

From the President  
Charles Novak

If you missed the Christmas party, you missed some really great food and wine. I want to thank all who came and brought food, drinks and fresh fruits to share. Also, everyone who came was able to choose a door prize. Bob, Alice, Lillian, Arnold and Linda, thank you for your help in cleaning and decorating the clubhouse.

We still need more members to help at the Florida State Fair. Helping with the Fair is not only interesting but you will also receive free tickets. Call me or sign-up at our January meeting.

Ed Musgrave needs additional volunteers to sign up for the club expansion committee. Note: You do not need to know how to use a hammer.

If you would like to be on the club board, please advise John Van Der Hoek or me. Being on the club board is a honor. Please be willing to put in time on club projects.

Our January speaker (Dr. Ralph H. Sharpe) will speak on the Pineapple Guava and on how The University of Florida is developing new varieties of fruit.

The following is a list of scheduled programs/speakers for the next 6 months.

January:	Dr. Ralph H. Sharpe, U of FL, Gainesville (Pineapple Guava)
February:	Don Chafin - Homestead (Bananas)
March:	Pre-sale and sign-up meeting and Ask the Experts. (More information to follow)
March:	22nd and 23rd Annual Plant Sale (Free Plant for all members who work both days)
April:	USF two-day Spring Sale
May:	Gene Joyner
June:	Vivian Murray - The Treehouse

In the spotlight this month are two of our hard working club members:

Frank Burhenn for the many hours he spends keeping the grass cut on the clubhouse property.

Gerald Amyot for providing the delicious smoked turkeys for our last two Christmas parties.

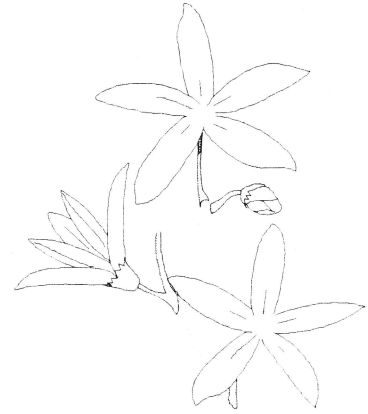
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 Florida Agricultural Information Retrieval System (FAIRS)

## CITRUS HANDBOOK

### GROWING CITRUS IN THE DOORYARD

by L. K. Jackson

Citrus trees can be an important part of the landscape for many Florida homeowners. They are both useful ornamental trees and can provide an abundance of delicious fruit for the grower. Citrus is, however, a subtropical fruit tree and its culture is limited to areas of the state that are not regularly compromised by damaging cold. Also, like most other plants in the dooryard landscape, regular maintenance such as irrigation, fertilization, weed control and pest management procedures must be followed for best growth and production of fruit. Commercial production of the crop is largely confined to warm areas south of a line extending between Crystal River on the west coast to Daytona Beach on the east coast. Major production is confined (following numerous serious freezes during the 1980's) largely to the area south of a line running between Tampa and Titusville. This does not mean that citrus cannot be grown in other areas of the state, but it does suggest that careful consideration should be given to site selection, choice of variety and cold protection if trees are to be planted outside areas where citrus trees are grown commercially.



### CITRUS TYPES AND VARIETIES

Many different types of citrus such as oranges, grapefruit and limes can be grown in Florida. Within each type of citrus there are usually several varieties with distinctive characters which set them apart from other varieties. Such cultivated varieties are usually given names and are referred to as cultivars (which is an abbreviation of the words "cultivated variety"). For example, with Valencia orange, we have a sweet orange citrus type and the cultivar is Valencia. Numerous other examples will be found in Table 2.

Clearly, there are many types and cultivars available for the dooryard grower from the list presented. Additionally, there are many others in the industry, but only the more popular ones have been presented in the table.

