

# Central Florida Youth

## *Citrus Tree Growing Contest*



UF/IFAS

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# Care of Containerized Citrus Trees

## Transplanting

Your citrus tree will be delivered in a 4 inch diameter cylindrical pot. You may have also ordered a 5 or 7 gallon pot and/or potting media. Only 5 or 7 gallon pots can be used for the citrus tree growing contest depending on your specific contest. Pots either larger or smaller will not be allowed back to the fair. For this reason it is very important that you consider ordering a pot from the fair for the contest, or making sure the container you will be using is a 5 or 7 gallon container depending on contest. Potting media can also be ordered through the fair at the time you order your tree depending on the contest. The media is a blend commonly used in Florida citrus nurseries production. If you choose to, you can blend your own media using the following ingredients:

Potting media one:

- one-third Michigan or Canadian peat
- one-third yellow or builders sand
- one-third hardwood shavings, sawdust or bark (cypress, sweet gum or other hardwood tree)

Potting media two:

- one-half Michigan or Canadian peat
- one-tenth of yellow or builder sand
- four-tenths hardwood shavings, sawdust or bark (cypress, sweet gum or other hardwood tree)

You need to thoroughly mix the ingredients together in a large tub or container. You will also need to add to the mix 0.4 to 0.6 ounces, by weight, of dolomite per 1 gallon of container.

Fill the potting container about three-quarters full with the potting media. Next hold the tree over the container and carefully remove the tree from it's original container. Remove as much of the potting media as possible from around the rootball allowing this media to go into the container. As long as the roots don't dry out, you can remove as much of the media from around

the roots as you want. Inspect the tap root of the citrus tree. If the tap root is curled at what was the bottom of the container, carefully take a pair of plant clippers and cut the tap root just above where it begins to curl. You can discard the remaining cutoff tap root. Dig out a hole in the potting media to place the tree. Make sure that the tree is planted in the pot at a slightly higher level than it was in the original container. Never plant a tree at a level deeper than it was in the original container. At this point you can begin to add water to the container while adding additional potting media around the rootball. Lightly pack down the potting media as you are adding the water to firmly pack the media around the citrus rootball removing any potential air pockets around the roots. Make sure the tree is at the proper level and standing vertical in the container. Finish adding potting media and water to the proper level. Leave about one to two inches from the top of the container to the potting media to allow for watering your newly planted citrus tree.

Trees will likely come attached to a metal or bamboo stake. This is used to help hold the tree vertical when first transplanted. It is important to remove the ties and stake as soon as possible after the tree is transplanted (and can stand on its own) to prevent the stake and ties from hindering tree growth.

## Irrigation

Potted citrus trees will require watering 3 to 4 times per week during the summer to prevent wilting. During the cooler months this can be reduced to about once per week. You can easily check the moisture of your media by using the “two finger moisture meter”; insert two fingers into the media and pinch the soil to check for moisture. If the tree is in a wilt, you have waited too long and this will affect tree growth.

When you first get your tree planted it is important to keep it from drying out until you see evidence of new growth. Once this new growth appears, it is evidence that the tree is becoming used to its new container.

When watering you can fill the container to the top with water (one to two inches) allowing the media to become saturated with water. This will be when you can see water run out of the drain hole at the bottom of the container. Avoid over watering which can lead to water logging. If trees are water logged for forty-eight hours, it can destroy the trees root system. If your media gets too dry it may become difficult to add water to the media. In these cases it is best to add water slowly at a drip like rate to re-wet the media.

## Fertilization

Nutrition, along with water, are the most important factors that will affect the growth and size of your citrus tree. Trees can be fertilized by using dry granular, slow release or liquid soluble. Begin fertilizing your citrus tree as soon as new growth appears after transplanting. You can use any one or a combination of these to fertilize your citrus tree. The important idea in fertilization rates is to apply similar amounts of nitrogen to your tree regardless of the type of fertilizer used. The following examples are based on applying 0.15 pounds of actual nitrogen to your tree for the year.

