

A WORD OR TWO ABOUT GARDENING

A taste for the exotic – some not so familiar tropical fruit trees

Since the 1980's there has been a realization of the need to diversify the range of tropical fruit trees grown in local Miami-Dade groves. Apart from the long-time staples, mango and avocado (which were the subject of a previous article), local growers are now producing litchis, longans, carambolas, mamey-sapote, jakfruit and sugar apples/atemoyas, amongst others. These same fruit trees are also becoming increasingly popular with homeowners. There are also other, less familiar tropical fruit trees, which although probably not commercially viable, are suitable for the backyard grower willing to try something new. Since it is now easier than ever to find a range of tropical fruit trees in local nurseries, availability is not an issue. You can request a list of local fruit tree nurseries from the UF/IFAS - Miami-Dade County Extension Service, 305 248 3311.

If you are considering planting an unfamiliar tropical fruit tree, be sure that the fruit you will harvest has sufficient appeal to warrant space for the tree in your yard. Don't rely on word of mouth recommendations - make an attempt to first taste the fruit! Ask a friend or neighbor, who is growing the fruit in question, for a sample. An increased variety of tropical fruit is now available in local markets and roadside stands. You can also look for displays of exotic fruit at local ethnic/agricultural festivals (samples for taste testing are sometimes available).

When you know what you like, decide whether you can consume all the fruit the tree is likely to produce. Fruit that is just allowed to fall from the tree can be messy and attract insects and unwanted wildlife. You will also need to review what space you have available in your yard. In this regard some trees, such as the litchi, sapodilla and camito, can also function as outstanding landscape/shade trees. This can be advantageous where space limits the number of different types of trees that can be planted. Finally, familiarize yourself with the necessary growing conditions, potential problems, and effort involved in maintaining a healthy and productive tree.

The fruit trees listed at the beginning of this article will be considered first since, with some commercial production in Miami-Dade, there is more local experience available as to cultural requirements. A subsequent article will review some of the less familiar tree borne tropical fruits, as well as those produced on plants other than trees and shrubs. Before discussing specific trees, some general comments are in order regarding tree installation and care. Plant your tree at the very start of the rainy season, even earlier (late March) if you have a dependable means of irrigation. The longer the tree has to become established before the onset of winter, the more likely it will withstand damage from cold weather. Allow at least 25 – 30' between neighboring trees and buildings (the sugar apple needs less space), selecting a site in full sun that is protected from cold, drying winds. Plant the tree at or just above grade, using soil excavated from the planting hole as backfill, avoiding heavy, black topsoil.

From bloom to harvest, as fruit develops on the tree, provide supplemental water during periods of hot, dry weather to prevent the soil from becoming excessively dry.

When not bearing fruit, there is much less need to water an established tree. Apply fertilizer such as an 8-3-9 (N/P/K) or one of the new 100% slow release 8-4-12 palm special fertilizers. Expect trace element deficiencies (e.g., iron, manganese and/or zinc) to develop on the calcareous soils of Miami-Dade. Correct by using appropriate soil drenches and foliar sprays. Contact the UF-IFAS/Miami-Dade County Extension Office (305 248 3311) for more detailed information.

Once you finally decide on a fruit tree for your yard, you will need to choose which of the available cultivars to purchase. There are many factors that enter into choosing a specific cultivar. Taste is of course important, but so also can be tree size, growth characteristics, productivity, season of harvest and disease susceptibility. In order to have the widest possible choice of cultivars, and expert assistance in making an informed decision, go to a nursery that specializes in fruit trees. The cultivars cited in this article are those recommended by Dr Carlos Balerdi (Commercial Fruit Tree Agent at the UF-IFAS/Miami-Dade County Extension Office) as most suitable for Miami-Dade homeowners. You may be considering growing a tree yourself from seed. Apart from the unpredictable quality of fruit from seed grown trees, it also takes them longer to bear fruit, compared to those propagated by vegetative means. It is usual to propagate the fruit trees discussed in this article by grafting onto a seedling rootstock (carambola, jakfruit, mamey-sapote and atemoya) or from air layers (litchi and longan).

