Managing Diplodia Blight

Follow these practices to limit stress and improve your tree's ability to fight disease:

Water when the soil is dry, but don't overwater. If it does not rain, apply 1 inch of water per week in clay soils, or 2 inches in sandy soils. Water only once or twice a week, soaking the soil well. Allow the soil to drain between waterings to allow oxygen back into the soil. Do not overwater. Automatic sprinklers that run daily or every other day can severely stress trees.

Mulch with woodchips to improve soil conditions for the roots. Maintain 2-4 inches of mulch around the tree in an area 6 feet or more in diameter. Do not pile mulch against the trunk. Fallen needles can be left as part of the mulch; they do not need to be removed.

Keep competitive weeds away, especially bromegrass.

Protect the roots from damage caused by digging, trenching, compaction and changes in soil grade. Keep in mind that some roots extend well beyond the crown of the tree.

Avoid planting new pines beneath old infected pines. The cones on mature pines produce enormous numbers of fungal spores, resulting in continual attacks on nearby young trees.

Use proper planting techniques. Dig a wide, shallow hole. The main roots should be level with the soil surface, not deep in the hole. Remove all twine, wire and burlap, and spread the roots out as much as possible.

In pine stands, maintain proper stocking levels to limit competition among trees.

Fungicide Treatments

Fungicide sprays applied in spring can help prevent infection of the new shoots. Generally, three sprays are required:

- ✓ At budbreak (around the third week of April)
- ✓ Just before needles emerge
- ✓ 7-14 days later

Use a fungicide with an effective active ingredient (see below). Because many other diseases are commonly called "tip blight," check that the label lists ***Diplodia*** or ***Sphaeropsis*** tip blight.

Fungicides Labeled for Diplodia Blight*

Active Ingredient:

- **Thiophanate-methyl**
  - *Cleary's 3336 (F, WP)*
  - *Ferti-lome Halt Systemic Fungicide*
  - *Topsin M*
  - *AllBan*
  - *Nufarm T-methyl*
- **Propiconazole**
  - *Banner MAXX*
  - *Lesco Spectator*
- **Copper Salts of Fatty & Rosin Acids**
  - *Camelot*
- **Bordeaux mixture**

*Trade names are examples of available products. No endorsement is implied. Always follow pesticide label instructions.

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Diplodia Blight (Tip Blight) of Pines

Diplodia blight is a common disease affecting pines throughout Nebraska. Trees in landscapes, windbreaks, plantations and native pine stands may sustain damage.

This brochure discusses Diplodia blight (also known as tip blight or Sphaeropsis blight) and provides suggestions for management and control.

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Susceptible Trees

Most pines are susceptible to Diplodia blight. Among common landscape pines, Austrian pine is the most severely affected. Extensive damage usually develops by 30-40 years of age.

Ponderosa pine commonly shows symptoms when under stress. Scotch pine is less often affected and eastern white pine is rarely damaged.

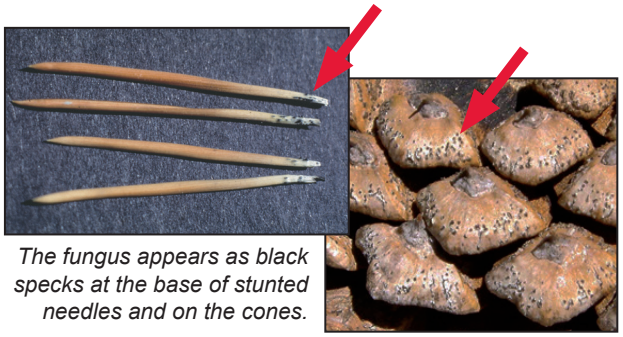
Spruce, fir and other conifers are rarely affected.

Symptoms

The most distinguishing characteristic of Diplodia blight is the presence of dead, stunted needles at the tips of branches (hence the common name, “tip blight”). The needles die in spring when the developing shoots are attacked and killed by the fungal pathogen.

Diagnostic symptom of Diplodia blight: dead, stunted shoots.

Another identifying characteristic is the presence of tiny black structures resembling pepper grains on the base of stunted needles and on the ends of cone scales. This is the reproductive stage of the Diplodia fungus. These structures release billions of spores that can initiate new infections.



The fungus appears as black specks at the base of stunted needles and on the cones.

Disease Development

Infection of shoots occurs during mild, rainy weather in spring. Shoot death occurs quickly, and the stunted dead needles often remain attached to the twig.

Over the years, multiple infections cause entire branches to die, often beginning low in the tree. Frequently these lower limbs are pruned off, but the disease continues to kill branches higher up, until only the top portion of the tree remains green.

Scattered branch death and top kill are also frequently observed in diseased trees.

Severe damage is generally seen in mature trees, although young trees planted below older pines may be affected. Trees with extensive damage may ultimately die.

***Above left**: Branch killed by Diplodia blight.*
***Above right**: Progressive loss of lower branches.*
***Below left**: Scattered branch death. **Below right**: Top kill.*

The Role of Stress

Stressful conditions such as drought and root damage play a big role in the development of Diplodia blight. Drought can trigger development of severe symptoms, which may continue for many years after the drought ends.

Activities that contribute to root damage include trenching, compacting the soil and planting trees too deep. Overwatering trees also damages roots.

Factors favoring Diplodia blight are listed below.

Conditions Favorable for Diplodia Blight

drought	compacted soil
overwatering	roots buried by soil
warm, dry winter	planted too deep
mild, rainy spring	root damage
hail damage	weed competition
wounding	overstocked stands

Pines that appear healthy may have latent (dormant) infections that may be triggered under certain conditions, resulting in rapid symptom development.

In particular, Diplodia blight often develops following hailstorms because the latent infections take advantage of hail-damaged branches. In such cases, some trees may recover with the loss of only a few branches, while trees more severely damaged may die.

Ponderosa pine stand damaged by Diplodia blight following a hailstorm.