ADAPTABILITY OF FLORIDA FRUIT TREES TO LANDSCAPE USE

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The wide selection of fruits that are so well adapted for landscape use in Florida simplifies the problem of living more completely on a small plot of land. This approach to the landscape problem is particularly important to many of our retired home owners who are interested in the recreation of maintaining the home grounds as well as having as wide a variety of home grown fruits as possible.

First let's have a look to see what the landscape plan is supposed to do. A good landscape job must (1) improve the looks of the home and home grounds, (2) increase the utility of the grounds, (3) increase the value of the property and (4) add to the enjoyment and recreational activities of the home.

It is rather unfortunate that more emphasis is not placed on fruit-producing plants in our landscape designs. Is there anyone who can deny that many of the trees and shrubs grown in Florida which produce edible fruits are some of the most ornamental plants available? When used and maintained properly in a landscape plan they certainly fulfill the first requirement of landscaping—improve the beauty of the home and the property.

In addition to providing beauty—an intangible and relative item—fruiting trees can provide shade and food for the family. This food item is important to most families. Fruits, as a basic part of the diet, are items many families cannot afford, some will not bother to buy, but all need them for a balanced, healthful diet. Although strictly ornamental trees will increase the utility of the home grounds by providing shade and scaling effects for the home itself, fruiting trees do this, PLUS providing food—healthful food—for the family.

How about increasing the value of the property? Do not fruiting trees and shrubs—when used properly to blend in the landscape picture—do double duty in increasing real estate values? Contractors have told me that the average landscape plan will increase the value of property by 15%—quite an increase. This is considering only ornamental plants used as landscape features. When fruiting trees and shrubs are used effectively they provide an additional attraction and talking point for retired personnel.

I certainly do not mean to imply that fruiting plants alone should be used in the landscape picture for this could create a monotonous situation. The ideal situation is a mixture of plants used for their ornamental value along with plants used for their ornamental and fruiting values.

Where can fruiting plants be used in the landscape plan? There are sufficient varieties to fit into every phase of any landscape plan—as base plants, border and screening plants, as accent plants and as shade and scaling features.

In Florida, with its wide climatic variations, our choices range from deciduous fruits, common to northern states, to the most tropical of plants rare in all other areas of the United States. Certainly our choices are restricted by the area of the state in which we live. But regardless of area we should be able to have fruiting plants for any landscape feature and variety enough to provide fruit for the family table all seasons of the year.

Obviously in only 15 minutes we cannot cover all of the fruits available and list their landscape adaptability, but let's cover typical examples for all areas of the State. For purposes of discussion let's divide Florida into three areas—North and Northwest Florida, Central Florida and South Florida. Included in North and Northwest Florida is that area north of the northern boundaries of Citrus, Marion and Volusia Counties. From this point south to the southern boundaries of Hillsborough, Polk, Osceola and Brevard Counties will be considered Central Florida and the remainder of the State will be considered South Florida.

One of the outstanding shade trees and one well adapted to scaling large properties is the pecan. It is ideal as a background or foreground tree and for an area where shade is desired in the summer and sun in the winter. It is a large tree with varieties that produce upright growth habits and others that produce rounded tops. The pecan sheds its leaves rapidly which makes the cleanup job easier...
than when oaks or other slow-shedders are used. The major disadvantage to this fruit is scab which often completely destroys the crop of nuts. Home owners should only plant scab resistant varieties such as Stuart, Curtis, Elliot, Russel, Waukeenah and Farley, for it would be too expensive to spray for the control of this disease pest.

In lieu of redbud, Cercis canadensis, or flowering dogwood, Cornus florida, why not use the crab apple, Pyrus augustifolia, with its showy flowers and edible fruit and satsumas, Citrus reticulata, kumquats, Fortunella spp. or citrangequats, a cold hardy trispecific hybrid, with their dark green, fine-textured foliage, willowy growth habits, beautiful white, fragrant flowers and colorful yellow-orange fruit.

The kumquats, F. japonica, round kumquats, and F. margarita, oval kumquats are small, bushy trees that can be used in any shrubbery border or as corner subjects in the base plantings from this area south.

Citrus varieties in this area should be bud- ed on rootstocks which will give them the greatest degree of cold hardiness such as Poncirus trifoliata and Severinia buxifolia. The S. buxifolia also produces a dwarfing effect which is especially desirable where the tree is to be used on small properties.

The fig, Ficus carica, with its low branching habits can be used effectively in the enclosing border, or around unsightly objects such as woodpiles, to hide them from view. Its coarse textured leaves and branches and general grey-green color adds interest and lends it to use as a scaling subject. Fig roots are among the most susceptible to the root-knot nematode and thus heavy mulching should be practiced. Apparently no nematode-resistant variety of fig has been found.

