

Purdue University

Purdue e-Pubs

Historical Documents of the Purdue
Cooperative Extension Service

Department of Agricultural Communication

January 2016

Cytospora Canker of Spruce

Paul C. Pecknold

Purdue University, pecknold@purdue.edu

Follow this and additional works at: <https://docs.lib.purdue.edu/agext>

Pecknold, Paul C., "Cytospora Canker of Spruce" (2016). *Historical Documents of the Purdue Cooperative Extension Service*. Paper 1114.

<https://docs.lib.purdue.edu/agext/1114>

For current publications, please contact the Education Store: <https://mdc.itap.purdue.edu/>

This document is provided for historical reference purposes only and should not be considered to be a practical reference or to contain information reflective of current understanding. For additional information, please contact the Department of Agricultural Communication at Purdue University, College of Agriculture: <http://www.ag.purdue.edu/agcomm>

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact epubs@purdue.edu for additional information.



BP-38-W

ORNAMENTAL DISEASE

Purdue University

Cooperative Extension Service

West Lafayette, IN 47907

Cytospora Canker of Spruce

Paul C. Pecknold, Extension Plant Pathologist

The beauty of many ornamental spruce plantings has been destroyed by the fungus disease known as Cytospora canker. This damaging stem disease is most commonly found on blue spruce, but it also has attacked Norway spruce and hemlock. Cytospora canker usually is associated with older and/or weakened trees, trees whose lower branches or roots have been injured, and trees that are growing in restricted sites or in other poor growing situations. It is seldom a problem on young, vigorous trees.

Symptoms

Cytospora canker first affects the lower branches and gradually progresses upward. Needles on affected branches turn brown, die and begin to drop off, resulting in a dead, naked branch. Mite injury produces similar symptoms and is often confused with Cytospora canker injury. To check for mites, hold a sheet of white paper under a branch and tap the branch sharply. If mites are present, they will fall off and be seen as black specks crawling over the paper. (See Publication E-42, *Spider Mites on Ornamentals*, for further information on identification and control of mite damage. It is available at your county Extension office.)

[E-42](#)



Figure 1. Defoliated lower branches caused by Cytospora canker.

Branch cankers (infected areas) are often difficult to find, but are generally located well back on the branch near the trunk of the tree. A bluish white resin or pitch frequently coats the cankered area of the branch and is an important

diagnostic symptom of *Cytospora* canker. This sticky resin frequently will drip onto the trunk and branches below, often producing an extensive accumulation of resin. Other factors may cause resin flow, such as insect injury, sapsucker wounds, or mechanical damage; be sure to check for such other possible causes of resin flow.

Cause

Cytospora canker is caused by the fungus *Cytospora kunzei*. Small, black spore-producing bodies of the fungus are produced in the cankered area of the bark. After a moist period, orange-colored, curled tendrils of spores are produced which are then spread by splashing rain and wind. Consequently, infection is thought to take place most frequently during the spring and fall. The fungal spores readily invade wounds or other weakened tissue.

Control

Because older, weakened trees are most susceptible to *Cytospora* canker, it is important to maintain and/or improve tree vitality. When planting new trees, choose a site with good, moist, well-drained soil. Avoid planting trees near any structure (roadways, sidewalks, building foundations, etc.) that might restrict root growth.

1. Maintain tree health. The two most important steps in maintaining good tree vigor are to water and fertilize on a regular schedule. With normal rainfall and a favorable site, trees require little additional watering. However, during periods of prolonged drought or on dry sites regular watering is important during the growing season. The most beneficial method of watering is to apply an amount equal to 2 inches of rainfall every 2 or 3 weeks in one complete, heavy soaking of the feeder root area.



Figure 2. White resin flow - a characteristic symptom of *Cytospora* canker

If trees are located in a grass area, normal fertilization of the lawn is generally sufficient to maintain tree health; otherwise trees should be fertilized every 2-3 years with a high-nitrogen fertilizer. Refer to publication BP-37 (Tree Decline) for further information on tree fertilization and stress factors.

[BP-37](#)

With older, well-established trees, avoid any disturbance to the root system that may result in root injury or poor root growth. Also, spruce are extremely vulnerable to spider mite injury. Monitor for spider mites on a regular schedule as described previously and treat as necessary.

2. Selectively prune out lower branches. Where possible (without destroying tree appearance), selectively prune out branches that retard air movement near the base of the tree. These low branches frequently are wounded by lawnmowers, pets, and general traffic and thus are most frequently invaded by the fungus. Weak and injured branches should be cut off flush with the tree trunk. Pruning during wet periods can spread the disease; therefore, prune only when the foliage and bark are DRY.

3. Chemical treatment. To date, no fungicide has been shown to provide adequate control of *Cytospora* canker. Reports indicate that spraying with Bordeaux mixture (8-8-100) or other copper-containing fungicides after the removal of diseased branches has been helpful in retarding disease spread. It also is likely that early spring applications of these fungicides would be beneficial in preventing further infection; however, further study is required to determine the effectiveness of these and other chemical applications.

REVISED 5/01

It is the policy of the Purdue University Cooperative Extension Service, David C. Petritz, Director, that all persons shall have equal opportunity and access to its programs and facilities without regard to race, color, sex, religion,

national origin, age, marital status, parental status, sexual orientation, or disability.

Purdue University is an Affirmative Action employer.

This material may be available in alternative formats.

1-888-EXT-INFO

<http://www.ces.purdue.edu/extmedia>