PennState Extension

Cytospora Canker of Stone Fruits in the Home Fruit Planting

Cytospora canker, also known as perennial canker, peach canker, Valsa canker, and Leucostoma canker, can cause trees in young orchards to die. Infected trees in older orchards slowly decline.

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Symptoms

The fungus attacks the woody parts of stone fruit trees through bark injuries, pruning cuts, dead shoots, and buds. Visible first is the exudation of gum at the point of infection. The canker forms from a small necrotic center that slowly enlarges with the collapse of the inner bark tissue. Cankers enlarge more along the length than the width of the branch. Older cankers therefore are oval to elongated in outline.

The outer bark of new cankers usually remains intact, except at points of gumming. In older cankers the bark in the center becomes torn. The gum turns black from alternate wetting and drying and from the presence of saprophytic fungi. Older cankers are surrounded by a roll of callus tissue. Each year, the canker enlarges by repeated invasion of healthy tissue. With renewed growth in the spring, the tree forms a callus ring around the canker as a defense mechanism. This can be a very effective defense except when the lesser peachtree borer breaks the callus ring by burrowing through it into healthy tissue.

Disease Cycle

The fungi causing the disease overwinter in cankers and dead twigs. Small, black, fruiting bodies appear on the smooth bark covering diseased areas of dead wood and begin to produce spores once temperatures are above freezing. Wet weather washes the spores from the fruiting structures. Infections do not usually occur when trees are growing vigorously; most occur during early spring, fall, and winter.

Healthy bark or buds are not attacked by the fungus. Cold-injured buds or wood and pruning cuts are the most important sites of infection. The fungus also can penetrate brown rot cankers, oriental fruit moth damage, sunscald wounds, hail injury, leaf scars, and mechanical wounds. Once established in the wood, the fungus forms a canker by invading the surrounding healthy tissue.

Disease Management

Managing Cytospora canker involves total orchard management. Since no stone fruit tree is immune and fungicide treatments alone are not effective, control efforts must be aimed at reducing tree injuries where infection could begin.

Planning a New Orchard

- Select a site well away from old cytospora-infected trees. This has proven to be the best method of keeping canker out of newly planted orchards.
- Select a site with deep, well-drained soil and good air drainage to reduce the possibility of winter injury.
- Plant only the hardier varieties, especially if cytospora canker has been a major problem in your orchard. Also, painting the southwest side of trunks and the lower scaffold limbs of cold-susceptible varieties with white latex paint will moderate temperatures somewhat under the bark and reduce cold injury and canker in critical areas of the tree.
- Plant only disease-free nursery stock. If trees are planted when infected with cytospora they will probably not live to produce fruit.
- Plant whips no larger than 9/16 inch in diameter. Large-diameter whips do not heal properly when headed back and can become rapidly infected with cytospora. The infection becomes obvious in the crotch of the tree when it is 3 to 4 years old.

Fertilizing

- To avoid late, cold-tender growth in the fall, fertilize in late winter or early spring.
- Avoid excessive nitrogen fertilization. Excessively vigorous trees are slow to harden off in the fall and can be injured by cold if early frosts occur. Cold-injured tissue is very susceptible to cytospora infection.

Training and Pruning

- Start training young trees early to prevent broken limbs as a result of poor tree structure. Broken branches create susceptible sites for cytospora infection.
- Prune regularly so that large cuts will not be necessary. Prune during or after bloom; actively growing trees can protect pruning cuts from infection. Do not leave pruning stubs; stubs die and can harbor the disease, which can then infect healthy branches. Remove or spread narrow-angled crotches since they tend to split and serve as infection sites. Remove all weak and dead wood and fruit mummies. Spray newly pruned trees the same day if possible or before the next rain with a fungicide used to control brown rot.

Controlling Insects and Other Diseases

- Control lesser peachtree borer--it aids in canker expansion and the eventual death of the tree.
- Control brown rot and remove any brown-rotted fruit from trees before cankers form on the twigs. Annual brown rot cankers can serve as infection sites for cytospora.
- Control oriental fruit moth and peachtree borer. Injuries inflicted by these insects serve as infection sites

Eradicating Cytospora Canker

- During bloom or later, remove all cankers on small branches, cutting at least 4 inches below the margin of the canker.
- Surgically removing cankers on younger trees can prevent the slow decline and ultimate death of the tree. Recent research trials have shown that although this procedure is time consuming (the average treatment time ranges from 1 to 5 minutes per canker), it is nearly 100 percent effective. If the surgery is done

improperly, however, the canker is almost never eradicated. When surgery is conducted before too many cankers are evident on each tree, cankers can be eliminated from young orchards before extensive infection and tree death occur.

The best time of the year for canker surgery is May and June. To remove diseased tissue and promote maximum healing, take the following steps (Figure 5.6 below):

1. Do not attempt surgery on cankers encompassing more than half the branch circumference. Diseased tissue often extends beyond the canker margin that is visible at the bark surface.
2. Place your knife at the top of the canker 1/2 to 1 inch above visible diseased tissue.
3. Outline the area to be removed, maintaining a 1/2- to 1-inch margin beyond the canker. Outline a point at the top and at the bottom of the area to be removed. When outlining, press the knife blade straight through the bark into the wood.
4. Push the knife blade beneath the bark of the outlined area and remove the diseased tissue. It is not necessary to dig into the hardwood.
5. Clean out all diseased tissue. *Note:* If the diseased brown tissue extends into the margin of the cut, expand the margin until only healthy (green) tissue is evident at the margin. Keep the margin of the cut clean; torn tissue will not heal properly.
6. *Do not paint cut surfaces with standard wound dressings* (water asphalt emulsions, oil-based paints, or Latex paints). They have not proven beneficial in the wound-healing process.

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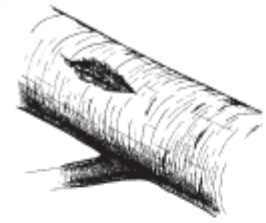

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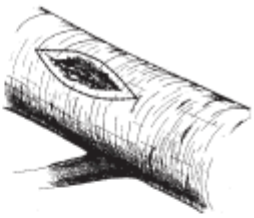

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