CIS 946

Diplodia Tip Blight on Ponderosa Pine

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Diplodia tip blight (*Sphaeropsis sapinea*), a disease that has been present on ponderosa pine in Idaho for some time, hasn't usually caused serious damage. Diplodia has increased greatly during the past few years, particularly on trees growing on harsher sites or being stressed by other factors.

Identification

Diplodia kills pine shoots from the tips in. One of the first visible symptoms of Diplodia may be stunted, discolored needles on new spring growth. As the season progresses, the disease travels inward along the branch, often killing older needles all the way to the main stem (fig. 1). Several branches or whole portions of the crown may be affected.

Diplodia symptoms may be confused with the normal browning of 3-year-old needles or with injury caused by other diseases, insects, or a harsh winter. Three-year-old needles usually drop by winter. Needles killed by Diplodia often remain attached to the branch through the next spring.

To further distinguish Diplodia from other diseases or from insect damage, look for small, black fruiting bodies (pycnidia). They may form on infected twigs, at needle bases, or on cones, where they are often most visible (fig. 2). Diplodia spores spread from fruiting bodies and infect new shoots during moist weather throughout the spring and early summer.

Damage

Diplodia alone doesn't normally kill a tree. Diplodia usually weakens a tree, possibly making it more vulnerable to western pine beetles (*Dendroctonus brevicomis*), which feed in a weakened tree's cambium (the living tissue under the bark) and kill the tree by girdling it.

Normally, older trees are the most vulnerable to Diplodia. But young trees close to heavily infected trees may also be damaged.

Diplodia also infects other pines. Until recently, Diplodia was more of a problem for non-native pines, such as Austrian, Scotch, red, and mugo pines. Seedling and ornamental nurseries growing these trees may be vulnerable. There has been little research on the effects of Diplodia in natural stands of ponderosa pine.

Fig. 1. Diplodia starts in new shoots and often kills needles all the way to the main stem.

Fig. 2. Diplodia fruiting bodies (pycnidia) are often most visible on the face ("umbo") of cone scales.

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Control

Landscape trees

Trees often survive Diplodia if other pathogens or insects don't take advantage of the stress caused by the disease. Keep trees well watered and prevent further stress from construction damage or other factors. Pruning away diseased portions of the tree may improve the tree's appearance but does not appear to decrease the spread of Diplodia.

Fungicides have been used in other states to prevent Diplodia infection. However, in Idaho no fungicides are currently labeled for preventing Diplodia on pines. Where fungicides are available, they typically must be applied several times to the entire tree, just after bud break (unless they are systemic). Treating large trees could be expensive and difficult.

Forests, Christmas trees, and nurseries

The main method of managing Diplodia in forest stands is thinning to keep trees as stress free as possible. Thinning also strengthens their ability to withstand western pine beetle attacks. In pine nurseries and Christmas tree plantations, avoid shearing trees when Diplodia is active in adjacent stands and humidity is high; tree wounds may aid infection.

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