PLANTING AND MANAGEMENT OF TROPICAL AND SUBTROPICAL FRUIT TREES IN THE HOME LANDSCAPE

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Abstract. Production and use of tropical and subtropical fruits in the home grove is a valuable asset in the life, the environment, the esthetics of the home landscape, and the diet and nutritional well being of the home grove operator and family. Planning the tropical and subtropical fruit grove in the home landscape is the first step toward good home grove management. Planting trees properly is the second step toward the good management program of a tropical and subtropical fruit grove in the home landscape. Prevention and control of disease and insect problems, integrated nutrition and irrigation programs, and elimination of competitive plants make up the third step in good management. Enjoyment of producing, harvesting, handling and using fruits from the home landscape is the ultimate purpose for planting and management of the home grove.

More than 200 kinds of tropical and subtropical fruits may be grown as part of the home landscape in a remarkably extensive area of the Floridan peninsula along the east coast from Brevard County south to Key West and from Pinellas County on the west coast south to the tip of the mainland.

The largest concentration of tropical fruit trees are found in Dade County, Broward County and Palm Beach County (near the coast) with many coastal and scattered interior plantings in Collier, Lee, Charlotte, Sarasota, Manatee, and Pinellas Counties. Among the west coast counties fewer plantings probably result from lack of knowledge and enthusiasm for tropical fruits. Other tropical fruit plantings in diminishing order northward may be found around Lake Okeechobee and in scattered locations in Central Florida where the trees are in protected warm areas or may be protected from extreme cold but periodically will suffer moderate to severe freeze damage. Some cold hardy varieties of avocados, for example, may be found growing in Gainesville, Jacksonville, Florida, and as far north as Thomasville, Georgia.

Among the criteria for planting in the tropical fruit home grove must be the climatic requirements of the various tropical fruit trees in terms of the tastes and needs of the consumer. It is discouraging and a waste of time and money to plant an edible commodity that no one in the family cares for.

Planting sites should be developed also in terms of contour, site shape, light intensity and hours of sunlight. Proximity of salt water or salt pollution should also be determined. Contour applies mainly to water, drainage and cold pockets. The shape of the planting site should be considered in terms of directional orientation; linear, curvilinear or angled land shape. Light intensity and hours of daylight apply and are influenced by location, shading, surrounding structures and other growth. In general most tropical fruit trees require full day length and high light intensity.

The home grove in terms of esthetics may be planted in groups or as bays along the property lines. Most tropical fruit trees are attractive and may even be planted individually as specimen trees. It is usually most desirable to plant fruit trees away from the areas of pedestrian and vehicular traffic in order to provide some security and assurance of harvesting the crop for home use.

"A $5.00 tree in a 50¢ hole or a 50¢ tree in a $5.00 hole," this old saying applies mainly to the size of the tree hole, especially on rock soils, supplemental planting soil if needed and proper planting technique. In this day and time of inflation tree hole costs have doubled and tripled but so have the purchase prices of many trees. Consequently, it is more important than ever in terms of costs alone to plant a tree properly.

Two of the weakest areas in tree planting, which may result in poor initial growth or even loss of trees, are not maintaining good soil moisture in the root ball nor keeping the bare root-ed tree roots moist before and during the planting process. These inattentions result in wilting and if not corrected immediately could cause dieback and even the loss of the tree.

Under Florida conditions and depending upon soil drainage and soil aeration, fruit trees should be set a few inches to several inches higher than the surrounding grade. If the soil is loose and well aerated such as sandy, rocky or rock and...
sand soils, the soil should be compacted from the outer edges of the tree hole without touching the root ball. Heavy soils, marls for example, should never be compacted because of the danger from poor aeration and poor drainage. Bare rooted trees should be "mudded in" when planted in loose or coarse soils.

Good aeration is more important than the moisture holding capacity of the soil. Supplemental water can always be added to dry soils but poorly aerated soils are difficult to do anything about after a tree has been planted. However, aeration and soil moisture are interdependent and under good conditions result in good root growth followed by good tree growth. Heavy soil may be made well aerated, and sandy or coarse soils may be given improved moisture holding capacity by mixing in composts, peat, wood chips, perlite, or other materials.