Citrus trees should be purchased from a reputable source as a budded tree on an appropriate rootstock. There will probably not be a choice of rootstocks available to the dooryard grower purchasing a very small number of trees. However, this is little cause for concern since most dooryard trees will receive care substantially different from those which are placed in commercial plantings. Again, one should purchase from a reputable source that has made an appropriate rootstock selection for your cultivar and geographic location and who will stand behind their products if there are problems.

Selecting a cultivar is largely a matter of personal choice. Most people grow what they prefer to eat. There are many factors which need to be considered before the final choice is made. Perhaps the most important is sensitivity to cold. Sites which are historically cold during winter should not be planted with tender citrus types and only the most hardy should be chosen. Likewise, late-maturing cultivars should not be planted on such sites since the fruit would be frozen before maturing in many winters.

Some cultivars are susceptible to certain insects and diseases and frequent spraying may be necessary. Some cultivars are often shy bearers while others require nearby pollinator trees of another cultivar to ensure good yields. Time invested researching the merits and problems of the desired cultivar should pay off handsomely over the many years of the expected life of the citrus tree. Additional information is available from local nurserymen and from IFAS Extension offices in your home county. They can also assist you with information on site selection and soil preparation.

### SOILS

Citrus soils are generally of 3 types: (1) the deep, well-drained sands, (2) the poorly-drained flatwoods, and (3) the alkaline marl or limestone soils. Citrus trees can be grown on all 3 soils if proper preparation and aftercare is provided.

The well-drained sands need little or no preparation other than removal of weeds and grass from the planting site prior to planting. The poorly-drained flatwoods soils will need to have drainage provided or the trees should be planted on large mounds approximately 12 feet in diameter and at least 18-24 inches high.

The calcareous or limestone soils may also need special preparation. In the limestone soils, a hole should be prepared as large as is conveniently possible and filled with soil prior to planting. This will allow a maximum area for root development.

### SPACING AND PLANTING

Spacing will vary with cultivar and desired tree density. Among the various citrus types, grapefruit trees are usually larger than orange trees which are larger than most specialty types. If several trees are to be planted, they should be set at least 20-25 feet apart unless a vigorous pruning program is maintained to keep the trees from crowding each other. Be sure to consider proximity to buildings or other plants as citrus is rather vigorous and will grow quite rapidly when well cared for. Full sun areas are most desirable but septic tanks and drain fields should be avoided due to possible clogging of drains by the roots as well as damage to the tree from detergents and other chemicals.

Most dooryard citrus trees are purchased in containers and can be planted any time of the year, although the preferred time is late winter or early spring. All grass and weeds should be removed from an area 4-6 feet in diameter where the tree is to be planted. The immediate area where the tree is to be planted should be thoroughly spaded to a depth of 2-3 feet. Remove the tree from the container and if pot-bound, make several vertical cuts in the ball of the roots to stimulate formation of new roots. Set the plant in the ground slightly (1/2-1 inch) higher than it grew in the container. Re-fill the hole around the plant about 1/3 to 1/2 full, then water and tamp the soil thoroughly to remove air pockets. Allow the water to settle, fill the hole 2/3 full of soil, re-water and tamp again. Finish filling the hole and pack the soil firmly around the tree. Form a water basin around the tree at least 3-4 inches high and 30 inches in diameter. Water 3 times a week for 2 weeks, then taper off gradually to once a week during periods of little or no rainfall. The basin should stay in place until the tree is well established.

The young citrus tree will need special attention if it is to thrive and produce large crops of fruit. One of the most critical items to watch is the water supply. Citrus trees (especially young trees) should receive a generous supply of water every 7-10 days during periods of little or no rainfall. The area under the tree canopy should be kept weed-free to reduce competition for water and nutrients. A young tree should not be allowed to wilt from lack of water but conversely, too much water can damage the tree. This is especially true on poorly-drained soils.

