

# Citrus

Nowhere on Earth has citrus fruit held more importance than in Florida, where citrus has become a multi-billion dollar industry. The first citrus trees were planted here by the Spanish 500 years ago, and by the 20<sup>th</sup> century, business was booming; the result could be seen in sprawling orchards of beautiful trees producing oranges, grapefruits, tangerines, lemons and limes. Many beloved varieties, such as the tangelos, were developed right here in Florida. Even today, most of us have the picture of oranges on our license plates and the orange blossom is the Florida state flower.

## Citrus Greening Disease

Once a common site in most backyards here, healthy citrus trees are sadly becoming a rarity in Florida because of a killer bacteria. The citrus psyllid (*Diaphorina citri*), an insect that made its way to Florida in the late 1990s and that feeds on the living tissue of citrus trees, carries the bacteria in its body and infects a tree as it feeds. With its piercing-sucking mouthparts, this little bug introduces a bacterium into the plant that impairs the ability of the tree to take in nourishment, resulting in reduced and increasingly undesirable fruit production. Fruit becomes smaller and tastes worse with each harvest.

Once these bacteria are in the tree, there is no cure. This disease has many names, Huanglongbing or HLB (literally Yellow Dragon disease), and Citrus Greening disease (because fruit stays green as the disease progresses). This disease is presently the biggest threat to citrus world-wide and it is proving extremely difficult to maintain healthy citrus trees for the grove owner and homeowner alike. It is also the reason why so many retail operations have had to close their doors in recent years.

## How to Prevent and Manage Citrus Disease

But, if your heart is set on growing a citrus tree, don't despair! It is still possible! If you follow the information below, you can increase your chances for success

While there is not yet an available cure for Greening now (although recent research suggests we may be close!), you can still maintain a consistently healthy fruiting tree if you are aware of the symptoms and preventative measures you need to take.

Following our recommended practices for planting, watering, fertilizing and spraying will keep your plants

healthy and make them less inviting to pests. The best way we have found to increase vigor and maintain the health of your citrus and even cause it to thrive DESPITE the disease is by following our regimen of spraying the foliage thoroughly every two weeks with the following concoction, known as a "witch's brew" by our resident citrus expert. It consists of three products:



- **Captain Jack's Dead Bug Brew** for the bugs (4 tbs per gallon)
- **Citrus Grow Scripts Spray** for health (2 tbs per gallon)
- **Genysis** gets the products above inside the leaf and rainproof in 30 minutes (1 tbs per gallon)

Combined, these three provide continuous protection against harmful pests like leafminers (*see back page*), and worse, the citrus psyllid, as well as provide an extra dose of quality nutrients biweekly.

## Witch's Brew

Combine these 3 products and spray the foliage of your tree thoroughly every 2 weeks:

### Witches Brew recipe

Spray every 2 weeks for Citrus success

**4 tbs Captain Jacks**

**2 tbs Grow Scripts**

**1 tbs Genysis**

Mix per gallon of water and spray the leaves thoroughly, every other week.

## Symptoms of Citrus Greening

For those not following the spray regimen recommended above, the occurrence of citrus

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greening is very common. Symptoms include leaves with irregular yellow splotching, crimped leaves, and misshapen, bitter fruit. **Think you may have greening? Feel free to bring in a sample to the info desk or send a picture to [info@rockledgegardens.com](mailto:info@rockledgegardens.com). Just make sure you bag it up if you bring in a sample!**

Depending on how far the disease has advanced, it may still be possible to bring your tree back to health with our recommended treatment.

### Leafminers

Leafminers are types of moth and fly larvae that, once hatched, spend their larval stage within the leaf. Their damage is evidenced by white (fresh) to yellow or brown (old) squiggly trails in the leaf. They will not kill a citrus tree, but they can stunt the growth of a young tree. Since these pests do not spread from leaf to leaf, there is no need to remove affected leaves from the tree. Leafminer activity on mature leaves and trees is usually not a serious problem. However, when leafminer activity is noticed on new growth flushes, it should be treated. You will not have to treat for these critters if you use the Witch's Brew described above.



### Other Citrus Diseases

Citrus is also prone to other common fungal problems, especially the diseases Greasy Spot and Scab. To prevent and control these fungal issues, thoroughly spray the foliage of your tree with Liquid Copper fungicide 3 times a year (4 tsp per gallon) any time except when your tree is blooming. Better yet, the fungicide can be added to your Witch's Brew!

### Citrus We Stock

When selecting a variety, check our "Citrus Varieties" handout. Certain fruits are better for juicing while others are better for eating. Here at Rockledge Gardens we are glad to talk about the pros and cons of different varieties and can help you make the best selection. It's your tree—make sure you get what you want!

When available, we carry the following varieties:

- Oranges: Navel, Valencia, Hamlin
- Tangerines: Dancy, Clementine, Murcott, Ponkan
- Hybrids: Honeybell and Sugarbelle Tangelos, Satsuma Mandarin
- Limes: Key, Persian, Kaffir

- Lemons: Eureka, Variegated Pink, Ponderosa, Bearss, Meyer
- Grapefruit: Marsh White, Ruby Red
- Others: Kumquats (sweet and sour), Calamondin
- Dwarf varieties

### Planting Your Citrus Tree

Citrus trees are most productive when grown in full sun. If you are going to plant more than one, make sure they are far enough apart and not too close to buildings. Prepare your site by using 1-part Rockledge Gardens soil amendment mix and 1-part existing soil to backfill the hole. Make sure the soil at the top of the citrus in the pot is level with your planting site. Add 2 to 6 cups of Bio-Tone Starter Plus with the backfill, depending on the size of your plant. Then top dress with organic Espoma Citrus-Tone fertilizer (amount to use is on the bag) and reapply every 3 months.

Follow the watering schedule in our "New Plantings" handout. Once established, citrus should be watered twice a week in warm weather, once in cooler weather.

### Feeding Your Tree

Starting at the time of planting, feed citrus trees every 3 months with organic Espoma Citrus-Tone. Other nutrients required by your tree will be supplied by the nutrient spray you apply every two weeks.

Additionally, liquid seaweed can be applied to help boost the immune system of the tree (3 or more times per year) and is especially a good practice before the cooler months—it makes them up to 3° more cold hardy. Both the copper fungicide and the liquid seaweed can be sprayed as part of the "Witch's Brew" described above.

The root system of citrus trees includes small fibrous feeder roots that grow close to the surface. Since grass roots will compete with these roots, it is best to remove sod from around the trunk up to the dripline of the tree. Recent studies have also shown not only that mulch can be used around citrus trees, but also that the proper amount and application of mulch will benefit the tree. Mulch should be kept at least 6 inches away from the trunk and be not more than 3 inches thick.

Citrus roots also usually travel well past the dripline, so for this reason you must be careful what you spray on the lawn around your citrus trees. Certain lawn treatments can adversely affect the health and performance of citrus trees. Never use "weed and feed" products near your tree! When used as they normally are in the spring, their high nitrogen content can result in a tree's failure to blossom and fruit for an entire season. For the same reason, other high-nitrogen lawn boosters should not be spread close to citrus or other fruit trees.

Atrazine should also not be sprayed on grass within the vicinity of citrus trees. If it leaches into the ground as far as the citrus surface roots, serious damage to the tree can result. Finally, the ground under fruit-bearing trees should never be treated with systemic insecticides or fungicides since these poisons will eventually be stored in the fruit, making them unfit for consumption.