



CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

OFFICIAL NOTICE FOR COMMUNITIES IN SAN BERNARDINO, SAN DIEGO, AND SAN LUIS OBISPO COUNTIES PLEASE READ IMMEDIATELY

PROCLAMATION OF EMERGENCY PROGRAM FOR CITRUS CANKER

On March 2, 2022, the United States Department of Agriculture (USDA) notified the California Department of Food and Agriculture (CDFA) of citrus nursery stock (CNS) received in California from a South Carolina nursery at which citrus canker (CC) disease was detected. Between March 4, 2022 and March 11, 2022, CDFA collected and destroyed CNS received from the South Carolina nursery consisting of Bearss lime, key lime, Meyer lemon, and Satsuma mandarin. Citrus tree tissue was also collected and tested for CC from existing citrus hosts at a residence in the City of Chino, San Bernardino, where the some of the South Carolina nursery stock was received. CC was not detected at this location.

CC disease is caused by the bacterium *Xanthomonas citri* ssp. *citri* and spreads to citrus plants through contaminated soil, containers, equipment and tools, infected plants and plant clippings, and untreated infected fruit. Wind and rain can also spread the disease between citrus plants. Severe disease can cause defoliation, premature fruit drop, twig dieback, general tree decline, and significant blemishes on fruit. Trees infected with CC become weak and unproductive. The disease affects all citrus varieties and is caused by a bacterial pathogen. Fruit infected with CC is not marketable due to lesions.

CC is a federally actionable bacterial plant pathogen that threatens all Citrus species and hybrids. CC presents a significant, clear, and imminent threat to California's commercial citrus production, residential citrus plantings, natural resources, and economy. Unless emergency action is taken to determine whether citrus host in the surrounding area were impacted due to the receipt of nursery stock from South Carolina, there is high potential for CC to go undetected in these areas.

To determine whether citrus host in the surrounding residential setting were impacted due to the receipt of nursery stock from South Carolina, surveillance will take place beginning April 1, 2022 and for several weeks thereafter within a 0.5-miles radius area, centered on the three sites at which CNS were received from South Carolina. Without a survey, CDFA cannot conduct an emergency eradication of the incipient infestation. If CC establishes and spreads in California, it will drastically impact the citrus industry.

The Proclamation of Emergency Program is valid until March 2, 2023, which is the amount of time necessary to determine whether citrus host in the surrounding residential setting were impacted due to the receipt of nursery stock from South Carolina. If the survey reveals that an eradication program is necessary, CDFA will issue a new Proclamation of Emergency Program.

The receipt of shipments of CNS described above requires immediate action to prevent the imminent threat to California's commercial citrus production, residential citrus plantings, natural resources, and economy. More specifically, in addition to a variety of commercial citrus crops, CC threatens loss and damage to native wildlife, private and public property, and food supplies.

Therefore, the Secretary of the California Department of Food and Agriculture is invoking Public Resources Code Section 21080(b)(4) to carry out immediate emergency action to prevent the aforementioned loss and damage to California's resources.

The surveillance plan for CC will be implemented within a 0.5-mile radius of each detection site, as follows:

- CC Survey. All host plants will be inspected for CC symptoms within a 0.5-mile radius around each property that received CNS from South Carolina. Host plant tissue will be collected and forwarded to a United States Department of Agriculture accredited laboratory for identification and analysis.

Public Notification:

Residents at properties within the survey delimitation are contacted by CDFA staff. Following the survey, completion notices are left with the residents detailing the survey purpose and method and CDFA's goal to prevent citrus canker disease outbreaks, protect the citrus industry, and safeguard the citrus trees in California.

Press releases, if issued, are prepared by the CDFA information officer and the county agricultural commissioner in close coordination with the program leader responsible for treatment. Either the county agricultural commissioner or the public information officer serves as the primary contact to the media.

Information concerning the CC program shall be conveyed directly to local and State political representatives and authorities via letters, emails, and/or faxes.

For any questions related to this program, please contact the CDFA toll-free telephone number at 800-491-1899 for assistance. This telephone number is also listed on all survey notices.

