Peroba" and "Pintado" (113).

In Australia, the purple passionfruit was flourishing and partially naturalized in coastal areas of Queensland before 1900. Its cultivation, especially on abandoned banana plantations, attained great importance and the crop was considered relatively disease-free and easily managed. However, about 1943, a widespread invasion of *Fusarium* wilt killed the vines and forced the undertaking of research to find fungus-resistant substitutes. It was discovered