A dry granular 6-6-6 or 8-8-8 analysis fertilizer can be used (the numbers represent percent nitrogen, phosphorous and potassium in that order). Apply dry fertilizer at a rate of 3 to 4 ounces per month and incorporate it into the top layers of the potting media. Be careful not to place fertilizer in direct contact with the trunk.

If using slow release, apply the same amount of nutrients based on the analysis of the fertilizer. There are many slow release fertilization formulations available at most garden centers. One formulation that is readily available is “Miracle-Gro shake ‘n feed continuous release for citrus” (13-7-13). The label indicates that this formulation needs to be applied every 3 months. Based on the analysis of this formulation, apply every 3 months, 5 ounces of the fertilizer incorporating it into the top layers of the potting media.

Soluble fertilizer can also be used and the rate should again be based on the analysis of the fertilizer material. “Miracle-Gro liquid all-purpose concentrate plant food” (12-4-8) is a formulation that can easily be found at most garden centers. Based on the formulation, use three-quarters of an ounce mixed in a gallon watering can and applied to your tree every two weeks.

In addition to the macronutrients of nitrogen, phosphorous and potassium (the three numbers on the fertilizer container as listed in the above examples) citrus trees may also require secondary (calcium, magnesium and sulfur) and micronutrients (iron, zinc, manganese, boron, copper, and molybdenum). Some of the secondary and micronutrients may be included in the fertilizer formulations listed above. Look on the fertilizer label for the names of these. It is important that these nutrients be included as part of a good citrus fertilizer program. Most fertilizer formulations contain some of the secondary nutrients of sulfur, and the dolomite contained in the potting media will provide the calcium and magnesium. If the secondary or micronutrients are not included, then application of a complete citrus foliar nutritional spray can be applied after the new flush has fully expanded. The nutritional spray doesn't necessarily need to contain copper since you will be applying this as a fungicide, which will be discussed in the citrus disease section. Citrus nutritional sprays that you purchase will likely contain iron, zinc and manganese

and these are the nutrient deficiencies that most commonly will appear on your citrus tree. The following link has examples of citrus deficiency symptoms: <http://edis.ifas.ufl.edu/ch142>.

## Pest Control

Your citrus tree will need to be protected from insect pests and citrus diseases. Depending on the variety, a number of citrus diseases can affect the growth and performance of your tree. Some of these diseases will produce symptoms on the fruit leaves and stems. We will cover the most commonly occurring diseases that you will need to control.

The common foliar and fruit diseases of citrus include: citrus scab, alternaria brown spot, citrus canker, melanose and greasy spot. Some of these diseases like citrus canker, melanose and greasy spot will affect all varieties of citrus. Others like citrus scab and alternaria will affect only certain citrus varieties. The following link has some excellent information on these diseases: <http://edis.ifas.ufl.edu/pdffiles/PP/PP26100.pdf>. Additionally, information on citrus canker can be found at the following link: <http://edis.ifas.ufl.edu/pp116>. Due to the contagious nature of citrus canker, trees that exhibit symptoms will not be allowed to be shown at the fair. Copper fungicides applied as indicated on the label instructions will control all of the above citrus diseases.

One disease of primary concern in Florida today is huanglongbing, HLB or citrus greening. This disease is a bacterium (like citrus canker) that only lives in the vascular system of citrus trees (inside the trunk). The disease is transmitted by an insect called the Asian citrus psyllid and once a tree is infected it will slowly begin to show symptoms of the disease. There is no cure for citrus greening once the tree is infected. At this time controlling the insect that transmits the disease, preventing the tree from becoming infected is your only option. If your tree becomes infected and is showing symptoms it will not be allowed to be shown at the fair. The following link has information on symptoms of citrus greening: <http://www.crec.ifas.ufl.edu/extension/greening/symptoms.shtml>.