Attachments

FINDINGS REGARDING AN EMERGENCY PROGRAM FOR CITRUS CANCKER

San Bernardino, San Diego, San Luis Obispo Counties

On March 2, 2022, the United States Department of Agriculture (USDA) notified the California Department of Food and Agriculture (CDFA) of citrus nursery stock (CNS) received in California from a South Carolina nursery at which citrus canker (CC) disease was detected. Between August 5, 2021, and February 17, 2022, the South Carolina nursery sold potentially infected citrus plants online to three residential customers in California.

In coordination with USDA and local county agricultural commissioners, CDFA traced the receiving locations of these shipments to residential properties in San Bernardino, San Diego, and San Luis Obispo counties. CDFA contacted the recipients of these shipments, and the shipments were voluntarily surrendered for destruction. Citrus tree tissue was also collected from existing citrus hosts at a residence in San Bernardino County to determine whether citrus host at the residence were impacted due to the receipt of nursery stock from South Carolina. CC was not detected as a result of this survey.

CC disease is caused by the bacterium *Xanthomonas citri* ssp. *citri*. Using films of water, the bacteria enter through openings on leaves, stems and fruit of citrus hosts, multiplying, and causing necrotic lesions on leaves, stems, and fruit of susceptible hosts. The disease spreads to citrus plants through contaminated soil, containers, equipment and tools, infected plants and plant clippings, and untreated infected fruit. Wind and rain can also spread the disease between citrus plants. Severe disease can cause defoliation, premature fruit drop, twig dieback, general tree decline, and significant blemishes on fruit. Trees infected with canker become weak and unproductive. CC poses a significant threat to California's residential and commercial citrus, as it causes a decline in fruit production and the health of the tree until the tree no longer produces fruit.

CC is a federally actionable bacterial plant pathogen that threatens all Citrus species and hybrids. CC is currently found throughout Florida and in limited areas of Louisiana and Texas. USDA and state partners have put in place quarantines to contain the disease. USDA recently confirmed the presence of the disease in Alabama and is working with state partners to establish a federal quarantine to parallel the State quarantine. CC is not known to exist in California.

If unabated, the establishment of CC in California would harm the natural environment as commercial and residential citrus growers would be forced to increase pesticide use. It could lead to enforcement of quarantine restrictions by the USDA and California's international trading partners. Such restrictions would jeopardize California's citrus exports, which are valued at over \$7 billion in economic revenue.

Based upon input from USDA, the Primary State Entomologist, and the Primary State Plant Pathologist, I find it necessary to conduct surveillance to abate this threat. As a result, I am ordering visual surveillance for 0.5-mile radius around each site. This option was selected based upon minimal impacts to the natural environment, biological effectiveness, minimal public intrusiveness, and cost.

Work Plan

The proposed survey area encompasses those portions of San Bernardino, San Diego, and San Luis Obispo counties which fall within a 0.5-mile radius delimitation area around the properties which received CNS from South Carolina. This Proclamation of Emergency Program is valid until March 2, 2023, which is the amount of time necessary to determine whether hosts in the delimitation area are

impacted due to the receipt of nursery stock from South Carolina. Maps of the survey boundaries are attached. The work plan consists of the following elements:

1. CC Survey. All host plants will be inspected for CC symptoms within a 0.5-mile radius around each property that received nursery stock from South Carolina. Host plant tissue will be collected and forwarded to a USDA accredited laboratory for identification and analysis.

Public Information

Residents of affected properties will be contacted by CDFA staff. Following the survey, completion notices are left with the residents detailing the survey purpose and method and CDFA's goal to prevent citrus canker disease outbreaks, protect the citrus industry, and safeguard the citrus trees in California.

For any questions related to this program, please contact CDFA toll-free telephone number at 800-491-1899 for assistance. This telephone number is also listed on all survey notices. Survey information is posted at https://www.cdfa.ca.gov/citrus/docs/receipt_of_nursery_stock_from_sc.pdf.

Press releases, if issued, are prepared by the CDFA information officer and the county agricultural commissioner, in close coordination with the program leader responsible for treatment. Either the county agricultural commissioner or the public information officer serves as the primary contact to the media.

Information concerning the CC program will be conveyed directly to local and State political representatives and authorities via letters, emails, and/or faxes.

