The Plant Doctor's LANDSCAPE TIPS

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CYTOSPORA CANKER OF SPRUCE

INTRODUCTION:

Spruce trees (Picea sp.) represent a group of Conifers that are widely utilized in landscapes throughout North America. Among the spruces, there are many different species that contribute various growth characteristics, colors and textures that may enhance various aspects of our landscapes. Some of these different species and varieties include Colorado Blue, White, Spartan, Norway, and Dwarf Alberta.

Invariably, as with other plants, spruces contract their own pests and disease problems. One of the most common diseases on spruces is known as Cytospora canker, caused by the fungus *Cytospora kunzei* (also reported as *Valsa* or *Leucostoma kunzei*). Colorado blue spruce (*Picea pungens 'glauca'*) and Norway spruce (*Picea abies*) appear to be the most susceptible. This fungus, or various closely related forms, may also attack hemlocks (Tsuga sp.), firs (Abies sp.) and larches (Larix sp.).

DIAGNOSIS AND SYMPTOMS:

Cytospora initially attacks the lower branches of spruce trees, resulting in lower branch dieback (Photo 1). Most commonly, older trees, ex. larger than 20-30 feet in height, are most susceptible. Close inspection of afflicted trees will usually disclose resinous areas on affected branches known as cankers (Photo 2). These resinous areas represent sap secretions (bleeding) from branch areas damaged by Cytospora fungal activity. Cankers destroy the vascular tissue of the branch, leading to branch death. In succeeding years, the fungus may spread to nearby branches as it advances upwards into the tree. Spread may occur through splashing rain, by birds and other mechanical means. This advance of the fungus from lower to lower middle to middle branches may take many years. In general, even in advanced cases, trees are rarely killed by the fungus; most likely, trees reach an age and size in which many secondary pests, diseases and stresses work together to lead to the ultimate death of spruce trees. Overall, Cytospora canker is probably more of an aesthetically damaging disease than a life threatening problem.

The Cytospora fungus generally does not attack young, healthy spruce trees. Another disease known as Phomopsis canker (Photo 3) may attack and kill younger spruces and should not be confused with Cytospora canker (Photo 4).

MANAGEMENT OF CYTOSPORA CANKER:

Cytospora canker is a very difficult disease to manage. And because the disease causes cosmetic rather than life threatening concerns, some of the following suggestions may help minimize adverse appearance effects of the disease on specific trees in the landscape.

Cultural: Because it is believed that older trees in a stressed condition are most susceptible, it is wise to maintain good nutrition and vigor in susceptible trees. Interestingly, Colorado blue spruce in their natural Rocky Mountain habitat rarely contract Cytospora canker. Hence, a spruce's optimal natural inclination may be toward lower nutrition and moisture than often encountered in many well maintained landscapes. Certainly, avoid frequent irrigation and wetting of branches on spruce trees; fungal diseases require moisture to sporulate, spread and infect new plant tissue. Also, avoid wounding lower branches with lawn equipment and weed trimmers; wounds create sites where the fungus may invade particular branches. Proactive pruning may be beneficial; examine lower branches of spruce trees for the telltale signs of resinous cankers, and prune them out even if the branch has not died. Proactive pruning may break the disease cycle on specific trees. Pruning also improves the aesthetic appearance of affected trees.

Chemical Management: In general, it is believed that chemical fungicides have traditionally not been effective in managing Cytospora canker. Some recent studies performed by the author and others indicate that some trunk injection procedures may provide some relief from Cytospora canker for two years. Chemical treatments have proven to be highly effective for Phomopsis canker on smaller spruces.

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Development of Landscape Tips was sponsored by MSU and MGIA.

Photo 1: Typical symptoms of Cytospora canker on older spruces result in lower branch dieback.

Photo 2: Cytospora canker result in branch cankers as evidence by the bleeding of resin from the area on the branch invaded by the fungus.

Photo 3: Cytospora canker should not be confused with Phomopsis canker, which attacks smaller spruces.

Photo 4: On medium sized spruce trees, it may be difficult to discern Phomopsis canker from Cytospora canker (note branch dieback typical of both). In such cases, a lab test may be necessary.