The litchi (and to a lesser extent the longan), have rapidly gained in popularity with commercial and backyard growers. However both trees have earned a reputation as erratic producers. A good crop clearly cannot be expected if the tree fails to flower adequately. To bloom satisfactorily (February/March for litchi, extending through April for longan), both trees need to undergo some degree of prior stress during fall and early winter. For this reason it is imperative to withhold both water and fertilizer nitrogen after the end of August. The litchi cultivar 'Brewster' (formerly the most popular locally grown cultivar) can be expected to set a usable crop only once every 2 – 3 years. The cv. 'Mauritius' is more reliable, setting fruit most years, and for this reason is currently more widely grown. Anthracnose disease and fruit splitting have become such serious problems that there are now serious reservations about growing this cultivar. Dr. Balerdi is now of the opinion that if you must grow 'Mauritius', a regular spray program using a copper based fungicide is essential, commencing as soon as the tree comes into bloom. 'Mauritius' is also more liable to suffer storm damage due to poor branch structure. In place of 'Mauritius, Dr Balerdi recommends 'Hak-Ip' and Sweetheart', both sweeter and not quite as erratic as Brewster.

The principal pests of both litchi and longan are various scale insects, a webworm that can destroy bloom and a small bark-mining caterpillar that causes corky growths on stems. By itself this latter insect does not warrant control, however it is possible that it may exacerbate damage from bark scales. Cuban May beetles chew leaves, especially on young trees, and can be observed after dark. Another beetle, this a recently imported weevil native to Sri Lanka (*Mylocereus undatus*), also chews leaves but is visible during the day.

For longan Dr. Balerdi recommends the cultivar 'Kohala', which is currently the number one local choice. The longan is not as demanding as the litchi in its' requirements: better able to withstand wind, less dependant on cool weather in order to induce flowering, and somewhat less prone to pest and disease problems. There is however one very important cultural requirement when growing longans. It is essential to severely thin out the fruit, by about 50%, on reaching $\frac{1}{4}$ - $\frac{1}{2}$ ". Resist the temptation to leave all the fruit on the tree in expectation of a bumper crop. Failure to thin out fruit can lead to a rapid, possibly fatal tree decline. Fruit thinning will also ensure larger, better quality fruit when it is time to harvest (usually during August).

The carambola (star fruit) is grown almost as much for the decorative quality of the fruit as for its taste. The oblong, five-angled fruit is pale yellow to orangey yellow (when ripe), acid to semi-sweet, and on cross sectioning yields eye-catching, star shaped slices. The tree itself is an attractive addition to the landscape, with compound leaves and masses of small, mauve to pink flowers many of which sprout directly from the limbs. A carambola tree can grow to 25 –30'. However, with selective pruning trees can be maintained at 8 –12'. Carambola is susceptible to wind damage, which can cause excessive drying of foliage, and twig dieback. Trees should be situated in a protected area of the yard, and mulched (especially during winter) to conserve soil moisture. There are both sweet (e.g., 'Arkin' and 'Fwang Tung') and acidic ('Golden Star') cultivars. Fruit will only achieve maximum sweetness if allowed to fully ripen on the tree (no traces of green remaining). Once fully ripe, carambolas have a limited shelf life as fresh fruit. Pests and disease are normally not a problem for homeowners, though scale insects and root problems can occur, the latter more so where drainage is poor (e.g., marl).

