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Cytospora Canker of Fruit Trees:

Leucocytospora cincta; L. leucostoma

Introduction

Cytospora canker (or Valsa canker) is a very destructive peach disease that causes reduced yields and even death of trees. Cankers occurring on large scaffold branches, in the main crotches, or on the trunk may enlarge to girdle and kill the portion of the tree above that point. Though considered primarily a peach disease in New York, Valsa canker can also infect apricots, plums, prunes, and sweet and sour cherries.

Figure 1: Dieback symptoms.

Symptoms and Signs

The first visible symptom is the oozing of gum near the point of infection, beginning in April or early May. The gum first has a light amber color that gradually turns to a dark brown. Beneath the gum, the inner bark begins to collapse, leaving a sunken area on the surface of the bark. The fungus advances more rapidly up and down the branch than around the branch, giving the canker an elongated or elliptical shape. The bark dries out and dies but usually remains intact the first year. In succeeding years the bark becomes broken, disfigured, and covered with a black fungus overgrowth. Old cankers often show "annual rings" of wound callus that mark each season's advance of the fungus followed by the tree's attempt to delimit the wound. Along with the gum oozing from the canker, there may be frass from lesser peachtree borers that often invade the cankers.

Figure 2: Symptom as seen on plum tree bark

An often overlooked symptom is the dieback (**Fig. 1**) of Valsa-infected twigs in the spring and early summer, usually accompanied by gumming at the base of the twig. The second year a typical canker may develop on the main branch around the base of the dead twig.

Disease Cycle

Cytospora canker is caused by two species of fungi, *Leucocytospora cincta* and *Leucocytospora leucostoma.* These fungi cannot invade through intact, healthy bark, but require a wound or dead or dying tissue to become established before they can infect healthy tissue. The most common points of entry are: (1) natural wounds such as winter-injured tissue, sunscald-injured bark; bark damaged in narrow-angled crotches, or in tender twigs and buds (2) pruning cuts made when the tree is dormant or during wet weather; (3) pruning stubs, which dry out and die back to the main branch; (4) damage caused by insects or pathogens; and (5) mechanical injuries to the bark and branches.

Growth of the fungus occurs in winter whenever the temperature rises above freezing and stops again in the spring when growth of the tree resumes. New infections usually start in the late fall or early spring when the tree is dormant. As the temperature rises during late spring and the tree becomes active, the growth of the fungus slows down. The tree forms wound callus that tends to envelop the canker. As the tree becomes dormant again in the fall, the fungus resumes activity and enlarges the canker.

Cytospora spp. produce spores in tiny, black, pimple-like fruiting bodies which break out through the bark. The spores are disseminated mainly by splashing rain but also to some degree by wind, insects, birds, people, tools, and machines.

Management Strategies

Preventing Cytospora canker infections is a matter of overall orchard management and proper tree care:

Setting a new orchard:

1. Select a site for the new orchard well away from the old, Cytospora infected trees, or completely remove all of the cankers from the old trees.

2. Select a site with deep, well-drained soil and with good air drainage to reduce the possibility of winter injury.

3. Plant only the hardier varieties.

4. Use rootstocks which are hardy and induce early hardening of the scion. (Examples: Siberian C and Harrow Blood)

5. Plant only disease-free nursery stock.

Fertilization & Watering:

1. To avoid late, cold-tender growth in the fall, fertilize in late winter or early spring.

2. Avoid excessive nitrogen fertilization; also avoid potassium deficiency.

3. Water during dry weather.

Pruning and Training:

1. Prune in early spring between the time when trees begin growth and full bloom. Do not leave pruning stubs.

2. Prune on a regular program so that large cuts will not be necessary.

3. Spread narrow-angled branch crotches or remove one of the branches forming the narrow- angled crotch. Start a training program early with young trees.

4.Remove all weak and dead wood.

Cultivation and Injuries:

1. Plant a permanent sod cover to avoid root injury which occurs with cultivation.

2. If clean cultivation is practiced, do not cultivate later than mid-July. At the last cultivation, sow a cover crop.

3. Avoid chemical and mechanical injuries to the trunk and branches. Do not hit the trunk with the mower when mowing the sod cover.

Manage Insects and Diseases:

1. Control peachtree borer and lesser peachtree borer.

2. Control brown rot, and remove any brown-rotted fruit from the trees before brown rot cankers form on the twigs.

Sanitation:

1. In February and March remove all cankers on small branches, cutting at least 4 inches below margin of the canker. (NOTE: This is not the regular pruning).

2. If the canker is on the trunk or on a scaffold branch, remove all diseased tissue, both bark and wood, with a chisel or knife. Before cutting healthy tissue with a tool which has been used to cut infected tissue, disinfect the blade by swabbing it in a solution of 7 parts denatured alcohol and 3 parts water.

3. Burn or bury all pruned tissues exhibiting any evidence of a canker.

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READ THE LABEL BEFORE APPLYING ANY PESTICIDE! Changes in pesticide regulations occur constantly. All pesticides distributed, sold, and/or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension Specialist or your regional DEC office.

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