## FERTILIZATION

The regular application of appropriate fertilizer materials is essential to proper growth and development of the young tree and the subsequent development of large crops of good quality fruit in the mature tree. While fertilization is important, it is not a complicated procedure if recommendations are followed. Exceeding recommendations may be just as harmful (or even more so) as not applying enough. Over-fertilization will usually produce rampant growth at the expense of fruit production and serious over-fertilization can injure or kill the trees.

Two fertilization schedules are suggested -- one for young, non-bearing trees (Table 1) where growth is maximized and fruit yield is compromised somewhat; and, a mature tree schedule where tree growth is minimized and fruit yield and quality are maximized. Suggested applications should be made between the months of February - October.

Fertilization of the trees after they begin to mature and produce regular and substantial crops of fruit is a rather inexact science in the dooryard situation. This is because there are many variables which can affect fertilizer use such as grass growing around the tree, proximity to buildings, distance from other trees or ornamentals, heavy irrigation use from sprinkler systems, and the like. However, as a general rule of thumb, bearing trees should be fertilized 3 times per year with the same 8-8-8 (or similar) fertilizer recommended for young trees. The amount applied in each application can be gradually increased about one pound per year up to a maximum of 8 pounds. This would mean that a fully-grown tree would be receiving approximately 24 pounds of fertilizer in 3 separate 8 pound applications. Tree condition should be used as a guide to rates of applied material with noticeably deficient trees receiving more material and luxuriant, vegetative trees receiving less. The recommended 3 applications per year can be made in January - February, May - June and October - November although timing is not especially critical.

A nutritional spray may be required when minor element deficiency symptoms develop. (These problems are likely to develop more quickly on alkaline soils.) There are many pre-packaged nutritional spray mixes that are satisfactory. These should contain zinc, manganese, boron and copper. Your local garden supply dealer should be able to recommend which material is best. Some dooryard growers prefer to routinely apply a nutritional spray on an annual basis. This is a good practice on alkaline soils and will not harm trees grown in acid sandy soils. However, the instructions on the label of the material should be followed carefully. Iron deficiencies may occur in some locations and should be corrected if present by using soil-applied iron chelates.

The pH (acidity or alkalinity) of the soil should be maintained between 5.5 and 6.5. An application of limestone or dolomite should be used to bring up the pH if it is too low (acid). Soils above pH 7.0 should not be treated to bring pH down. The local extension agent or garden supply dealer can be of service in helping to determine if a pH correction is needed.

## OTHER CULTURAL PRACTICES

Complete weed control is not essential but weeds and sod grass should be removed from the area under the tree canopy. Above all, make sure all weeds are removed from the area adjacent to the trunk of the tree since this could promote injury due to a soil-borne fungus known as foot rot which can seriously debilitate or even kill the tree. Mulches are generally not recommended around citrus trees but could be used if kept at least a foot away from tree trunks.

Pruning should not be necessary except to shape the trees or remove water sprouts or suckers. Be certain to make pruning cuts flush with the trunk or surface to be cut. Do not leave stubs as they may be attacked by rotting organisms which could damage the tree.

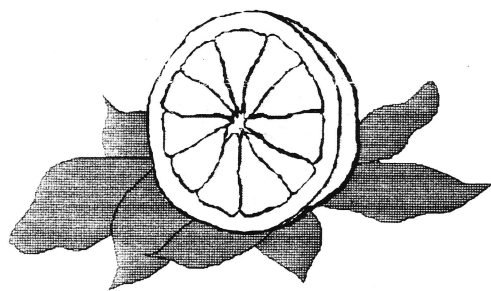


Fruit splitting and fruit drop may be a problem for some growers. This is a physiological problem of unknown origin. The problem is often accentuated just after a period of moisture stress followed by a heavy rain. Splitting and drop will usually not be a serious problem if the trees are well cared for and furnished with adequate nutrition and irrigation.