Compared to the trees discussed above, local interest in both the mamey-sapote (*Pouteria sapota*) and jakfruit is far more recent. Once relatively unknown in Miami-Dade outside the Cuban- American community, the mamey sapote is becoming more widely appreciated. Growing to about 40' in south Florida, the mamey sapote makes a handsome shade tree, however it is easier to manage as a fruit tree if kept to a height of about 14'. The fruit is an oval to egg shaped, 3-8" berry, with a rough, leathery skin, and reddish pink pulp surrounding a large seed. The pulp is sweet and somewhat reminiscent of apricot. This is not a drought tolerant tree, requiring supplemental water during extended dry periods, and especially when bearing fruit. Insufficient soil moisture is believed to be a contributing factor to large fruit dropping from the tree. It is also crucial to avoid excessively wet soils, either from poor drainage or over watering. Avoid removing fruit before it is mature, as immature fruit will not ripen off the tree. Judging when fruit is ready to pick can be difficult, though one reliable method is to lightly scratch away the outer scurfy layer of skin. If the underneath is an orangey red, the fruit is ready to pick and should fully ripen within a week. Fruit takes more than a year to fully mature, the time of year it reaches maturity depending on the cultivar planted. For 'Pantin', the most widely grown cultivar (also known locally as 'Key West'), most of the crop matures from July – September. Individual trees will often be in flower, whilst at the same time bearing both immature and fully mature fruit.

Although the breadfruit tree is too tropical to be reliable in Miami-Dade (it can be grown in the Lower Keys), the related jakfruit has proved well adapted to Miami-Dade growing conditions. The fruit is technically a syncarp, composed of a mass of multiple small fruits that in essence coalesce together, like a pineapple, to produce a single large fruit. It is in fact, the largest known tree borne fruit. Jakfruit is a multi-purpose fruit: cooked as a vegetable when mature but green, the pulp from fully ripe fruit eaten as a desert fruit, and the seeds themselves cooked or roasted. The tree requires full sun, and must be located where there is minimal risk of flooding. Since trees readily become root bound, they should not be left in the original container for a prolonged period. Root bound trees are difficult to establish, and it is advisable to plant the tree as soon as possible after it is purchased. Growing to more than 30' locally, the tree can be maintained at 12-15' with annual pruning.

Jakfruit trees are monoecious, with imperfect flowers (separate male and female flowers on the same tree). The male inflorescence is a stout, 2-4" catkin-like cluster of many minute flowers, whereas the female inflorescence is more rounded, with a thicker peduncle (stalk). Keep these differences in mind, since concern can arise if the male inflorescence turns black and is mistakenly identified as diseased, immature fruit. Planting more than one cultivar to facilitate cross-pollination is essential for good fruit production. However, a single tree will provide sufficient fruit for most homeowners. Ripe fruit turns yellow or light green, and can have an intense odor. For this reason it is advisable to remove the seeds and edible flesh outdoors. There many cultivars to choose from including 'N-S-1', 'Singapore', 'Ceylon', 'J-31', 'Honey Gold' and 'Black Gold'.

I have left my own favorite, the atemoya, until last. This tree and the smaller sugar apple are locally the two most widely grown members of the Annonaceae (also includes soursop and custard apple). The atemoya is a hybrid between the sugar apple (*Annona squamosa*) and cherimoya (*Annona cherimola*). This latter fruit is poorly adapted to south Florida, but is sometimes confused with the custard apple (*Annona reticulata*), which in Cuba is known as the chirimoya. The atemoya and sugar apple have custard-like pulp, with the atemoya being less sweet, but with a more distinctive flavor (a cross between pineapple and banana). Both trees have similar cultural requirements, though the sugar apple is more tolerant of poor soil and drought. Sugar apples can be grown from seed, but atemoya is usually grafted, 'Gefner' being the leading cultivar. Hand pollination can greatly improve fruit set and reduce the number of malformed fruit due to incomplete pollination. Use a fine, squirrel hair artists brush to transfer pollen from flowers that have their fleshy petals fully open (functionally male) to those that are partially open (functionally female). Fruit should be covered with a brown paper bag before reaching 2", as protection from the annona seed borer. Damage from the larvae of this small wasp leads to fruit rotting on the tree, which eventually becomes black and mummified.

For advice on storing and preserving your fruit crop, as well as some tempting recipes to enhance the enjoyment of the above tropical delights, contact Jackie Gibson (UF-IFAS/Miami-Dade County Food and Nutrition Agent) at 305 888-5010.