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Diplodia Shoot Blight of Pines

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Diplodia shoot blight, also known. as Diplodia tip blight or canker or Sphaeropsis blight, can be a particularly damaging disease of Austrian, ponderosa, and Scotch pines, as well as other pine and evergreen species.

The disease is caused by a fungus, *Sphaeropsis sapinea* (syn. Diplodia pinea). Extensive damage may occur on trees chronically stressed by being grown outside their natural range. Although pine trees of all ages are susceptible to the disease, damage is most severe in older trees. Severe damage seldom occurs in trees not yet bearing cones.

Numerous or repeated infection with Diplodia shoot blight can lead to stunting, deformed growth, and, eventually, death of the tree.

Symptoms

The most obvious symptoms of Diplodia shoot blight are discoloration and lack of needle elongation on stunted and/or curled new shoots. Although shoots throughout the tree may be affected, damage usually is noticed first near the bottom of the canopy. Entire new shoots can be killed rapidly, and infected tissues frequently are covered with resin. Appearance of resin drops on new, fresh shoots is an early indicator of infection.

Disease development and spread

Since it is a fungal disease, Diplodia shoot blight, is spread by spores. Cones are the site of extensive spore production and often are the primary overwintering site and source of initial infecting spores in the spring. The cones of Austrian, ponderosa, and Scotch pines can be infected only in their second year of development; this frequently plays a major role in disease development and spread.

The spore producers for Diplodia shoot blight may be evident as small black spots on cones, needles, shoots, and other infected tissues. Significant shoot blight problems often do not develop until the disease has built up on the cones.

Spores are dispersed by splashing rain from early spring until late in the season. Wet weather when shoots are emerging and elongating greatly enhances spore dispersal and infection. Unless trees are under stress, infection is largely confined to new shoot growth and second year cones. Older twigs and branches are damaged only if trees are stressed from lack of moisture.

Canker symptoms—evidenced by exuding resin, damaged bark, and discolored wood—often are associated with dead tops or randomly scattered dead branches. Such infections frequently occur as a result of mechanical wounds caused by hail or insects.

Control

Although control of Diplodia shoot blight is difficult, damage from the disease can be minimized.

Selecting trees with some level of resistance is important. Certain species, such as Austrian pine, are very susceptible, whereas others, such as Scotch pine, tend to be less susceptible.

Reducing stress is important in limiting damage. This involves supplying adequate water, particularly during droughts, and maintaining good fertility. Control insects to limit tree damage and entry wounds for the fungus.

Do not crowd newly planted trees. Give them adequate space for development.

Do not locate new plantings and nurseries near older trees which may be infected and serve as a source of spores.

Removing or pruning infected branches may improve the appearance of individual trees but may not significantly reduce disease spread.

Since new infections frequently are initiated from spores produced on cones, removal of cones can contribute to disease control, but it is tedious and may reduce the ornamental value of the tree.

Pruning and shearing of trees create entry wounds. Do not prune or shear when the fungus is active or when conditions are favorable for infection, especially during wet weather.

Infection of new shoots can be limited by applying fungicide early in the season when emerging new shoots are highly susceptible. This period typically begins in mid to late April when buds swell and open and continues for the next 4-6 weeks of shoot and needle growth. Bordeaux mixture (4-4-50) can be applied at 1-2 week intervals for a total of two to four sprays during this time period, with the first application at bud break.

For more information

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