### INSECT AND DISEASE CONTROL

Organic farmers will be pleased to learn that citrus fruit can be successfully grown in most Florida dooryards without any insect or disease control sprays. Fruit produced in this manner, however, will rarely be of top external quality. There are several insects, mites and fungus diseases which may attack the fruit and render it somewhat unsightly. External fruit blemishes will usually have little effect on internal fruit quality. The appearance of the tree itself may suffer somewhat also if no sprays are applied but rarely will trees be seriously damaged by most citrus pests. Natural biological control will assist in keeping most pests to a low level. Large pests such as caterpillars and grasshoppers should be removed by hand as soon as they are noticed, especially on young trees.

Formulating a spray program can be extremely complicated. Not only is there a variety of pests (insects, mites & fungi) to be controlled, there are many different types of chemicals to be used and both timing & application of sprays is critical. Other factors to be considered would include the use of several chemicals in one spray to control different pests, the compatibility of these chemicals and adverse effects on beneficial insects caused by the use of certain chemicals. To further complicate the problem, there are many different formulations of the several chemicals available and dosages may vary with formulation and season of the year.



For the previously cited reasons and due to the fact that government regulations regarding use of agricultural chemicals are constantly changing, your local county Extension agent or garden supply center should be consulted before attempting any insect or disease control program on dooryard citrus trees. They will be able to assist with recommendations for controlling pests or in formulating a total spray program for your dooryard citrus if it is necessary.

TABLE 1 Suggested Fertilization Rates for Citrus Trees up to Five Years of Age<sup>a</sup>.

Years since planting	Number of applications/year <sup>b</sup>	Pounds/tree/application <sup>c</sup>
First	5 - 6	0.5 - 1.0
Second	4 - 5	1.0 - 1.5
Third	3 - 4	1.5 - 2.5
Fourth	3 - 4	2.5 - 3.0
Fifth	3 - 4	3.0 - 4.0

a: Recommended fertilizer analysis is 8-8-8-1.6-0.4-0.2-0.025 or equivalent (N-P<sub>2</sub>O<sub>5</sub>-K<sub>2</sub>O-MgO-MnO-CuO-H<sub>3</sub>BO<sub>3</sub>).

b: Lower number of applications should be used for trees planted in colder locations or in more northerly latitudes.

c: Lower number refers to first application of the year with rates gradually increased until the last application is using the rate suggested by the last number in the range.

TABLE 2 Dooryard Citrus Types and Popular Cultivars.

Types/Cultivars	Season of Maturity	Seeds/Fruit	Relative Fruit Size
<b>SWEET ORANGE</b>			
Navel <sup>d</sup>	Oct.-Jan.	Very few	Large
Hamlin	Oct.-Jan.	Few	Small-Medium
Parson Brown	Oct.-Jan.	Many	Small-Medium
Ambersweet	Nov.-Dec.	Varies	Large
Pineapple	Dec.-Feb.	Many	Medium
Valencia	March-June	Few	Medium
<b>GRAPEFRUIT</b>			
Duncan	Nov.-March	Very Many	Large
Marsh	Nov.-March	Few	Large
Redblush	Nov.-March	Few	Large
Thompson	Nov.-March	Few	Large
Flame	Nov.-March	Few	Large
<b>SPECIALTY</b>			
Satsuma mandarin	Sept.-Oct.	Few	Medium
Robinson tangerine <sup>e</sup>	Oct.-Dec.	Varies	Varies
Fallglo Tangerine <sup>e</sup>	Nov.-Jan.	Varies	Large
Orlando tangelo <sup>e</sup>	Nov.-Jan.	Varies	Varies
Minneola tangelo <sup>e</sup>	Dec.-Jan.	Few	Large
Temple orange hybrid	Jan.-March	Many	Medium
Dancy tangerine	Dec.-Jan.	Many	Small
Murcott honey tangerine	Jan.-March	Many	Medium
Sunburst tangerine <sup>e</sup>	Nov.-Jan.	Varies	Varies
Kumquat	Nov.-Dec.	Few	Small
<b>ACID <sup>f</sup></b>			
Calamondin	Sept.-Dec.	Many	Small
Tahiti lime	July-Sept.	None	Medium
Key lime	July-Sept.	Many	Small
Lemon <sup>d</sup>	Aug.-Nov.	Few	Large
Limequat	Oct.-Dec.	Few	Small

d: Several cultivars are available.