Findings

CC is a significant, clear and imminent threat to California's natural environment, agriculture, public and private property, and its economy. Unless emergency action is taken to survey, there is potential for sudden future CC detections in San Bernardino, San Diego, and San Luis Obispo counties. Damage to natural environment, citrus industry, native wildlife, private and public property, and food supplies will occur in the absence of survey. The work plan involving surveillance, plant tissue collection, and diagnostic analysis is necessary to prevent loss and damage to California's natural environment, citrus industry, native wildlife, private and public property, and food supplies.

Therefore, I am invoking Public Resources Code Section 21080(b)(4) to carry out immediate emergency action to prevent this loss and damage. My decision to adopt findings and take action is based on FAC sections 24.5, 401.5, 403, 407, 408, 5401-5405, and 5761-5764.

Signature on file

April 1, 2022

Karen Ross, Secretary

Date



Citrus Canker Delimitation Survey
San Luis Obispo, San Luis Obispo County
Proclamation of an Emergency Program Map (2022-01)

 Delimitation Survey Area

Map Printed 3/17/2022

0 0.5 1 Miles


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Citrus Canker Delimitation Survey
Chino, San Bernardino County
Proclamation of an Emergency Program Map (2022-01)

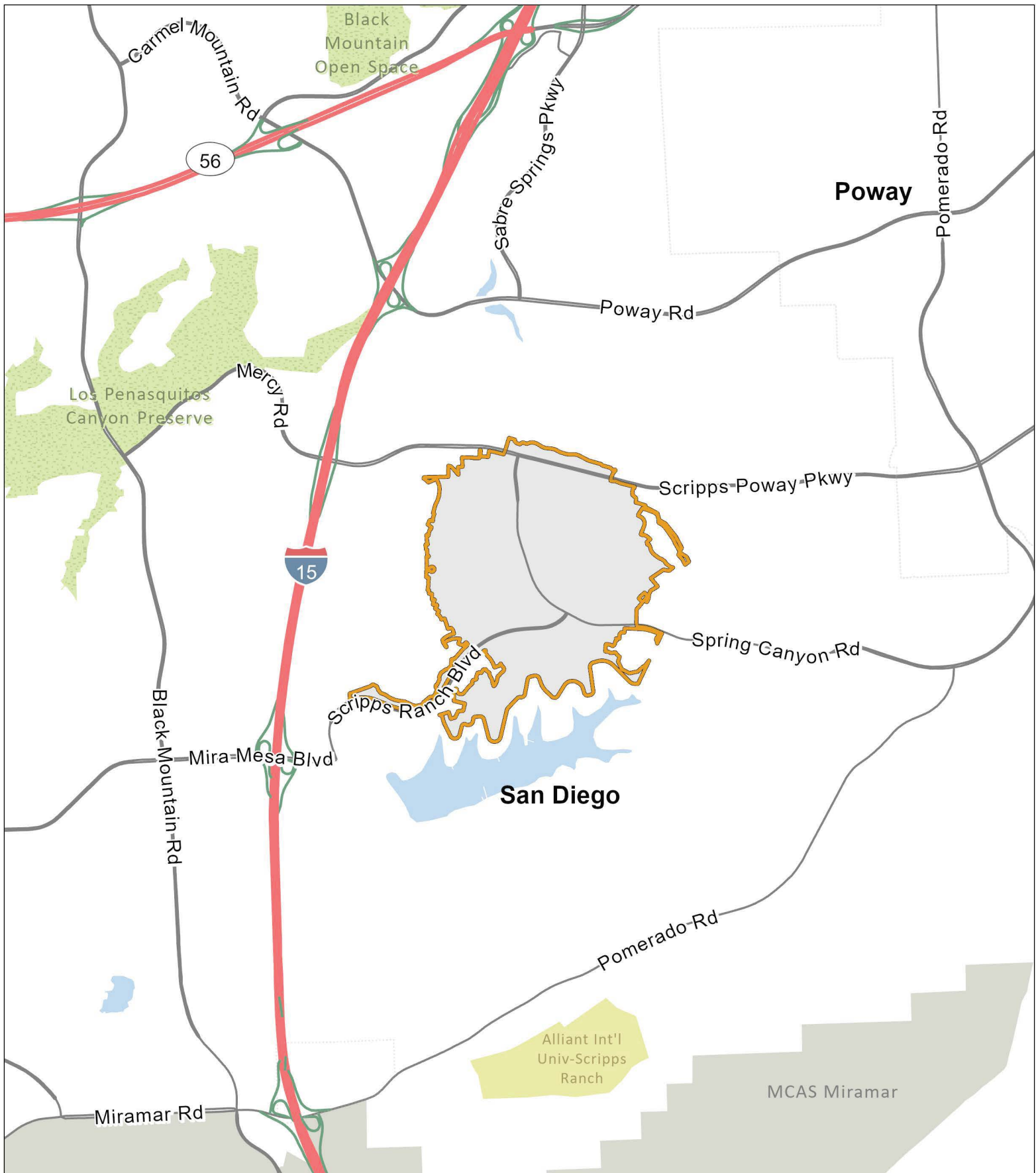
 Delimitation Survey Area

Map Printed 3/17/2022

0 0.5 1 Miles

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Citrus Canker Delimitation Survey
 San Diego, San Diego County
 Proclamation of an Emergency Program Map (2022-01)

 Delimitation Survey Area

Map Printed 3/17/2022

0 0.5 1 Miles

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Citrus Canker Pest Profile

- **Common Name:** Citrus canker disease
- **Scientific name:** *Xanthomonas citri* ssp. *citri* (Hasse, 1915) Constantin, et al. 2016
- **Type of organism:** bacteria

Description

Citrus canker is a disease caused by the bacterium *Xanthomonas citri* ssp. *citri*, a rod-shaped gram-negative bacterium with a single flagellum. Using films of water, the bacteria 'swims' through openings on leaves, stems and fruit of citrus hosts, multiplying, and causing necrotic lesions on leaves, stems, and fruit of susceptible hosts. Severe disease can cause defoliation, premature fruit drop, twig dieback, general tree decline, and significant blemishes on fruit. Trees infected with canker become weak and unproductive. There are different variants of the bacterium, the most common being Asiatic citrus canker, *Xanthomonas citri* ssp. *citri* (Canker A).

History

