

Shot-hole Disease of Flowering Cherry

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Shot-hole disease pathogens cause some of the most common and damaging issues for ornamental flowering cherries. While the disease can be caused by numerous plant pathogens including fungi and bacteria, the fungus *Blumeriella jaapii* is the most common causal agent on flowering cherries. This disease can reduce the value of *Prunus* species in the landscape by diminishing appearance, flower set, fruit production, and fall color.

Symptoms

At full leaf expansion, small, purplish-brown to reddish-brown leaf spots no larger than the end of a pencil eraser begin to appear randomly scattered on the leaves (Figure 1). Lesions can coalesce and result in larger patches of dead leaf tissue. As the lesions become necrotic (dead), the dead spots will fall out, resulting in a “shot-hole” appearance—as if someone had peppered the plant with a shotgun blast (Figure 2). During summer, infected leaves become chlorotic (yellow) and drop prematurely, often leaving the tree completely defoliated before fall in extremely wet years. Early defoliation impacts desired appearance and reduces flowering. Successive years of infection can reduce overall vitality of the plant leading to other problems such as borer attacks, winter injury, and sunscald of the trunk.

Figure 1: Purplish-brown leaf spots caused by *Blumeriella jaapii* on Yoshino cherry (*Prunus × yedoensis*)



Figure 2: Shot-hole symptom on cherry with fungal leaf spot



Life Cycle

Infection by other fungi (e.g., *Cercospora* spp. [1] and *Thyrostroma carophilum* [2]) and bacteria (e.g., *Xanthomonas arboricola* pv. *pruni* and *Pseudomonas syringae* [3]) can result in similar shot-hole symptoms on other *Prunus* species (e.g. cherry laurels and plums). *Blumeriella jaapii* overwinters in defoliated leaves from the previous year’s infection. Spores are formed in the leaf litter in the early spring and will splash onto newly emerging leaves as they open [4]. Infections typically begin in the early spring at bud break, and can continue to occur through summer during humid and mild temperatures between 68 and 83°F (20-28°C) [3]. Infected leaves also produce spores on the underside of the leaves during the

growing season, which disperse by wind-driven rain and result in secondary infections.

Management

The most effective management tactic is planting disease-tolerant flowering cherry cultivars, such as *Prunus serrulata* 'Kwanzan' and *P. subhirtella* 'Autumnalis' [5]. Cherry trees should be planted in full sun and pruned to reduce canopy density every 3-5 years, or when needed. This will increase light and air penetration, which will reduce leaf wetness and likelihood of infections. Defoliated leaves should be raked and removed in the winter to reduce the concentration of overwintering inoculum (spores). Lastly, properly timed application of disease management products can prevent infections from occurring [5], resulting in better flowering and a healthy canopy throughout the growing season (Figure 3). Contact your Bartlett Tree Experts Arborist Representative to discuss management strategies for your flowering cherry tree.

Figure 3: Yoshino cherries with shot-hole disease. Non-treated (left) and fungicide-treated (right) in late summer



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References

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