Selecting the desirable rootstock, species or variety planting in the proper location, and in a properly prepared hole at the proper depth, will strongly influence the initial success or failure of the home grove.

The second phase of the home grove is post planting care. This includes the use of supplemental irrigation by sprinklers, hose or drip systems, applied at a rate and frequency that will prevent the root ball and the surrounding soil from drying out. This does not mean that the need for aeration should be forgotten. Excessive water in the soil usually leads to root rot from lack of aeration or from diseases induced by poor aeration.

In most areas of Florida natural soil fertility is poor. Although some fertilizers or composts may be mixed into the tree hole soil, a nutritional program using fertilizers and nutritional sprays, if necessary, should be initiated immediately or as soon as possible after trees are planted. Fertilizers should be applied starting with minute quantities measured in tablespoons applied to the soil of the existing root ball and well beyond the periphery of the root ball at 30 to 60 day intervals during the first year.

The quantities of the fertilizers and areas of applications should be increased gradually to correlate with the expanding growth of branches and roots. In areas where trace elements applied to the soil may not be available to the tree because of high pH, high soil calcium or excessive copper or phosphorus in the soil, a foliar application of these elements may be used effectively one to three times a year in order to provide the proper levels of nutrients.

In the first year or two, in general, fertilizers with a 1-1-1 ratio such as 6-6-6, 8-8-8 or others, should be used. As the tree comes into bearing or in the third year, and thereafter, the phosphorus level of the fertilizer may be reduced. Needs for calcium and magnesium should be determined at the local level as through the County Cooperative Extension office.

Weeds and, in this case, lawns may be considered as weeds, are highly competitive for nutrients and water in the home grove. For esthetic purposes, however, most home grove owners do not wish to have bare soil under their fruit trees; therefore, if lawns or ground covers are permitted under the tree canopy, extra fertilizer should be applied over that soil area from the trunk of the tree to the ends of the branches.

A practice not recommended because of the danger of root rots induced by root damage, especially in fruit trees, is to punch holes through the ground cover and fill the holes with fertilizers. Properly distributed fertilizer preceded by a thorough irrigation and followed by another application of irrigation water will leach the soluble nutrients below the root zone of the ground covers.

Ground covers, such as lawn grasses and other plants, or mulches, induce root rots or foot rot by providing a highly humid environment for diseases. Also when ground covers are trimmed or mowed damage frequently occurs to the trunk or roots of the tree from improper use of the equipment.

Uses of mulches although highly beneficial, may have a deleterious affect as well. Green mulches, applied in amounts in excess of two to three inches per application have frequently, through anaerobic decay, resulted in toxicity problems. Heavy mulches may also result in toxicity problems as well as excessively wet soils and resultant root rots.

Root diseases generally result from poor planting technique, location, excessive water or root or trunk damage. Good drainage, proper planting practices and good soil aeration will prevent this.

Other diseases of tropical fruit trees mainly topical in nature may cause defoliation and dieback.

Prevention and control of tropical fruit diseases through chemical means is seriously limited by the lack of approval of agricultural pesticides for use on the multitudes of different kinds of tropical fruits. Therefore, location and good management of the home grove is important to provide good air movement, good light intensity and
long days to encourage rapid drying of foliage and fruits after nights of heavy moisture condensation or extended rainfall.

Use of copper as a fungicide and sulfur as a mildewcide have been relatively effective in prevention and control of most diseases.

Timing of applications of disease control chemicals is highly important to the success of the program. Insects attacking or infesting tropical fruits or tropical fruit trees are more varied and perhaps more critical problems than diseases. These insect pests include aphids, many kinds of scale, katydids, thrips, leaf feeding beetles, leaf feeding larva of beetles, moths and butterflies, root feeding larva.

Again, a lack of labeling or label approvals limits the home grove owner to just a few insecticides, scaldicides and miticides. Horticultural oil in most cases is perfectly safe to use for scale, white fly and spider mite control and needs no label approval. Other scaldicides should be used only as permitted by the insecticide label. Sulfur in addition to being a good mildewcide is also a relatively good miticide. Sulfur and oil sprays should never be used together nor within three weeks of each other.