There are a number of insects and mites that can become problems on your citrus tree. Excessive feeding by some insects can reduce tree growth and cause the formation of sooty mold on the foliage. The most common insects that can cause problems include: scales, citrus leafminer, whiteflies, aphids, Asian citrus psyllids and orangedogs. Scale, whiteflies and aphids are plant sucking insects and can be found on the new growth as it begins to expand. Their feeding can result in the formation of sooty mold. This mold is black and can cover the leaves of your citrus tree reducing photosynthesis and growth. Horticultural oil sprayed in accordance with the label will control these insects and prevent sooty mold formation. Oil can also help to loosen this mold if it has formed on your leaves. Citrus leafminers will attack young foliage crawling under the

cuticle of the lower leaf surface as a small worm. This worm will produce mines causing a distortion of the new leaves. Horticultural oil or a premixed malathion and horticultural oil spray can be used on the newly expanding leaves to reduce citrus leafminer damage. The Asian citrus psyllid is an insect that, as mentioned before, can transmit the citrus greening disease. This plant sucking insect can not only can transmit citrus greening, but will distort the leaves of your citrus tree. Controlling the psyllid is extremely difficult and requires the use of a systemic insecticide. The recommended insecticide that can be most commonly found in garden centers is: Bayer “Fruit, Citrus & Vegetable Insect Control”. Application instructions can be found on the insecticide label and a single application in July should protect your tree from psyllids and citrus leafminer. This material, in addition to controlling psyllids, will also control many of the insect pests mentioned above including: aphids, citrus leafminer, mealybugs, scales and whiteflies. Horticultural oil and the combination of malathion and oil will also help reduce psyllid populations. The last pest to mention is the orangedog which feeds on newly forming citrus leaves. The orangedog is the caterpillar of the yellow swallowtail butterfly. It only takes a few of these caterpillars to completely eat off all of your new tree leaves. The simplest method of control is to frequently inspect your tree for this insect and knock them off your tree. If knocking off caterpillars is not something you want to do, then spray applications of an insecticide called Sevin following the label instructions will control orangedogs, grasshoppers and scale insects.

## Pesticide Safety

**When using pesticides you must read, follow and understand the instructions listed on the label. Reading the label should be done first before you even open the pesticide container. These label instructions include how much to use, how to mix the insecticide, how to apply, what clothing must be worn during the application, what to do if the pesticide spills on you or your clothing and how to clean up your equipment after the application. It is also important that your parent or guardian be present when you spray.**

## Pruning

Your citrus tree will need to be shaped and pruned during the year. Heading back and thinning are two types of pruning techniques. Heading back is simply where the end of a twig or limb is cut encouraging the lateral buds to develop. This will lead trees to produce more dense growth. Thinning discourages lateral bud development and growth. This type of pruning is where the entire twig or limb is cut back to it’s origin.

Typically thinning is done to weak or dead limbs or twigs. In this case the limb should be thinned back or cut into live green wood. The removal of shoot tips or heading back is necessary to

develop a well shaped and full tree canopy. To encourage this bushiness, cut shoots should be 4 to 6 inches long at the time when the tips are cut. All of your pruning should be completed and cease by mid-December. It takes about 6 weeks for newly formed shoots to mature. The idea is to have a full and symmetrical shaped citrus tree. Long and leggy shots should be cut back to discourage uneven canopy growth.

In some cases trees can be staked or tied to encourage the desired shape or growth direction without the need for pruning. This technique will work in trees that have adequate foliage and where there is no need to encourage additional branching.

## Grades and Standards

When returning your tree to the fair, judges will be looking for certain desirable characteristics in judging your tree as either a blue, red, white or needs work. These categories include:

<b>Category</b>		
Size	tree is proportional to the container	evidence of trunk growth, original stake removed, no girdling by plant ties, sturdy
Shape	pruning, branching, balance	absence of trunk sprouts, tree symmetrical and well shaped
Color	deficiencies, toxicities	nutritional deficiencies, toxicities of the foliage, uniformly green foliage
Density	foliage quantity, size	good foliation, numerous leaves of normal size
Injury	insects, mites, diseases, mechanical damage	tree free from damage