RESEARCH LABORATORY TECHNICAL REPORT

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Dogwood Anthracnose

By The Bartlett Lab Staff

Anthracnose caused by the fungus *Discula destructiva* is a potentially fatal disease of dogwood. All varieties of the native flowering dogwood (*Cornus florida* and *C. nuttallii*) are susceptible. The disease usually starts on lower leaves and progresses into twigs and branches. Infected trees are severely weakened so that secondary canker and root rot diseases can infect and kill the tree. *Discula* infection usually occurs during cool, rainy periods in the spring. The fungal spores are spread by rain and wind.

Symptoms

Often, the first symptoms of *Discula destructiva* anthracnose are spots on the lower leaves and flower bracts. Spots are tan to brown and may have purple rings around them (Figure 1). This symptom is similar to small spots caused by the fungus *Elsinoe corni*. If the infection is caused by *Discula*, leaf tissue will also be killed along the veins or the entire leaf will be killed. Those leaves which succumb to infection during the summer will stay on the plant after normal leaf. The infection will also spread from the leaves to the twigs resulting in cankers and twig dieback. The resulting canker can girdle and kill the branch. Epicormic branches (water sprouts) are more susceptible to the fungus.

Figure 1: Symptoms of dogwood with Discula anthracnose

The speed at which the disease progresses in the tree depends on weather, tree health, and treatment. With weather favorable to the disease and no treatments, most infected trees are killed within 3 to 6 years.

Management

Healthy dogwoods are able to withstand disease infection much better than stressed trees. To keep trees vigorous they should be mulched, watered, fertilized, and pruned. Mulch should be applied from the trunk out to the dripline at a depth of 2-4 inches. Avoid mulching directly against the trunk. Wood chips are one of the best mulch materials. Other mulch materials include bark, pine needles, and leaf compost. Mulching will also help prevent wounds from lawn mowers and string trimmers on the lower trunk. These wounds increase susceptibility to the dogwood borer.

Trees should be irrigated during dry periods in the spring and summer although overhead irrigation should be avoided. Instead, use a soaker hose, drip or microsprinkler system. Complete fertilizers containing high levels of nitrogen improve tree vitality and reduce disease.

Pruning out highly susceptible epicormic branches will reduce cankers on major stems and branches.

Overstory trees may also need to be pruned or thinned to improve drying conditions for the dogwood.

Once a tree is infected, all of the above recommendations should be followed as well as the additional treatments of sanitation, pruning, and fungicide treatments. Branches or twigs which are cankered or have leaves attached, should be pruned back to a healthy branch. This sanitation pruning should be done in the winter. The infected wood and leaves should promptly be removed from the property to reduce inoculum potential.

Fungicide treatments will reduce new infections but will not stop existing disease. Treatments should be applied three to four times at 14-day intervals starting at budbreak. Additional treatments may be required at monthly intervals during the summer if wet weather persists.

Table 1: Dogwood cultivar resistance to anthracnose and powdery mildew

Variety	Anthracnose Resistant	Powdery Mildew Resistant
'Steeple'	Resistant	Moderate
'Stardust'	Moderate	Susceptible
'Stellar Pink'	Moderate	Susceptible
'Milky Way'	Moderate	High
'Milky Way Select'	Moderate	High
'Celestial'	Moderate	High
'Gay Head'	Moderate	High
'Constellation'	Moderate	High
'Julian'	Moderate	High
'Temple Jewel'	Moderate	High
'Ruth Ellen'	Slight	High
'China Girl'	Slight	High
'Big Apple'	Slight	Susceptible
'Greensleeves'	Slight	Susceptible
'Cloud Nine'	None	Susceptible
'Autumn Rose'	Susceptible	Resistant

When planting new dogwoods in areas with anthracnose, avoid planting in dense shade. Dogwoods ideally should be planted to receive full morning sun and afternoon shade. In full sun, dogwoods are more susceptible to dogwood borer. This pest should be monitored visually and with pheromone traps when needed, and treated before it infects the tree. The summer-flowering Korean dogwood (*Cornus kousa*) is resistant to the disease and may be substituted in many cases. Table 1 provides information regarding dogwood cultivars' resistance to anthracnose and powdery mildew.