Caribbean Fruit Fly control, still in the intensive research stage, may be resolved through biological control as may be the Papaya Fruit Fly. These two fruit fly pests have not been controlled through the use of approved insecticides.

Ambrosia beetles boring into tree branches have created certain problems in some areas.

Bark scales on tropical fruit trees may result in severe symptoms of necrosis on the leaves and could result in severe dieback.

Nematodes are serious problems on Barbados cherries, figs and peaches on non-resistant root stocks, and avocados under certain conditions. Nematodes again may be used only as permitted by the label.

Cold weather, especially chilling winds and temperatures below 45°F, have limited certain of the tropical fruits such as breadfruit except in the lower Florida Keys. Most tropical varieties of fruits may be lightly or severely damaged by temperatures of 28°F of short duration. Warmer locations are a must in arranging the fruit tree in the home landscape. Cold protection, however, may be achieved through the use of proper sprinkler systems delivering not less than .25 inch of water per hour even though the results may appear to be disastrous when the entire tree becomes encased in ice. Should this occur the sprinklers must continue to run throughout the freezing period until the ice has melted away.

Certain cold protection advantages are gained by having completely bare and moist soil in the home grove. This permits the soil to give up its heat with resultant limited protection as the radiant energy is absorbed within the canopy of the tree over the bare soil. Heating devices of the non polluting kind may also be used and are especially effective with some sort of cover over the tree if practicable.

The final enjoyment attained is the putting together of the pleasures of planting and management of the tropical and subtropical fruit trees in the home landscape, the beauty of the trees and their fruit, the joy of the harvest, and the pleasures of eating the tropical fruits in various home processed products.

Here listed are publications available through the County Cooperative Extension Departments specifically for culture and use of tropical fruits:

1. The Avocado, Fruit Crops Fact Sheet #3, S.E. Malo and C.W. Campbell.
2. El Aguacate, (Spanish) Fruit Crops Fact Sheet #3, S.E. Malo and C.W. Campbell.
3. How to Grow Your Own Avocado Tree, Extension Circular #340, James Soule and Fred Lawrence.
4. The Banana, Fruit Crops Fact Sheet #10, S.E. Malo and C.W. Campbell.
5. Budding, Extension Mime, Dr. Larry K. Jackson.
6. The Carambola, Fruit Crops Fact Sheet #12, C.W. Campbell and S.E. Malo.
12. Foot Rot On Citrus, Homestead Mimeo #1, Seymour Goldweber.
13. Red Alga On Limes, Lemons, Other Citrus,
Plants for Mobile Homes

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Abstract. More and more Floridians are finding mobile home living the answer to their housing needs. Approximately one of every five people in Florida live in a mobile home. Landscaping these small lots is quite different from that of a conventional home. Often the mobile homes are in extremes of the environment, either full sun or dense shade. Commercial nurserymen in Florida could greatly increase production and sales of plants for mobile homes.

Sales could be increased by carrying plants suitable for growing in containers in the landscape. Some plants which grow rapidly and could be used for mobile home landscaping are: Codiaeum spp., Araucaria heterophylla, Cercis canadensis, Hibiscus spp., and Pinus spp. Liriope spp., Ophiopogon spp., Ajuga reptans and other dwarf ground covers would also be invaluable on these small lots.

Today the mobile home community present an economical concept in living for many people. Mobile homes are becoming increasingly popular in Florida as a result of the mild climate, the high proportion of retirees, a large number of young people, and the high costs involved in construction of permanent housing. Versatility is another of the many reasons for the increased popularity of mobile homes in recent years. No longer is the mobile home just for those families that move a great deal or for people who otherwise could not afford a house. Many people are purchasing these homes and locating them on their own land as a permanent residence.

Presently, there are about 800,000 mobile homes in Florida covering approximately 11,000 acres. These numbers are expected to exceed 1 million by 1985 as a result of population growth and higher construction costs. If just $15 were spent yearly by each owner for landscaping around the 800,000 mobile homes in Florida, that would be $12 million in sales.