

Powdery Mildew of Dogwood ***Identification, Biology and Management***

There are two fungal organisms, *Microsphaera pulchra* and *Phyllactinia guttata*, which cause Powdery Mildew of Dogwoods. This disease has now become quite common in the landscape and in nature. These fungi are obligate parasites, meaning that they survive only on living plant tissue, so they do not rapidly kill plant tissue following infection. Unless there are other stress factors involved, this disease is not lethal. However, powdery mildew can cause significant aesthetic damage, and has been found to reduce winter hardiness. Powdery Mildew fungi prefer warm, humid weather, but unlike most fungal pathogens, are inhibited by free water on leaf surfaces. Symptoms are typically noticed in late-spring through autumn.

SYMPTOMS: The name of this disease adequately describes the primary symptom. Usually white or gray fungal colonies on the upper and lower surfaces of newly expanded leaves are easily noticed when conditions are conducive to development. Depending on conditions, these fungal colonies can easily be seen without a hand lens, or in some cases magnification must be used to see early infections. Often, this symptom is followed by curling and stunting of the youngest leaves. Red or purple discoloration of the mature foliage can sometimes be seen, and scorching of the leaves is quite common as well.



DISEASE CYCLE: The fungi causing this disease belong to the group known as the Ascomycetes. These fungi overwinter in debris as resistant structures called cleistothecia, and give rise to spores in the spring when conditions become favorable. These spores are the source of initial infection of the plants each season. The fungus then produces a different type of spore that re-infects throughout the summer. These spores are carried by the wind and rain to infect healthy leaves.

MANAGEMENT: Management of powdery mildew is achieved by a combination of many control tactics. Removal and destruction of infected leaf litter from the area will reduce the amount of inoculum available for primary infection the next season. Pruning of the overstory to promote light and air penetration will help to reduce the humidity near the leaf surface and discourage fungal growth. Light fertilization in the dormant season will reduce the amount of succulent, susceptible growth during the growing season. Perhaps the most important means of management is the use of resistant cultivars when planting. Several resistant cultivars of *Cornus florida* are now available, and *Cornus kousa*, including cultivated varieties, displays resistance. There are also *C. florida* x *kousa* hybrids that show moderate to high resistance. Even with the above practices, regular fungicide applications may also be necessary beginning when symptoms first appear.