

# Duval County Urban Forestry Fact Sheet

## New information for living with Citrus Greening

by Larry Figart, Urban Forestry Extension Agent

For several years now citrus greening has been decimating residential citrus in North-east Florida. My recommendations used to be to hold onto the tree as long as possible until the fruit became inedible. However recent research has provided us with new ways to manage citrus greening in our landscapes.



**Blotchy Mottle in Citrus**  
Image by L. Figart UF/IFAS

Citrus greening or Huanglongbing (HLB), was discovered in South Florida in 2005. Since then, citrus greening has spread throughout Florida in both commercial and residential sites. There are no citrus varieties resistant to greening. Since HLB was first found, the number of acres devoted to commercial citrus production in Florida has declined by 26 percent and the amount of citrus harvested has dropped by 65 percent. The typical lifespan of a citrus tree has gone from 50 years to just 15. Citrus growers reported in a recent survey that at least 90 percent of their acreage devoted commercial citrus is infected with citrus greening and 78 percent of the trees are infected.

Another name for Citrus greening, “Huanglongbing”, translates to “yellow dragon.” This name was given to the disease because an early sign of citrus greening is a branch or shoot turning yellow. The most identifiable symptom found on the foliage is called blotchy mottle. It can be described as yellow and green blotchiness on the leaf. The blotchiness is not symmetrical, meaning one side of the leaf is not a mirror image of the other.

The next noticeable symptom is where the term “citrus greening” comes from. The fruit can turn orange near the stem but stay green on the other end. Other fruit symptoms include lopsided or small fruits that taste sour or bitter.



**Greening Fruit**  
Image by L. Figart UF/IFAS

The one symptom that is first usually noticed by homeowners is the fruit dropping prematurely. Many residents affected with the disease have reported that their fruit started dropping in August. This fruit drop continues through the fall.

Unfortunately, there is no cure for greening. However, there have been some research breakthroughs that lessen the severity of the disease. Growers using slow-release fertilizer recommended by UF/IFAS researchers, have been able to keep their trees productive longer. This can be a model that homeowners can emulate.

Greening is caused by bacteria that clogs up the vascular tissue that sends nutrients to the various parts of the tree. Fertilizing with a slow-release fertilizer throughout the growing season will allow nutrients to be used by the tree more efficiently. The term slow-release, (or controlled release) means that the fertilizer is in a form, or is treated, to last longer in the soil and is available to the tree for a longer period of time.



### **Fertilizer Application.**

The slow-release fertilizer should be applied in February, June, and September. The fertilizer should be a 12-4-16 on the label. However, it may be hard to find that exact formulation (Lesco palm fertilizer 8-2-12 slow-release palm fertilizer is close). Apply 13 pounds of the 12-4-16 divided into 3 applications. (a little more than 4 pounds each application). If you are using the “palm” fertilizer, it adds up to about 17 pounds total divided by three into roughly 5.5 pounds each application.

The fertilizer should be applied in the entire area of the tree’s root system, not just put in a single spot or narrow ring around the tree. A common term is drip line. Spread the fertilizer out to the furthest extent of the branches.

Use a micronutrient spray at the same time as you are fertilizing to provide micronutrients. Citrus micronutrient sprays are available at several local garden centers. As always read and follow the label when applying fertilizers and pesticides.

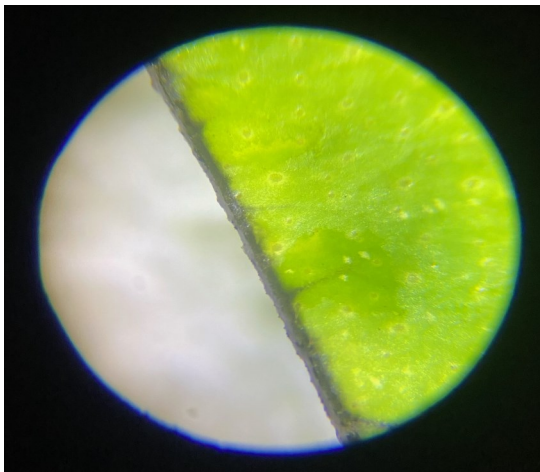
Another recent breakthrough came about accidentally. Researchers noticed that citrus trees on the edges of oak forests suffered fewer greening symptoms. With further investigation, the scientists determined that an extract in the oak leaves was providing some benefit. To mimic the effect of the oak leaf extract we can make an oak leaf extract tea.

### **Fruit Drop**

**Image by L. Figart UF/IFAS**

## **Oak Leaf Extract Tea Recipe.**

- Find a waterproof bucket in which you will be able to place your leaves. Since you will be filling it with water, make sure you select a bucket you can easily pick up and carry, but one that will also have enough water that it will not evaporate quickly.
- Fill the bucket between a third full and half full of oak leaves, and then fill it to the top with water.
- Let the bucket stay in the sun for several days until the water is the pale brown color of the tea that you drink.
- Pour the tea mixture around the base of the tree.
- Treat the tree twice a week for two months.



**Iodine test results**  
Image by L. Figart UF/IFAS

For those of us that do not want to give up on citrus, there are a few citrus varieties that are listed as tolerant (not resistant). The tolerant varieties include 'Sugar Belle', 'Tango', 'Bingo' (mandarin hybrids), '13-51' (a release from Brite Leaf Nursery), and 'Sundragon' (a new USDA release). Also, most lemon varieties are tolerant as they seem to put on more growth than the greening takes away. You will find that some of these varieties are more available than others. 'Sugar Belle' seems the easiest to find.

If you need confirmation of citrus greening, the only way to get an accurate diagnosis is to send a sample to a lab and have them look for the DNA of the bacteria. This test is called a PCR test. The University of Florida charges a fee of \$80 to perform the test. However, there is a field test using household iodine that can help you determine whether it is "likely" your tree has the disease. The iodine field test is easy and takes less than 5 minutes. The fact sheet that details the instructions can be found at:

<https://swfrec.ifas.ufl.edu/hlb/database/pdf/00002409.pdf>

While it may seem like growing citrus is a losing prospect there is hope. There are new breakthroughs happening all the time. Researchers from the University of Florida, and the USDA are tirelessly working on breeding new varieties with the hope developing new resistant varieties. Researchers are optimistic that one day we will be able to say that citrus greening is no longer a concern. For more information on citrus greening go to: <https://crec.ifas.ufl.edu/hlb-information/greening/>