e: These are citrus hybrids which will do best in mixed planting with other cultivars for cross-pollination which should increase both fruit yield and size.

f: The acid citrus types will often have fruit maturing year-round. Dates given are for the main harvest season only.

## New Members:

Zane & Lourdes Crabtree 9114 South Mobley Road Tampa, FL 33626-1403 (813)829-6068  
 Sue Wells & James McNabb 122 Nelson Street Auburndale, FL 33823 (941)967-1631  
 Julie & Steve Woofert 202 Sugar Creek Dr. Plant City, FL 33567 (813)754-4848

## Thank You Thank You Thank You

To all the creative cooks who brought so many delicious dishes to our holiday happening.

## What's Happening

December-January, 1997

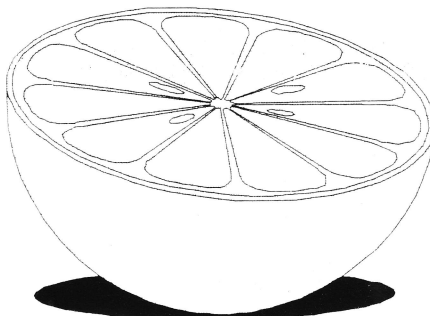
by Paul Zmoda

Citrus is happening! I've sampled a few lately; one of my favorites is Pummalo (*Citrus grandis*), the largest fruit in this group. Some are as big as bowling balls and have quite a thick rind comprised of the oil rich outer layer, the *flavedo*, and the white, pithy inner layer, the *albedo*.

Pummalos can be picked when heavy and the color is well developed. The flavor will greatly improve if left to stand for several weeks before eating. They are less acidic and less juicy than grapefruit and are usually split into segments and eaten out-of-hand. The best tasting variety in my opinion, is Sweet Siam.

Valencia oranges (*Citrus sinensis*) come in two forms - regular and variegated, the latter having tri-colored leaves and attractively striped fruit. The interior color is an amber yellow and this juicy flesh is very delicious.

Mandarins (*Citrus reticulata*) can be exceptionally good also. Sometimes called tangerines, these are usually very easy to peel and enjoy. Many of these trees may tolerate sub-freezing temperatures readily.



The Honey Murcott is a cross between *C. reticulata* X *C. sinensis*. I consider this beautiful, juice-filled citrus to be among the best in eating quality.

The Calamondin, a natural hybrid of a mandarin and a Kumquat (*Fortunella* sp.) is loaded with tasty citrus flavor but is very acidic. It is useful when cooking meats and makes out-standing marmalade. Frying them whole in coconut oil with seasonings is done in the Philippines.

When propagating citrus, bud grafting is usually done, however, calamondins, lemons, limes and others may be started as cuttings and can flower within a year's time. I make "miniature Florida Orange Trees" by rooting Calamondin twigs. When they are ready, I mail them to my family members up north. They tolerate lots of cold, but should remain in containers indoors if freezes are expected. They should fruit at an early age.

New planting: Chayote and Natal Queen Pineapples.

## BOB'S EXOTIC VEGETABLES by Bob Heath

For the last few years, my wife and I have been experimenting with exotic vegetables. I grow 'em, she cooks 'em, we eat 'em (sometimes). The root vegetables that we have been growing include taro, yuca, Jerusalem artichokes, yams, gobo and jicama.