As a shrub in this area what could be prettier than the blueberry? It is a close relative of and combines well with the azalea and likes the same acid soil conditions. Blueberries provide yellow, gold and red fall colors plus the excellent combination of pink flowers and blue fruit. For home use the rabbit-eye type, Vaccinium ashei, is recommended. Evergreen varieties, Vaccinium ovalum, are now available which are prized as ornamental plants. Such varieties can be used in base plantings or in bordering hedges. Grapes, blackberries, raspberries, and dewberries can be used, when trimmed properly, as low shrubbery borders or along fence rows. They are also adaptable for pattern effects and screening on wire fences.

The myrtle family gives an excellent landscape fruit for this area—Feijoa sellowiana, commonly known as pineapple guava. If left unpruned this is a small tree, but can be used in the base planting or in the enclosing shrubbery border. It makes a beautiful contrast tree in an ornamental planting since the leaves are glossy bluish green on the upper surface and silver grey on the lower.

Central Florida homeowners have a wealth of semi-tropical fruiting material to choose from in making up their landscape plan. This area is too warm for most of the deciduous fruiting crops and they should be left for the more northern areas.

When thinking of fruit production in this area of the State one can't help thinking first of citrus since this fruit is so well known for its commercial value. In addition to the regular round oranges, tangerines and grapefruit which are beautiful trees in any landscape plan, homeowners should be on the lookout for the new citrus hybrids that are being released. The tangelos, crosses between tangerines, Citrus reticulata and grapefruit, C. paradisi, tangors, crosses between tangerines, C. reticulata and sweet oranges, C. sinensis, are especially desirable from a landscape point of view. Other hybrids such as limequats, citrangequats, and tangequats, citrumelos, citrandarins have tree growth habits to fit almost any spot and fruits for any occasion.

Of the more common citrus varieties the mandarins or kid glove group of citrus are generally good for enclosing borders and corner plantings. Many varieties in this group such as the King are upright in habit with large, broad leaves and deep orange colored fruit. Other varieties such as the Dancy tangerine and Ponkan have willowy habits of growth that offer excellent contrast in developing interesting texture groupings in the landscape plan. The Ponkan can be trained as a dwarf.

Bright yellow-fruited lemons and limes with their intense green fruits have low, bushy growth characteristics and almost year round bearing habits that make them desirable in any border planting where privacy is desired. For a specimen tree that will draw attention at any time of year you can't beat a calamondin, C. mitis, with its acid fruit. This stately tree with its columnar habit of growth and
small, yellow, tangerine-like fruit is outstanding. In addition it is a good corner plant for large buildings.

Before leaving the Rutaceae family let's discuss a citrus relative that more homeowners should know about and use. It is the white-sapote, Casimiroa edulis. It can be used with safety in the lower half of the Central section and throughout the Southern area. The thin-skinned fruit of this tree has a rich golden yellow color, tinged with green. It is rich in vitamin C and A and nearly as rich in carbohydrates and proteins as the banana. The foliage varies from light to dark green but is always bright and attractive.

The avocado, Persea americana, a member of the Lauraceae or laurel family is one of the most pleasant of dooryard trees and has, for many years, been important because of the food supply it offered early settlers. It gives excellent shade and because of its stately proportions is unexcelled as a specimen tree.

For sheer beauty as a specimen subject or, because of its low branching habits, as a link in the enclosing shrubbery border you can't beat the Lychee, Litchi chinensis. Nothing can be more ornamental than this semi-tropical tree when it is loaded with its clusters of small light red fruit. The flowers are also attractive and the leaves in young growth flushes tend to have an orange coppery red color. The trees are evergreen, round topped with beautifully drooping pinnate leaves.

Don't forget the relatively insect-and disease-free loquat, Eriobotrya japonica. It is generally a rounded, spreading tree with dark green leaves which often grow to a foot in length on succulent shoots. It is an interesting study in texture and can be used to offer contrast and a big-leaved tropical atmosphere.

In any area where a tropical effect is desired—whether in the base planting or out on the property line the papaya, Carica papaya, serves well due to its coarse textured leaves, stems and fruits. This is hardly a tree, but is more herb-like due to its succulence. It's big leaves give a decided tropical effect and its fruit is one of the choicest of all tropical dishes.

For hedge and base plants or small trees, Central Floridians can use feijoa, as mentioned for the northern section, cattley guava, Psidium cattleianum, with its glossy foliage and coppery red or yellow fruit, pitanga, or surinam cherry, Eugenia uniflora, which has dainty small, creamy flowers that are especially attractive if coppery-colored young leaves are present, and downy myrtle or hill gooseberry, Rhodomyrtus tomentosa, with its light green smooth leaves and rose-pink to light purple flowers.

