



LEUCOSTOMA CANKER OF STONE FRUITS

Leucostoma canker, also called perennial canker, Cytospora canker, Valsa canker, is an important disease of peaches, nectarines, and sweet cherries in cooler climates. The disease occurs throughout the eastern United States. Leucostoma canker is associated also with the peach tree short life syndrome. Pathogens are the

fungi *Leucostoma persoonii* and *Leucostoma cinctum*

[teleomorphs (sexual stages)].

The [anamorphs (asexual stages)] of these fungi are

Cytospora leucostoma and

Cytospora cincta (Syn. *Valsa leucostoma*, *Valsa cincta*).



Figure 1. *Leucostoma cankers of peach.* (Courtesy A. R. Biggs, A. L. Jones, and T. B. Sutton).

Symptoms

Cankers develop on branches, scaffold limbs, branch crotches, and trunk and are oval to elliptical in outline and often are surrounded by roll of callus at the margins (Figure1).

Characteristic white, circular fruiting bodies (pycnidia) of the fungus are visible when the bark is removed over the cankered area (Figure 2). Infected 1-year-old shoots exhibit dieback. Water-soaked tissue and gumming may be observed on branches and limbs at the bases of infected shoots (Figure 1). Cankers enlarge each year until the limb or trunk is completely girdled. Active cankers often have gum associated with them, but presence of gum by itself is not diagnostic. Old cankers are rough and charcoal-black

Life cycle

The pathogens overwinter in the cankers or on dead woods. Fruiting bodies (pycnidia) of the pathogens are located in diseased tissue under the bark (Figures 2 and 3). Spores (conidia) are

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produced in pycnidia and are disseminated by splashing and wind-driven rain. Infection is through damaged or injured bark. Cold injury is the most important factor predisposing trees to cankers; pruning wounds, mechanical damage, insect punctures, and leaf scars are other entry points.

Moisture is required for germination of spores. The rate of canker development after infection depends on temperature and the species of pathogen involved. *Leucostoma cincta* is favored by lower temperatures than *Leucostoma personii*. Optimum temperatures for growth of *L. cincta* and *L. personii* are approximately 68 and 86°F (20 and 30°C), respectively. When the temperatures are not favorable for fungal activity, callus formation occurs.

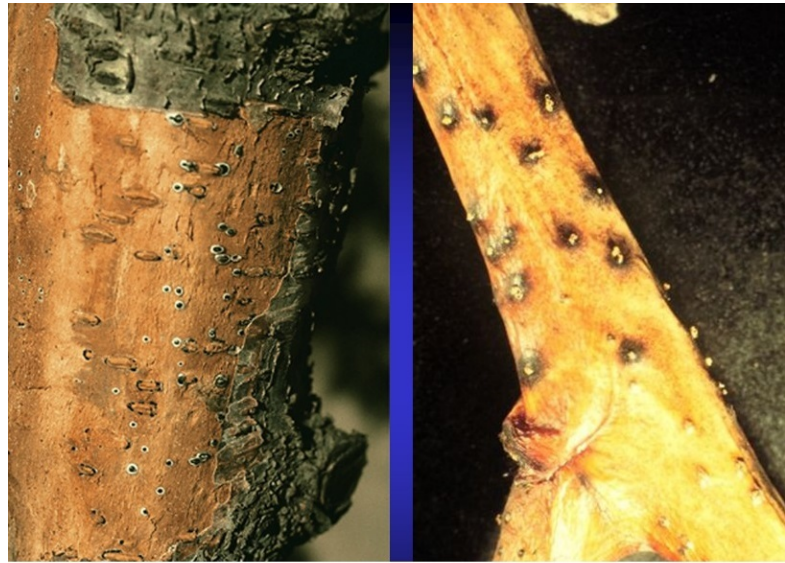


Figure 2. Fruiting bodies (pycnidia) of *Leucostoma* pp. Pycnidia can be seen by removing bark of cankered area. (Courtesy A. R. Biggs, A. L. Jones, and T. B. Sutton).

Disease management

No single method provides adequate control of *Leucostoma* canker. Management strategies include cultural practices that are aimed at reducing the susceptibility of trees to canker and inoculum of pathogens in and around the orchard. Cultural practices that help to reduce the incidence and severity of *Leucostoma* canker include planting new orchards on well drained sites; using management practices that promote winter hardiness; avoiding excessive fertilizers; planting a cover crop in the orchard; applying white latex paint to the southwest side of trunks and lower scaffold branches to prevent cold injury; delaying pruning trees until growth starts in spring, when the cuts quickly heal; avoiding pruning in November or earlier, which severely weakens trees;

