Cytospora Canker of Spruce
Michigan State University
Cooperative Extension Service
Sandra Perry, Department of Botany and Plant Pathology
John Hart, Department of Botany and Plant Pathology
September 1984
2 pages

Cooperative Extension Service
Michigan State University

Extension Bulletin E-1078, $1.00
September 1984, Revised—Destroy Previous Editions

Cytospora Canker of Spruce

by Sandra Perry and John Hart, Department of Botany and Plant Pathology, Michigan State University

The principal hosts of cytospora canker, caused by the fungus *Valsa kunzei* Fr. (asexual form: *Cytospora kunzei* Sacc.) are the Colorado blue spruce and its varieties. The disease also occurs on Norway Spruce, Koster's Blue Spruce, White Spruce, Douglas Fir and other spruces planted as ornamentals. The most commonly attacked trees are 15-25 years old and 20-40 feet in height.

Symptoms

The most striking symptom of cytospora canker is the death of branches; usually those nearest the base of the tree die first (Figure 1). There is a progressive dying of branches upward in the tree. The tree seldom dies outright as only a few limbs are killed each year. However, the progression of dieback ruins the symmetry of the tree and reduces its aesthetic value.

The actual girdling caused by the fungus will occur on any part of the branch except the small twigs. Cankers are inconspicuous, with little or no bark deformation. The fungus grows throughout the inner bark causing the death of the distal portion. Needles on infected branches turn grayish-green then brown and may drop immediately or persist on the branch for a year.

A heavy pitch flow is characteristic of the disease. The pitch is clear amber color when freshly exuded, but later it hardens and produces a crusty whitish coat over the cankers (Figure 2). Lower healthy branches may sometimes become covered with resin exuded from infected upper branches.

If the bark is shaved carefully in the area between diseased and

Fig. 1. Lower branches of blue spruce killed by the cytospora canker fungus.

healthy tissue, tiny black fruiting bodies (pycnidia) of the fungus will be visible (Figure 3). Spores (conidia) ooze from the fruiting bodies during wet spring and summer weather and are capable of causing new infections if they land on freshly wounded wood.

Control

Early detection of infected branches reduces the probability of more extensive disease development. However, since infected branches cannot be saved they should be pruned flush with the trunk. Prune only during dry weather to avoid spreading spores to healthy branches. Affected branches must be burned promptly. If not destroyed, the cankered area will continue to produce spores for many weeks. Continuous surveillance for the detection of new cankers is especially important.

Spruce trees subjected to drought or to other environmental stresses appear to be more susceptible to cytospora canker than vigorous trees. Hence, fertilizing and watering during dry periods are helpful in promoting tree vigor.

There are no chemical sprays that give satisfactory control of cytospora canker on spruce.

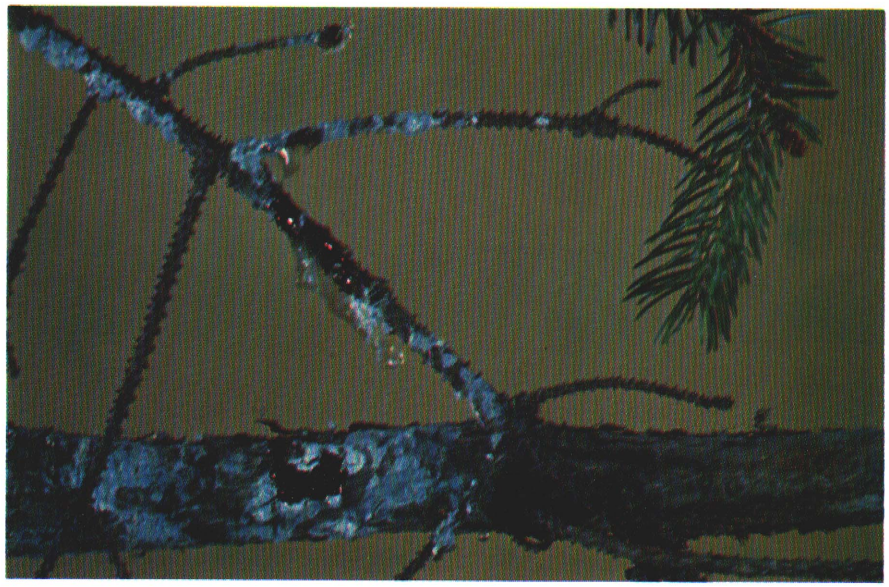

Fig. 2. Resin flow at canker sites hardens to a white crust.

Fig. 3. Black areas just under the bark are pycnidia of *Valsa kunzei*.

MICHIGAN STATE UNIVERSITY
CES
COOPERATIVE EXTENSION SERVICE

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Gordon E. Guyer, Director, Cooperative Extension Service, Michigan State University, East Lansing, MI 48824.

3P—2M—9:84—TCM—SP. Price $1.00. For Sale Only. Revised, destroy previous editions.