

Cercospora Blight of Junipers

Serious disease in shelterbelts

Pathogen—Cercospora blight of junipers is caused by the fungus *Pseudo-cercospora juniperi* (*Cercospora sequoiae* var. *juniperi*).

Hosts—Many members of the Cupressaceae family are, but Rocky Mountain juniper and eastern redcedar are the most severely impacted in the Great Plains.

Signs and Symptoms—Foliage of the inner branches of the lower crown becomes bronzed, then necrotic, and eventually sheds, leaving the inner crown devoid of foliage (fig. 1). The extremities remain green. Small, gray, fuzzy asexual fruiting bodies (sporodochia) may be visible with a hand lens on dead needles (fig. 2). Defoliation progresses from the lower portion of inner crown outward and upward.

Disease Cycle—Sporodochia are produced on infected foliage in September. Sporulation occurs continuously from April to October during periods of warm, wet weather. Conidiospores disperse short distances (<6 ft [1.8 m]) by means of rain splash. Free moisture is required for sporulation and infection. Infection occurs through stomata or directly through the cuticle. Infection is initiated on current and previous years' juvenile needles (sharply pointed young needles) and previous years' spur leaves (scale-like mature leaves) of the inner crown and eventually spreads to the entire branchlet. Whip foliage (elongated shoot tips) appears to be resistant. Infection usually occurs in June and July, and symptoms develop about 2-3 weeks after infection. The fungus overwinters in infected needles on living trees. The sexual state of *P. juniperi* is not known.

Impact—Cercospora needle blight can cause devastation and mortality to juniper in shelterbelts and other established plantings, particularly with repeated years of infection. Impacts are more severe on Rocky Mountain juniper than on eastern redcedar and in areas or years with significant moisture and humidity.

Management—Several management strategies may be used to control Cercospora needle blight:

Do not plant Rocky Mountain juniper and eastern redcedar in areas where the disease is a problem.

Maintain wide spacing between trees to promote air circulation and reduce humidity.

Protective fungicides labeled for Cercospora control (e.g., Mancozeb and Bordeaux mixture) can be used to protect susceptible trees. Two applications are usually necessary, depending on the type of foliage present (juvenile, spur, or both).



Figure 1. Inner branches of the lower crown of Rocky Mountain junipers infected with Cercospora needle blight are defoliated while the extremities remain green. Photo: Ned Tisserat, Colorado State University.

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Figure 2. Small, gray, fuzzy fruiting bodies of *Cercospora* on infected leaves may be visible with a hand lens. *Photo: Ned Tisserat, Colorado State University.*

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1. Sinclair, W.A.; Lyon, H.H.; Johnson, W.T. 1987. Diseases of trees and shrubs. Ithaca, NY: Cornell University Press. 574 p.
 2. Tisserat, N.A. 2001. Juniper Diseases. Pub. No. C-711. Kansas State University Research and Extension. 12 p.