

## Diplodia Tip Blight

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Diplodia tip blight, *Diplodia sapinea* (syn. *Diplodia pinea*), is a fungal disease that causes tip dieback of pine branches (Figure 1) and less frequently, other conifers. In the blight stage, the fungus can grow into the stems and main trunk where it becomes a canker disease. Weakened, injured, and stressed trees are more susceptible to infection.

Diplodia tip blight occurs in all areas of the United States north of Georgia. Most pines and spruces are susceptible, especially when planted outside their natural ranges. Austrian, ponderosa, mugo, red and Scots pine are most seriously affected.

**Figure 1: Symptoms on the canopy**



## Symptoms and Signs

The first obvious symptom is a yellowing then browning of young needles (Figure 2) in the spring, usually on the lower portions of the crown. Branch tips and buds are quickly killed and become soaked with resin. This resin may drip from needles and also

**Figure 2: New needles browning**



makes the dead tip somewhat flexible. These symptoms are mostly observed in the current season's growth.

Similar tip dieback symptoms on pines could also be caused by pine tip moth. To distinguish tip blight from tip moths, bend the dead tip; if it breaks and is hollow it is probably pine tip moth, if flexible it is probably tip blight.

In the late summer, fungal fruiting structures (pycnidia) form on dead needles. They appear as small black dots, first under the fascicle sheath, then up the needle (Figure 3). Similar small, black structures also develop on the scales of second-year cones (Figure 4).

**Figure 3: Pycnidia (fungal fruiting bodies) on the new needles**



**Figure 4: Pycnidia on cones**



Brown conidia (spores) are released from the mature fruiting bodies during wet weather to germinate on the needles.

## Management

Diplodia tip blight is most severe on trees that have been stressed by drought or other environmental factors. Proper tree care, including watering during periods of drought and maintaining fertility, increases tree vigor and reduces the likelihood of Diplodia tip blight infections. Mulch should be applied from the trunk out to the drip line at a depth of 2-4 inches. Avoid placing mulch directly against the trunk. Wood chips are one of the best mulch materials. Other materials that can be used include bark, pine needles, and leaf compost.

Trees should be irrigated during dry periods in the spring and summer. Avoid sprinklers, which wet the needles. Instead use a soaker hose, drip, or microsprinkler system. If the tree is nutrient deficient, proper fertilization will improve tree vitality and reduce susceptibility to disease as well.

Once the tree is infected, all of the above recommendations should be followed as well as pruning and applying fungicides. Pruning will not provide effective control of the disease, but dead tips may be pruned out to improve the appearance of the tree. It is best to prune during periods of dry weather to prevent disease spread. If pruning is the only management method used, cones should also be removed since they are a major source of inoculum. Pruning tools should be cleaned and disinfected between cuts to prevent further spread of the disease. Fungicide treatments should begin at bud break and be repeated two or three times at 14-day intervals.



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