South Florida with its tropical climate can be the showiest, and most unusual-looking and exotic of the three areas with such an unlimited number of rare fruiting plants to choose from in planning home landscapes. Of course many of the plants mentioned for the other sections of the State can be grown as well here.

In the large-tree class to provide shade, scaling and special interest are several of the tropical fruiting trees. Ace among these is the mango, Mangifera indica, with its ornamental leaves that are at first a rich, coppery-red or purple then light green, slowly developing into the characteristic dark green. The fruit is one of the finest in the tropics and while hanging on the tree is a definite attraction.

The finely pinnate foliage of the tamarind, Tamardinus indica, makes it a prized ornamental. Its relatively open foliage makes this tree an excellent specimen in any location where it's important to have shrubs, flowers or grass growing under a tree. The attractive flowers have yellow petals with red veins. Incidentally, the fruit of this legume is delicious eaten fresh or prepared into drinks, preserves and chutneys.

The star apple, Chrysophyllum cainito, has dark green, waxy leaves with bronze, pubescent undercoats and is one of the most beautiful of tropical trees. It is slightly larger than the sapodilla, Anchras zapota, another outstanding dooryard tree. Branches of the sapodilla meet the trunk at nearly right angles and are strongly attached. It also provides chicle used in the manufacture of chewing gum.

For smaller trees and those with low branching habit that can be used in enclosing shrubbery borders there are the jaboticaba, Myrciaria cauliflora, with its interesting and unusual flowering and fruiting habits, and mangosteen, Garcinia mangostana, with its fruit that is acclaimed by travelers as having the best flavor of any fruit in the tropics. The tree has deep green, leathery leaves 6 to 10 inches long.

Also in the small tree class is the common guava, Psidium guajava, with its attractive
foliage and bright, smooth bark. There are seedling selections now available that are practically seedless.

Fruiting plants adaptable as shrubs include Governor’s plum, *Flacourtia indica*, kei-apple, *Dovyalis caffra*, Ceylon gooseberry, *Dovyalis hebecarpa* and the Barbados cherry, *Malphighia glabra*, which is one of the best sources of vitamin C known.

There are so many others that could be used and named such as the banana, coconut, cashew nut, but time and space does not permit listing even all of the most important species of plants adaptable for landscape uses that serve also to provide delicious and nourishing fruits for family meals.

The important point to stress, in my opinion, is that Floridians should never complete a landscape plan without using at least one fruiting plant in the design and certainly no home-owning family in the State should be without a home-grown supply of fruits.

**COMMERCIAL PRODUCTION OF CROPS IN HYDROPONICS**

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Hydroponic is one of the several terms applied to a method of growing plants without the use of soil. A more descriptive term is “Nutriculture,” which may be defined as any method of growing plants without using a natural soil complex, with the essential mineral elements added in a synthetically prepared nutrient solution or ion exchange complex.

There are three general methods used in the production of crops with nutrient solutions. These are (1) sand culture; (2) water culture; (3) subirrigation culture, also called gravel culture.

In the sand culture method the beds or containers are filled with sand and the nutrient solution is applied to the surface of the sand. This method is simple and is capable of producing good crops, but its main usefulness is found in experimental studies. It is not very well suited for large-scale production of crops because it is wasteful of water and nutrient solution. Also, if not covered, the sand becomes waterlogged during rainy periods and the roots are damaged from lack of air.

The water-culture method received much attention during the 1930’s. Workers in California used this method for production of crops, the Agricultural Experiment Station there contributing much toward its development. Plants are grown with their roots suspended in shallow tanks of nutrient solution. The plants are supported over the tanks by wire netting, hardware cloth, or some other material. The solution must be aerated in order to supply sufficient oxygen to the roots. This can be done by mixing air with the solution as it is circulated or by bubbling air into the solution. This need for aerating the solution and the difficulty of supporting the plants are disadvantages of this method. Also the control of the composition of the nutrient solution is more exacting than in the other methods of soilless culture.

In the subirrigation method of culture, watertight beds or benches are filled with gravel or other suitable inert material which is irrigated from the bottom of the bed. This method overcomes many of the limitations of the sand-culture and water culture systems. The New Jersey and Indiana Agricultural Experiment Stations did most of the original work on this system. This is the system that has been adopted in Florida. Some modifications have been developed through the years and undoubtedly other changes will occur. It is known here in Florida as the gravel culture, open flume system.

With this system all of the solution is carried to and from the beds by means of a flume so that no piping or valves are necessary except at the sump tank when the solution is stored in an overhead tank, or at the pump when a below-ground cistern is used.

The beds are built of suitably reinforced concrete, although some of the latest gardens here in Florida have decreased their construction cost by pouring the concrete bottom of the bed separately and making the sides of concrete blocks. The bottoms of the beds slope slightly from sides to middle, with a