Originally from Southeast Asia, citrus canker is primarily established in countries with tropical and subtropical climates. In the United States, citrus canker was first found near the Florida-Georgia border in 1910, where it was considered eradicated by 1933 after an extensive culling of thousands of citrus hosts. In 1986, canker reemerged on residential citrus in Florida and then spread to commercial citrus groves. After a vigorous eradication program, it was again declared eradicated in 1994. Canker was rediscovered in Miami-Dade County in Florida in 1995, and despite a 10-year effort to eradicate the disease, eradication ended in early 2006 due to program challenges and hurricanes spreading the disease over large areas. Efforts are now focused on management and containment of canker, and protection of nursery stock.

Distribution

Asiatic citrus canker is established in various citrus-producing countries, including many in Southeast Asia, Africa, Australia, Brazil, the Middle East, and the United States. In addition to establishment in Florida. There have been recent finds in Louisiana and Texas in 2014 and 2016, respectively. The disease is not known to be in California. There is no record of seed transmission of citrus canker, and an introduction to California would most likely occur through improper movement of infected host material.

Citrus canker has three major variants: Canker A, Cancrosis B and Cancrosis C. Each variant is differentiated by geographical distribution and host susceptibility.

Canker A (caused by *X. citri* ssp. *citri*) is the Asiatic form of the bacterium and the most destructive. It infects most of the major citrus cultivars and can lead to defoliation, severe fruit blemishes, dieback, reduced fruit quality and premature fruit drop. Canker A can be found in Asia, Africa, South America, and parts of the United States. It affects all citrus hosts, the most susceptible being grapefruit.

Cancrosis B caused by a different subspecies called *aurantifolii* affects lemon, Mexican lime, sour orange, and pummelo. It causes symptoms like Canker A, but lesions are smaller and through testing shows slower bacterial growth. Cancrosis B has mainly been found in Paraguay, Uruguay, Argentina, and Brazil.

Cancrosis C also caused by subspecies *aurantifolii* was primarily found on Mexican lime and produces the same smaller lesions as Cancrosis B. Cancrosis C was primarily found in Brazil.

Cancrosis B and C exist primarily in laboratory collections and may not be easily found in the environment today. This seems to be because Canker A is more aggressive and quickly dominates in areas where it has been introduced accidentally.


