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TROPICAL AND SUBTROPICAL FRUIT TREE SIZE CONTROL FOR BACKYARD GROWERS

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Abstract. Backyard growers have several ways of controlling tree size. The first one is to choose species/cultivars that are small or that fit available space. Tropical fruit species are genetically small, medium and large sized. Another method of controlling tree size is through dwarfing stocks, using dwarfing interstocks or even using inverted grafts. The third system of tree size control is through pruning. These systems will be discussed in this paper.

The use of tropical and subtropical fruits in backyard plantings of South Florida is very common. Citrus, avocados and mangos top the list of most commonly planted trees. Problems arise when backyard growers fail to consider available space, size of tree species and pruning requirements. A discussion of the methods to control tree size follows.

Controlling Tree Size by Choosing the Proper Species for Available Space

The above tables can be used by backyard growers as a guide to make decisions on the species adaptation to different spaces. Some pruning is always required and recommended. With proper pruning some species may be grown in smaller spacing, i.e., guava, carambola, compact mangos, etc.

Controlling Tree Size Using Dwarfing Stocks, Interstocks and Inverted Grafts

Dwarfing stocks are not commonly used in tropical fruits. Most of the work has been done with *Citrus* (Castle et al., 1989) and some with mangos and avocados but, in South Florida, nurseries are not offering trees with dwarfing stocks. Dwarf types of cashew and coconut are available in Brazil and dwarf ambarella is available in Florida.

Wasielowski and Campbell (2000), using inverted root grafts of canistel, green sapote, mamey sapote and jackfruit, were able to produce dwarfish, very precocious trees of these species. Growing trees in large containers results in smaller trees and there are some backyard growers that are using this technique in South Florida.

Table 1. Trees that need small spaces (less than 15 feet).

Banana/Plantain	Kumquat	Pineapple
Berries	Monstera	Pitaya
Dwarf ambarella	Papaya	Sugarapple
Dwarf cashew	Passion fruit	

Pruning

Pruning is the removal of any plant part with a purpose. A major pruning objective that is vastly underused by backyard growers is to reduce tree size (volume, width, height). Other objectives that can also be used by backyard growers to their advantage are to remove crossed, damaged, diseased or dead branches (Gilman, 1997); to improve tree shape, form or structure; to renovate canopy; to remove fruit to increase fruit size; and to improve fruit color and to increase number of shoots, among others. Every grower should have a yearly plan that uses pruning to achieve the above mentioned objectives. Root pruning can be used to reduce tree size but is not often used and there is danger of root diseases appearing due to the open wounds on the roots.

There are many reasons why backyard growers do not control tree size. Probably, ignorance is one of the most important ones. Others buy their properties with trees that have never been pruned. Loss of production from 1 to 3 years may result from severe pruning. Pruning should begin or be considered from the moment a fruit tree is planted. Basic tree structure is usually accomplished within the first three years after planting. Afterwards, fruit tree size can be easily controlled with only light pruning.

Many tropical fruit trees produce their fruit on shoot tips. With this in mind, beginning 6-8 months after planting, pinching (removing) 1 to 2 inches from shoot tips should be done from spring to summer once or twice per year. The tipping will result in the germination of buds just below the cuts. Two to three new shoots form from every tip cut. The result is a good branch structure, a dense canopy and a compact tree with a large number of shoot tips which will increase the potential for good production. This practice is usually done the first 2 or 3 years only. Any fruit that is set should be removed the first two years.

Table 2. Trees that need moderate spaces (15-20 feet).²

Ambarella	Jaboticaba	Pummelo
Carambola	Mandarines	Sweet Lime
Dwarf cashew	Oranges	Tahiti Lime
Guava		Spondias

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²Some trees can be fitted in smaller spaces.

Table 3. Trees that need large spaces (>23 ft.).²

Avocado	Jackfruit	Mamey sapote
Caimito	Longan	Mango
Canistel	Lychee	Sapodilla

²Some trees can be fitted in smaller spaces.

The third year and thereafter, trees may be allowed to carry a crop, provided it is not excessive. Trees should be topped to reduce height and hedged to reduce diameter right after harvest every year. Trees should have a pyramidal shape (wider at the bottom than at the top). This shape allows light to reach the bottom canopy to avoid lower canopy loss. Low branches, beginning 1-1.5 ft from ground level, should never be removed as this is the area easiest to pick and spray. Unfortunately, the removal of low branches, sometimes up to 5-7 feet “to show main branches” and “to be able to mow under the canopy!”, is a very common practice among backyard growers. By doing this, growers are sometimes losing 1/3 or more of the productive canopy. There should be a minimum of 6 feet separation from other trees or structures to avoid losing the lower canopy. Also, to avoid excessive pruning and danger, never plant trees that can reach electric cables after a few years of growth.

Pruning Freeze Damaged Trees

The homeowner should wait 3 to 6 months after a severe freeze (temperatures 20-26 °F) before removing dead branches as freeze damage takes a long time to show up.

Pruning Hurricane Damaged Trees

Fallen trees should be placed upright as soon as possible after a hurricane, with parts of top removed if necessary. The roots or parts of roots that interfere with standing up a tree should be removed. In order to fit in as many roots as possible, a hole wide enough to accommodate them should be prepared. These holes should be watered before and after trees are reset. Thereafter, trees must be watered regularly to keep the soil moist but not wet. The use of supports to stabilize trees is very helpful after standing up trees to prevent them from falling again. If unable to stand up fallen trees for a while, roots and trunks should be covered with brush or other cover to avoid sunburn damage. Also, these trees should be watered daily until they can be stood up. Branches that are broken should be pruned down to undamaged areas. Large cuts should be treated with a fungicide solution to help prevent diseases.

By following the suggestions discussed in this paper, backyard growers can have trees that are structurally safe, well shaped and productive for a long time.

Literature Cited

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