

Subject-Botany

Class-Bsc-III

Paper-I (Pathology)

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Topic- Citrus Canker Disease

Citrus canker, a contagious plant disease caused by the bacterium *Xanthomonas citri* subsp. *citri* (syn. *X. axonopodis* subsp. *citri*), can cause severe damage to all citrus cultivars and some citrus relatives. The disease is not a risk to human or animal health but makes fruit unsightly and unmarketable.

The disease was introduced into the United States from Japan in the early 1900s. Through quarantine and eradication programs initiated by the federal government and states affected by the disease, citrus canker appeared to have been eradicated from Texas by 1947. Citrus canker can be a serious disease where rainfall and warm temperatures are frequent during periods of shoot emergence and early fruit development. This is especially the case where tropical storms are prevalent. Citrus canker is mostly a leaf-spotting and fruit rind-blemishing disease, but when conditions are highly favorable for infection, infections cause defoliation (Figure 2), shoot dieback, and fruit drop.

Symptoms

The bacterium grows and multiplies in diseased plant parts—all aboveground parts of the citrus tree are susceptible. Citrus canker causes premature leaf and fruit drop, twig dieback, general decline, and blemished fruit (Fig. 1). Blister-like lesions on leaves and fruit start small and expand as the disease progresses. These lesions may darken to tan or black and develop a water-soaked margin with a yellow halo surrounding it (Fig. 2). The center of the lesion on leaves as well as on stems and twigs can appear raised and corky or scabby (Fig. 1), surrounded by a water-soaked margin. Mature lesions on older symptomatic leaves may have a shot-hole look (Fig. 2) and these lesions eventually die and fall out.

Causal Organism: The bacterium *Xanthomonas axonopodis* pv. *citri* is a rod-shaped, gram-negative,



Figure 1



Figure 2

Control

Since there is no cure for the bacterium, prevention is the best approach to managing citrus canker.

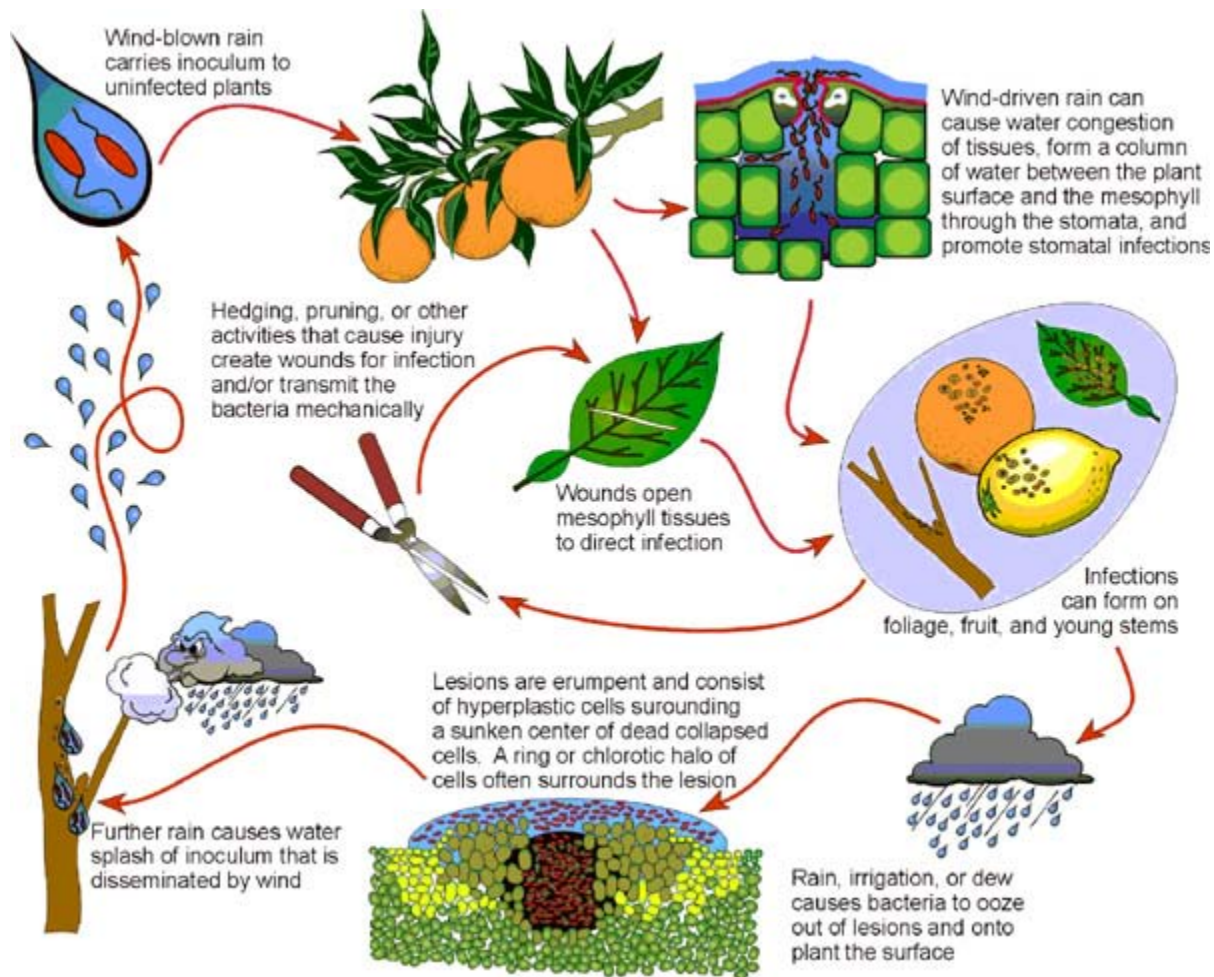
Exclude the pathogen from areas it is not known to exist by buying plants, budwood, and seedlings only from TDA-certified citrus nurseries.

Implement TDA regulations before moving citrus materials (including budwood, seedlings, and fruit) within or outside of the state.

Use good sanitation practices to reduce potential disease spread. Practice general cleanliness and use alcohol-based sanitizers, bleach solution, and antibacterial soap solutions to decontaminate equipment and tools and reduce the risks associated with human and mechanical transmission of the disease.

Remove and destroy diseased plants to eliminate potential bacteria for future infections.

Monitor nearby citrus plants. If new infections appear, take action swiftly. TDA regulations require disposal of infected tree and plant material by burning or bagging and burying it at least 2 feet deep at a municipal landfill.



Citrus Canker disease cycle