### JERUSALEM ARTICHOKE

Jerusalem artichokes (*Helianthus tuberosus*) are also called sunchokes and are grown commercially in California and other areas. It is a Native American vegetable grown in Europe as well as the United States. The name "Helianthus" comes from the Greek "helios" (sun) and "anthos" (flower) which suggests that it is in the sunflower genus and, indeed, that is the case. "Tuberosus" applies to the roots which are, of course, tuberous.

The plant has pretty yellow flowers like small sunflowers and will put down roots and produce delicious tubers just about anywhere you plant them. The tubers are occasionally found in the supermarkets or may be ordered from one of several seed companies, such as Burpee. We plant the tubers in the early spring to grow through the summer to be harvested in the fall. Any that are missed or purposely left in the ground will over-winter and sprout in the spring.

The tubers are most often lumpy and bulbous but the snow white flesh is extremely crisp like water chestnuts. The taste is sweetly fresh with undertones of artichoke hearts. Raw chokes have a crisp, crunchy texture that makes them perfect for creamy dips and sauces. They add crunch and flavor to raw vegetable salads. As a simple hot vegetable, steam chokes for 8 to 12 minutes and serve hot with salt and pepper, melted butter or hollandaise sauce. Whole tubers baked with a roast are a delicious alternative to potatoes, or serve them au gratin or with a cream sauce. We find that they cook very rapidly and turn to mush if overcooked. Also, we find that the tubers need to be washed meticulously because of their knobby shape. We never peel the tubers before cooking but sometimes we do after cooking. Chokes are moderately low in calories but especially rich in iron. We have several recipes for those who might be interested.

### YUCA

Yuca (*Manihot esculenta*) is also called cassava, manioc or tapioca. The yuca plant will grow up to 6 or 8' tall and resembles marijuana with its lobed palmate leaf. The plant is native to South and Central America and has been adopted by the Spanish people as a major source of starch. It is now cultivated throughout the tropics, the Caribbean, Africa, Asia, the South Pacific and Florida.

The plant is a relative of the poinsettia and produces roots that are long, narrow and tapering. Only the root is eaten and it must be cooked to destroy the poisonous prussic acid. The root is enclosed in a thick peeling which is relatively easy to remove if you know how. Short sections of the root may be incised laterally allowing one to unwrap the peeling. There is also a central fibrous cord which must be removed. Yuca is used in Central and South America in stews and soups and ground to a meal used in bread and dumplings. Also, the starchy root is treated to produce our tapioca pudding.

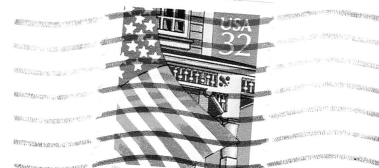
We usually eat yuca in one of two ways, either boiled and served hot with butter

and salt, or grated and used in potato pancakes to replace the potatoes. We find that yuca makes better potato pancakes than potatoes. Yuca is high in calories and is a good source of iron, niacin and calcium.

## TARO

Taro (*Colocasia esculenta*) is also called dasheen or malanga. The plant looks like an elephant ear and should not be grown in the same yard with elephant ear or caladiums because there is the possibility of confusion. Taro is a member of the Arum family which also includes philodendrons and dieffenbachia. It is an Old World vegetable, probably originating in the East Indies. It is grown throughout the Pacific Islands, the Orient, the Caribbean, North Africa and South and Central America. Taro is made into pureed soups, souffles, stews, chips and fritters. It can usually be found in Latin American and Oriental markets and in some supermarkets. We usually use them as a substitute for potatoes, boiled with butter and salt, or in stews and in soups. We also fry it as French fries, which are better tasting than French fried potatoes. Taro should always be cooked before eaten as it contains an acrid juice that will irritate the membranes of the mouth and throat if you make the mistake of eating it raw. Taro needs to be peeled deeply to remove the skin and any discolored spots and placed immediately in cold water to prevent discoloration. Taro is an excellent source of potassium, iron and fiber. It is also very low in sodium. Likewise, we have some good recipes for taro.

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