

## 22. Sirococcus Shoot Blight

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### Hosts

This disease, caused by the fungus *Sirococcus strobilinus*, has been found on jack and red pines in the North Central States and on western hemlock and Jeffrey, Coulter, ponderosa, sugar, and lodgepole pines in the West.

### Distribution

*Sirococcus* shoot blight is found in the North Central and Western States (fig. 22-1).

### Damage

Losses occur in all age classes of nursery seedlings. Infected seedlings may be either killed or damaged to the extent that they must be culled.

### Diagnosis

On nursery-grown seedlings, look for a purplish, sunken canker, often with a small drop of resin in the center (fig. 22-2). The terminal shoots of infected seedlings often curl or bend over as a result of the canker developing on one side of the shoot (fig. 22-3). The infection usually goes unnoticed until the canker has caused the shoot to curl or to die.

Black fruiting bodies (pycnidia) develop in the cankered area and on infected needles (fig. 22-4). Conidia are hyaline, one septate, fusoid, and 13-15 x 2-2.5 microns.

### Biology

The disease causes a shoot die-back and stem and branch cankers on the current-year growth. The fungus overwinters in dead needles, shoots, and in the West, on spruce

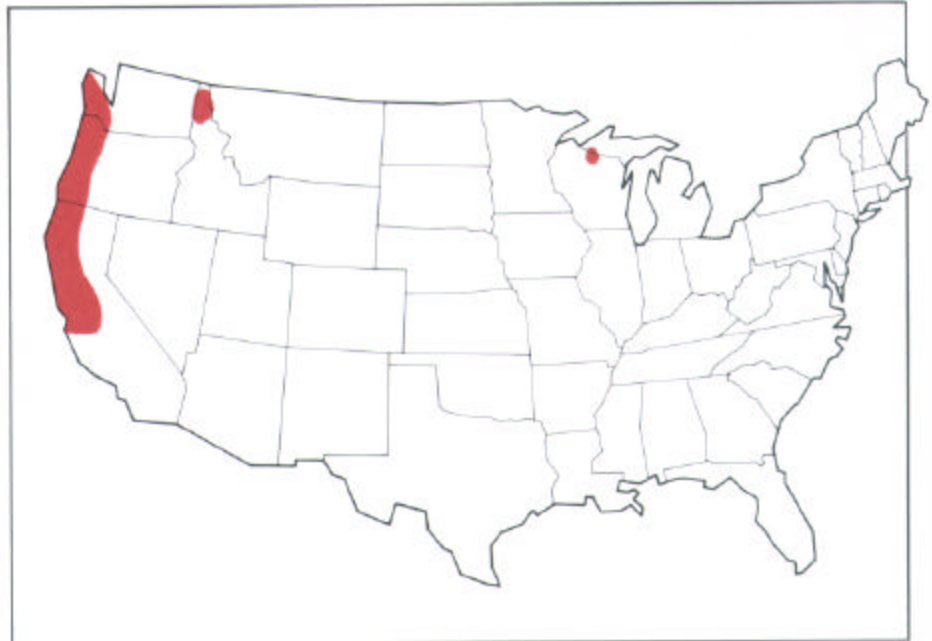


Figure 22-1—Distribution of *Sirococcus* shoot blight in nurseries.



Figure 22-2—Small purplish lesion (arrow) on shoot of Jeffrey pine caused by *S. strobilinus*.



Figure 22-3—Curled terminal shoot on infected Coulter pine.



**Figure 22-4**—Pycnidia of *S. strobilinus* on infected shoot of Jeffrey pine.



**Figure 22-5**—Jeffrey pine seedlings affected by *Sirococcus* shoot blight.

cones. Initial infection of seedlings usually occurs in the late spring or early summer, but the time may vary with location and local climatic conditions.

Spores produced in fruiting bodies on infected seedlings are spread short distances by splashing water. If environmental conditions remain favorable for infection, local spread of the disease will cause heavy losses in patches of the beds (fig. 22-5).

### Control

**Prevention**—If possible, avoid planting susceptible seedlings adjacent to nursery windbreaks or plantings that could serve as sources of inoculum. Do not transplant infected seedlings from another nursery.

**Chemical**—Chlorothalonil is an effective chemical control. Following label instructions, first spray seedlings when shoots and needles are emerging, and then spray at 3 to 4-week intervals until needles and shoots are fully developed. Spray more often during prolonged rainy periods and when shoots are rapidly elongating. The timing of sprays will vary, depending upon the geographic location, but the fungicide should be applied just before and during the peak periods of spore dispersal and infection.

### Selected References

- Nicholls, Thomas H.; Robbins, Kathryn. 1984. *Sirococcus* shoot blight. For. Insect & Dis. Leaflet 166. Washington, DC: U.S. Department of Agriculture, Forest Service. 6 p.
- Smith, R.S., Jr. 1973. *Sirococcus* tip dieback of *Pinus* spp. in California. Plant Disease Reporter. 57: 69-73.
- Smith, R.S., Jr.; McCain, A.H.; Srago, M.; Krohn, R.F.; Perry, D. 1972. Control of *Sirococcus* tip blight of Jeffrey pine seedlings. Plant Disease Reporter. 56: 241-242.