

Forest Pest Bulletin



SOUTH DAKOTA
DEPARTMENT OF AGRICULTURE
DIVISION OF RESOURCE
CONSERVATION & FORESTRY



BULLETIN NUMBER 1

Revised: March 2018

DIPLODIA TIP BLIGHT

CAUSAL AGENT

Sphaeropsis sapinea

HOSTS

Over 20 pine species are susceptible, including Austrian pine (*Pinus nigra*), Scots pine (*Pinus sylvestris*), and Ponderosa pine (*Pinus ponderosa*).

Diplodia Tip Blight has spread from Europe to all parts of the world and now has global distribution.

SYMPTOMS

Ponderosa pine stands in the Black Hills are affected as well as Austrian and Ponderosa pines planted as windbreaks or as ornamentals across the state. Trees under 30 years old on the plains are usually not infected unless adjacent to or under infected trees. The most obvious symptom is the stunted, brown needles on dead tips in May and June (Fig. 1). Black fungal fruiting bodies (pycnidia) will often be present on infected needles under the papery sheaths (fascicles) and on the scales of second year cones on and under infected trees (Fig.2). Repeat infections may kill branches back to the main stem. Diplodia is an endophyte in healthy pines so almost all trees are infected but do not express symptoms until stressed.



Figure 1. Pine needles with tip blight. Minnesota Department of Natural Resources Archive, Minnesota Department of Natural Resources, Bugwood.org, www.forestryimages.org



Figure 2. Fruiting Bodies (pycnidia) on cone scales. Petr Kapitola, State Phytosanitary Administration, www.forestryimages.org

LIFE CYCLE

The fungal spores are dispersed from March through October mostly during rainy periods. Current-year shoots are susceptible to infection from bud-break in April through mid-June. The period following bud swell is when trees are the most susceptible. Second-year seed cones are susceptible when rapid elongation of the cones occurs, usually sometime in late May in South Dakota. Previously uninfected trees are apt to become infected on seed cones before new shoots. Incidence of shoot infection is greater on older trees, most likely because of the greater number of susceptible seed cones on these trees. Large amounts of inoculum (spores) can be produced on these seed cones and cause shoot infection.

MANAGEMENT

Applying fungicide to pines during the 2-week period of high susceptibility can significantly reduce infection of new shoots. This period begins with bud break in April. During this short period, Thiophanate-methyl, Propiconazole or Chlorothalonil should be applied just as the buds are opening and repeated just prior to needle emergence and again 10 days later. It is essential, when spraying, to obtain complete coverage of the new shoots and buds.

This protection of new shoots however does not prevent infection of seed cones. One or more additional fungicide applications would be required making it impractical. Pruning can help reduce the number of new infections and the aesthetics of the tree but is of limited value for controlling the disease. Pruning should be avoided during periods when conditions are highly favorable for infection because of danger of infection through wounds.

Due to numerous pesticide labels and/or label changes, be sure the product label includes the intended use prior to purchase or use. Please read and follow all pesticide label instructions and wear the protective equipment required. Spraying pesticides overhead increases the risk of exposure to the applicator and increases the likelihood of drift to non-target areas. Consider the use of a commercial applicator when spraying large trees due to the added risk of exposure and equipment needs. The mention of a specific product name does not constitute endorsement of that product by the South Dakota Department of Agriculture.

For further information contact your nearest South Dakota Division of Resource Conservation and Forestry office. Hot Springs 605-745-5820; Lead 605-584-2300; Mitchell 605-995-8189; Pierre 605-773-3623; Rapid City 605-394-2395; Sioux Falls 605-362-2830; Watertown 605-882-5367.

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