

# 2019–2020 Florida Citrus Production Guide: Blight<sup>1</sup>

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Citrus blight is a wilt and decline disease of citrus whose cause has not been determined. The first symptoms on huanglongbing (HLB)-free trees are usually a mild wilting and grayish cast to the foliage often accompanied by zinc deficiency symptoms on trees. Trees rapidly decline with extensive twig dieback, off-season flowering, and small fruit. Blighted trees reach a stage of chronic decline, but seldom die. Currently, however, it is difficult to recognize blight due to HLB symptoms, and there is an increased incidence of rapid decline and death among trees with mixed infections of blight and HLB.

The disease affects only bearing trees and usually first appears when the trees in the grove are 6–8 years old. The first affected trees in a grove are usually randomly distributed, but groups of blighted trees may eventually occur, either as clusters or down the row. The disease has been transmitted by root grafts, but not by limb grafts or with budwood. The means of spread, other than by root grafts, is not known.

Blight symptoms can be confused with other decline diseases (e.g., HLB, tristeza decline, etc.), and accurate diagnosis is important in order to follow proper practices. Citrus blight is characterized by: 1) high zinc content in trunk bark and wood; 2) presence of amorphous plugs in the xylem; 3) failure to absorb water injected into the trunk; and 4) presence of blight-associated citrus proteins in roots and leaves. The best procedure for diagnosis of individual trees in the field, particularly in spring months (March, April, and May), is to test water uptake into the trunk, which is done by using a battery-powered drill to open

a small hole ( $\frac{1}{8}$  inch) and injecting water from a plastic syringe without a needle. Healthy trees or trees declining from Phytophthora root rot, nematodes, water damage, tristeza, or HLB will usually take up about 10 ml of water in 30 seconds. Trees affected by citrus blight take up no water regardless of the amount of pressure applied. A laboratory test is being developed that will be more accurate, and with proper equipment, many samples will be processed in a short time. However, the syringe test is the only method currently available for confirmation of blight.

All scion varieties of citrus as well as ungrafted seedlings may be affected by citrus blight. Trees on all rootstocks are susceptible, but significant differences between rootstocks exist. The rootstocks that are the most severely affected by blight are rough lemon, Rangpur lime, trifoliate orange, Carrizo citrange, and some others. Those most tolerant to blight are sweet orange, sour orange, and Cleopatra mandarin. Swingle citrumelo was listed as tolerant; however, there appears to be an increase in blight incidence on that rootstock. Sweet orange and sour orange have not been recently recommended because of susceptibility to Phytophthora root rot and tristeza, respectively.

## Recommended Practices

There is no cure for citrus blight. Once trees begin to decline, they never recover. Severe pruning of blighted trees will result in temporary vegetative recovery, but trees decline again once they come back into production. The

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only procedures recommended for management of citrus blight are:

1. Remove trees promptly once yield of affected trees has declined to uneconomical levels.

When planning to plant or replace trees there are two strategies recommended:

- Plant or replace trees with trees on rootstocks such as Cleopatra mandarin (if Phytophthora root rot is not present in the grove) or Swingle citrumelo that do not develop blight at an early age; or
- Plant trees on vigorous and productive rootstocks, such as Carrizo citrange or rough lemon, that develop blight at an early age, and replace trees that decline as soon as they become unproductive. Production can be maintained at relatively high levels despite blight with these rootstocks.