Symptoms

Citrus canker causes lesions that are visible on citrus leaves, stems, and fruit. Lesions appear as brown spots on the upper and lower side of leaves, are oily in appearance, and surrounded by a yellow halo. As the disease progresses, lesions become corky and may manifest a crater-like depression the center. Infected citrus trees can experience early leaf fall. The lesions on fruit and stems are like those found on leaves. Infected fruit may drop prematurely and is susceptible to secondary infection by other organisms. Severe infection can also cause shoot dieback and defoliation. The bacterium can survive for long periods of time in diseased tissues that includes the discoloration of tree bark on trunks and limbs.

Citrus canker is primarily spread short distances through high wind and rain, water splash, and may be assisted by irrigation systems. Citrus leafminer larvae can also aid in spreading citrus canker by exposing internal plant tissue. Infected plants and plant parts (budwood and rootstock seedlings) are the primary source of long-distance spread. The bacterium swims through any openings in leaves and newly growing shoots ranging from natural openings (such as leaf stomata) or unnatural openings (such as insect wounds or wounds caused by pruning). Citrus leafminer is widely established in California. The most critical time for fruit infection is usually 90 days after petal fall where the bacterium will remain in the infected hosts until leaves and fruits fall.

Hosts

Citrus canker can be found on numerous species of citrus and their hybrids. Hosts that are highly susceptible to the disease are grapefruit, Mexican lime, sweet lime, lemon, and trifoliate orange. Three citrus varieties known to show resistance to the bacteria are kumquat, calamondin, and citron.

Highly Resistant		Calamondin, Kumquat
Resistant		Mandarin, Citron
Less Susceptible		Tangerine, Tangelo, Sour Orange, Blood Orange
Susceptible		Tangerine, Tangelo, Navel Orange, Pummelo, Limes, Trifoliate orange
Highly Susceptible		Grapefruit, Mexican/Key lime, Lemon

Damage and Economic Importance

Millions of dollars are spent annually worldwide on prevention, quarantines, eradication, and control for citrus canker. Potential costs to California include the eradication and/or management of the disease, and the economic fallout from the destruction of trees, including costs incurred from tree removal and lost revenue from quarantine implementation and regulation. An introduction of citrus canker in California would prove devastating to California's citrus industry, which was valued at \$3.389 billion in 2017.

This disease cost Florida more than \$6 million from 1915-1933. The destruction of over 20 million citrus trees in the 1980's cost Florida \$94 million in lost revenue. In 2006, Florida's citrus canker eradication program cost nearly \$1 billion.

Sources

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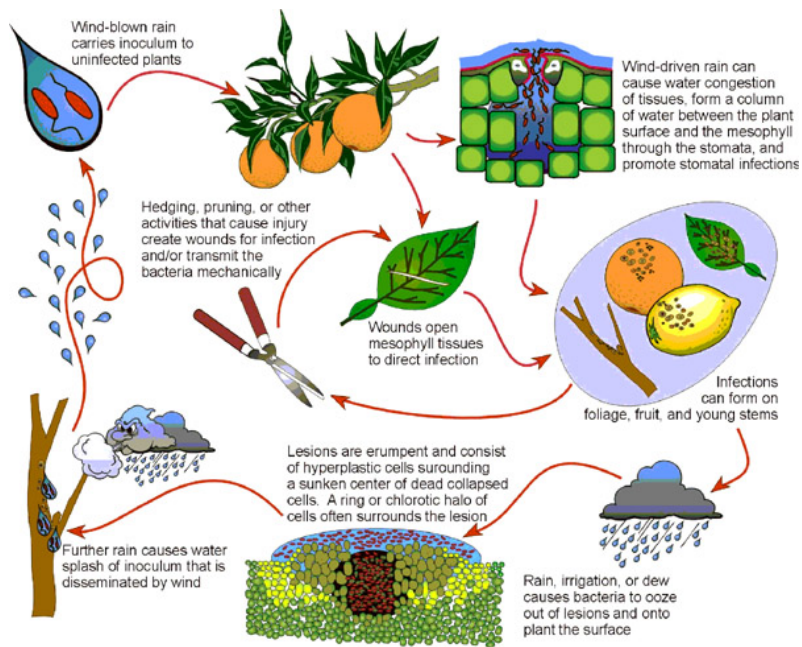
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Source: Tim R. Gottwald, USDA



Photo credit: M. Dewdney



Photo credit: USDA