

33. Marssonina Blight

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Hosts

Marssonina blight, caused by the fungi *Marssonina brunnea*, *M. populi*, and *M. castagnei*, affects all species of aspen and poplars native to North America. The pathogens can also damage many introduced poplar species and hybrids. Possible hybridization or mutation in the genus *Marssonina* has resulted in host-specific forms of the fungi.

Distribution

Species of *Marssonina* are found throughout their hosts' known range. International transport of poplar cuttings may have contributed to the spread of the pathogens.

Damage

The blight can cause premature defoliation, resulting in significant growth reduction and, on occasion, mortality. Damage can be especially severe where poplar species and clones are selected without regard to their susceptibility to the disease.

Diagnosis

Leaf symptoms vary, depending upon the susceptibility of the poplar species or hybrid, the species of *Marssonina*, and the severity of infection.

Look for small, brownish, circular to angular spots, 1 to 2 mm across. These spots develop on the surface of leaves in spring and early summer (fig. 33-1). The center of the spot usually appears whitish. Spots may eventually join to form large, angular, rust-brown to black necrotic blotches (fig. 33-2).



Figure 33-1—Typical leaf spots caused by *Marssonina brunnea* on a poplar leaf.

In addition to leaf spots, lesions may develop on petioles and succulent new stem growth. These lesions can enlarge longitudinally and may become several millimeters in length (fig. 33-3).

Whitish masses of conidia are produced from acervuli and are often visible in the center of the lesions. Conidia of *Marssonina* are oval, hyaline, and divided by one septum into a small basal cell and a larger upper cell (fig. 33-4). They often have one or more prominent vacuoles in each cell. Size of conidia varies with species: 11-21 x 4-7 microns for *M. brunnea*, 15-23 x 5-8 microns for *M. castagnei*,

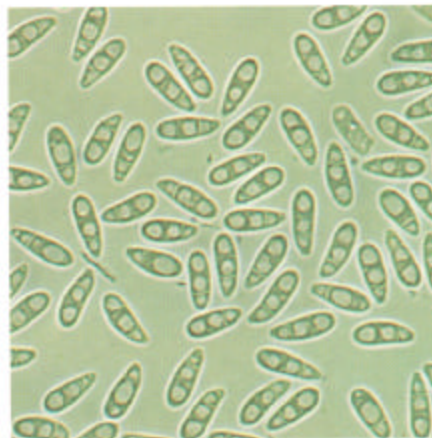


Figure 33-4—Conidia of *Marssonina brunnea*.



Figure 33-2—*Marssonina castagnei* on poplar leaves.



Figure 33-3—Lesions caused by *Marssonina brunnea* on petioles.

and 17-27 x 8-13 microns for *M. populi*. The perfect states of these fungi belong to the genus *Drepanopeziza* but are rarely seen.

Biology

Marssonina overwinters in lesions on infected stems and on fallen leaves.

In the spring during wet weather, the fungus releases ascospores and possibly conidia, which were produced on fallen leaves or on lesions produced during the previous growing season. The spores are carried by wind and rain splash. Leaves, petioles, and succulent stems of susceptible seedlings become infected, resulting in leaf spots and shoot lesions.

During the summer, conidia produced on these lesions are exuded in masses and disseminated by rain splash and wind to adjacent leaves and stems.

Control

Prevention—Several poplar hybrids have been identified as being resistant or tolerant to Marssonina. Where possible, these clones should be used for planting.

Cultural—Examine nursery stock for Marssonina infection. Cull infected hardwood cuttings to avoid spreading the fungus on planting stock. Remove and destroy or plow under diseased plant debris. Reduce planting density to improve air movement. When possible, avoid overhead irrigation systems.

Chemical—No chemicals are registered to control this disease on poplars in nurseries.

Selected References

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