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# Citrus Canker

Last Modified:



Citrus canker is a disease caused by the bacterium *Xanthomonas citri* subsp. *citri* (synonym *X. axonopodis* pv. *citri*). It thrives in areas with high rainfall and warm temperatures. Citrus canker is found throughout Florida and in limited areas of Alabama, Louisiana, and Texas. Severely infected citrus trees may lose their leaves and prematurely drop fruit. Canker-infected fruit is safe to eat but is not marketable due to its appearance.

The bacteria that cause canker can enter tree leaves naturally or through wounds caused by weather or insects, such as the citrus leaf miner (*Phyllocnistis citrella* Stainton). It can survive for months on plant surfaces. Young leaves, stems, and developing fruit are most susceptible to the disease. The disease is spread by wind and rain and by people moving contaminated equipment, untreated infected fruit, and infected plants and clippings.

## What To Look For

- Raised brown lesions with water-soaked edges and a yellow halo on fruit, leaves, or stems
- Older lesions may lose the yellow halo and appear corky

View symptoms in our [citrus canker photo gallery](#).

## How To Prevent This Disease

- [Know the quarantines in your area](#).
- Buy only USDA-certified citrus plants.
- Don't move branches, green waste, dead trees, and other regulated items out of a quarantined area.
- Do not mail or transport home-grown citrus fruit or plants out of a quarantined area.
- Commercial nurseries must follow [strict protocols for moving citrus nursery stock](#) (227.22 KB) out of quarantined areas.

## How It Is Treated

There is no treatment or cure for citrus canker. Infected trees continually decline and eventually stop producing fruit.

## Report Signs of Citrus Disease

If you think you've seen signs of this disease or pest, immediately report it by completing our online form.

[Report Form \(English\)](#)

[Report Form \(Spanish\)](#)

## Controlling Citrus Canker

### History of Citrus Canker in the United States

Citrus canker was first identified in the United States near the Florida-Georgia border in 1910. It took 21 years and the destruction of 257,745 grove trees and 3,093,110 nursery trees to eradicate the disease.

In 1995, canker was again discovered in Miami-Dade County, FL. Despite a 10-year effort to eradicate the disease, a series of unprecedented storms in 2004 and 2005 spread the disease to the point where eradication was no longer possible. The Secretary of Agriculture officially called an end to eradication efforts in 2006. He directed that work shift to containing the disease and establishing [criteria under which fruit and nursery stock could safely move out of Florida](#).

Citrus canker was later found in Louisiana in 2013, in Texas in 2016, and in Alabama in 2021. APHIS is working with partners to contain the disease in these States.

### Current Quarantine Boundaries

APHIS publishes the legal description of current quarantine areas. Users can search by State and pest to determine quarantine area(s).

- [Table of Federal Quarantine Descriptions](#)
- [Interactive Citrus Federal Quarantine Map](#)
- [Citrus Canker Regulated Areas](#)
- [Citrus Canker Regulated Articles](#)

### Regulations

- [Interstate Movement of Regulated Fruit from a Quarantine Area](#) (7 CFR 301.75)
- [Regulated Articles Table](#): Use this table to find requirements for moving regulated articles, such as fruit, nursery stock, and other items.
- [APHIS Treatment Manual for Fresh Fruit](#)

## Potentially Actionable Suspect Sample Policy

A potentially actionable suspect sample (PASS) is a **regulatory sample<sup>3</sup> from the environment or an APHIS-approved exclusionary facility<sup>5</sup>** where preliminary diagnostics indicate that *Xanthomonas* spp.\*, a USDA-regulated pathogen, is present and must be confirmed by APHIS' Plant Pathogen Confirmatory Diagnostics Laboratory (PPCDL).

### Samples Collected from a Non-Regulated Area

**Any regulatory sample collected from a non-regulated area<sup>1</sup> or APHIS-approved exclusionary facility** that tests positive using APHIS-approved tests for the presence of *Xanthomonas* spp., the causative agent for citrus canker, is considered a PASS and must be forwarded to PPCDL for final determination. A **sample<sup>4</sup>** should consist of symptomatic plant material (leaves, twigs, or/and fruit).

#### Sample Diagnostics

USDA APHIS PPQ Science & Technology  
Plant Pathogen Confirmatory Diagnostics Laboratory  
9901 Powder Mill Rd. Bldg. 580  
Laurel, MD 20708  
Phone: 301-313-9208 or 301-313-9271

When forwarding materials, notify the lab by email ([APHIS-PPQCPHSTBeltsvilleSampleDiagnostics@usda.gov](mailto:APHIS-PPQCPHSTBeltsvilleSampleDiagnostics@usda.gov)). Include the number of samples, screening diagnostic results, and tracking information in this communication. Do not ship samples on Fridays or the day before a federal holiday.

Please see [additional information for preparing and submitting samples](#).

### Samples Collected from a Regulated Area

A **regulatory sample** collected in a **regulated area<sup>2</sup>** where preliminary diagnostics indicate *Xanthomonas* spp. is considered a PASS and requires confirmation by PPCDL ONLY under the following conditions:

- The sample is an unusual detection (novel symptoms or new host), and/or
- The sample will result in the expansion of a previously established regulated area

If neither of these conditions apply, the sample should be evaluated by the State-designated laboratory or forwarded to the PPQ Domestic Identification Plant Pathology Lab for final determination.

### **PPQ Domestic Identification Plant Pathology Lab**

USDA APHIS PPQ Kansas State University  
4024 Throckmorton Plant Sciences Center  
Manhattan, KS 66506  
Phone: 785-532-1349  
[ppq.ops.ks.manhattan.lab@usda.gov](mailto:ppq.ops.ks.manhattan.lab@usda.gov)

You must notify APHIS laboratories and the APHIS Domestic Diagnostics Coordinator ([ppq.domestic.diagnostic.doordinator@usda.gov](mailto:ppq.domestic.diagnostic.doordinator@usda.gov)) of the suspect positive sample for which confirmation is being requested before shipping samples.

### **Definitions**

**1 Non-Regulated Area:** Any area where citrus canker is not known to occur in the United States.

**2 Regulated Area:** Any APHIS-recognized area where citrus canker has been federally confirmed.

**3 Regulatory Sample:** This is a sample of regulatory concern to APHIS for citrus canker collected by regulatory officials.

**4 Sample:** A sample refers to a single bag of leaves or a twig with attached leaves. Each sample is to contain 5 to 12 symptomatic leaves, if possible. We strongly recommend that each sample is from a single plant. Fruit or twigs without leaves could be collected if leaves are not available. In addition to the plant sample, an inactivated (boiled) bacterial streaming suspension prepared according to the WI-B-T-2-2 can be submitted.

**5 APHIS-approved exclusionary facility:** A greenhouse structure designed to exclude quarantine pests that is approved by APHIS to produce citrus nurse stock for interstate movement.

\**Xanthomonas* spp. refers to 1) *Xanthomonas axonopodis* pv. *citri* (Xac A, A\* and AW) with synonyms *X. citri* pv. *citri*, or *X. citri* subsp. *citri* or *X. campestris* pv. *citri* or *X. smithii* subsp. *citri* and 2) *X. axonopodis* pv. *aurantifolii* (Xac B & C) with a

synonym *X. fuscans* subsp. *aurantifolii*.

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