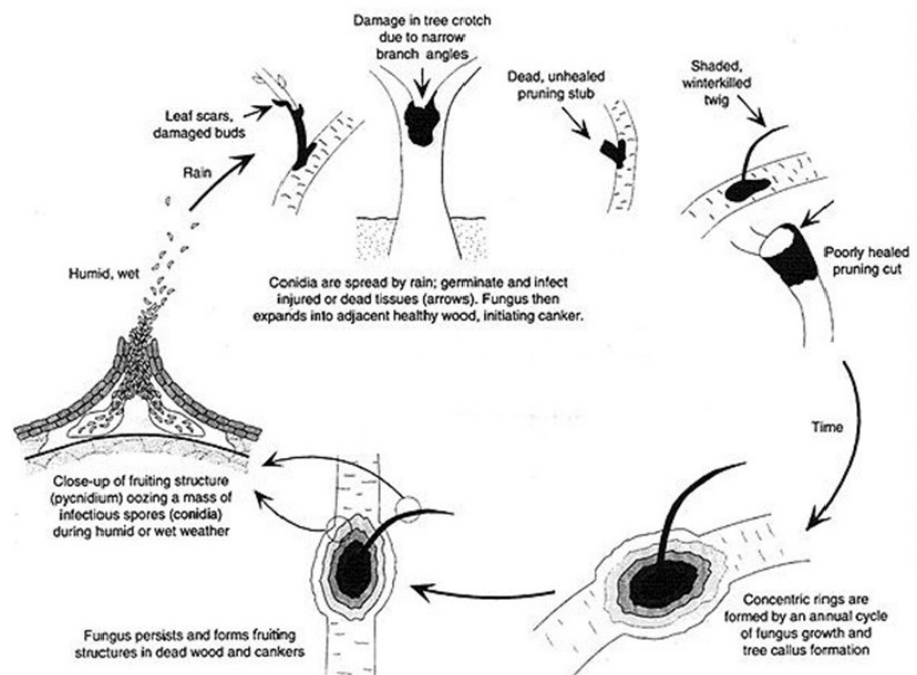


Figure 3. Disease cycle of *Leucostoma* canker of stone fruits. (Courtesy The American Phytopathological Society).

preventing mechanical, insect, and rodent injury; and avoiding weak-angled crotches when shaping trees.

Inoculum of the pathogens can be reduced by removing and destroying severely cankered limbs, branches, or trees and by planting new peach orchards away from older orchards heavily infected with peach canker. Sanitation is very important during the early life of the orchard.

Cankers should be removed, and (if possible) burned, buried, or moved out of the orchard. Cankers on trunks and large limbs can be removed surgically in mid-summer when trees heal most rapidly (Figure 4). Surgery should be performed in dry weather with a forecast of dry conditions for at least three days. During surgery, remove all diseased bark around the canker and about 1.5-2 inches (4-5 cm) of healthy tissue from the sides and ends, respectively. Disinfect cutting tools between cuts with an alcohol or bleach solution. The resulting wound when finished should have a smooth margin and be slightly rounded above and below to favor rapid wound closure. The practice of covering pruning cuts in spring with a thiram-latex paint mixture provides some degree of protection against fungal infection. Sites of surgery heal best if left uncovered.

Cultivar selection is important and only cultivars tolerant of cold temperatures should be planted. No commercial cultivars are immune or highly resistant to the *Leucostoma* canker pathogens. There are no fungicides registered specifically for control of *Leucostoma* spp. The combination of captan and thiophanate-methyl, when used for brown rot blossom blight control, may provide recent pruning cuts some degree of protection against infection by *L. personii*. The application of canker paints during moist weather should be avoided.

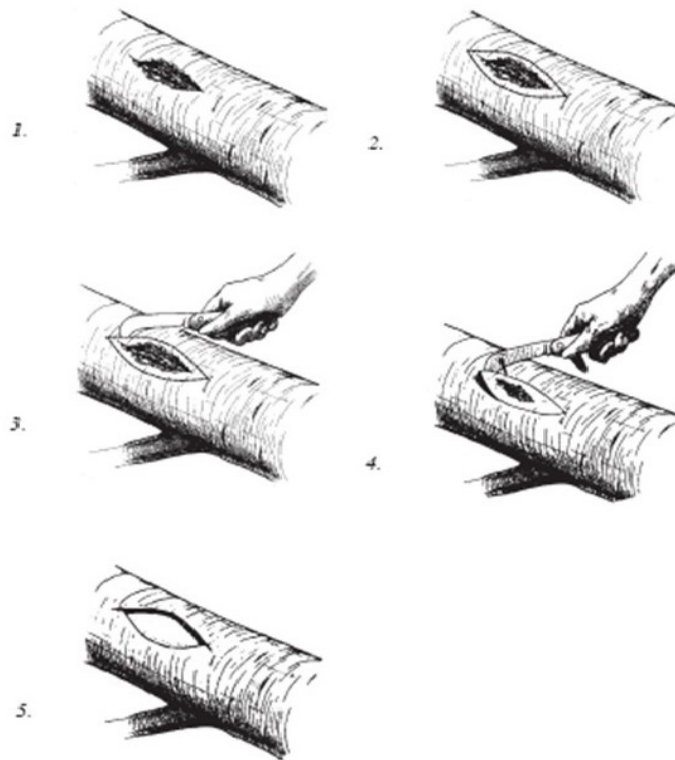


Figure 4. Removal of *Leucostoma* canker of stone fruits.