

Powdery Mildew

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Powdery mildew is a foliage disease, which occurs on nearly all species of ornamental plants. Rose, dogwood, crape myrtle, lilac, sycamore, catalpa and crabapple are among the species most commonly affected. Although it seldom causes permanent damage, this disease can cause premature defoliation, growth reduction, and generally render the host aesthetically unpleasing. Powdery mildew may occur at any time during the growing season; however, it is usually most severe in the late summer months. Unlike most foliage diseases, powdery mildew is inhibited by extremely wet weather during which free water occurs on the plant surface. Warm, humid weather, characteristic of late summer, is generally best for disease development.

Symptoms

Foliage, stems, and flowers become covered with a white-to-gray powdery growth (Figures 1 and 2). Stunting and distortion of developing leaves and stems usually accompanies these symptoms. Leaves eventually become chlorotic and fall, and succulent terminals may die back.

Causal Agents

Approximately six genera of fungi cause powdery mildew on specific ornamentals. The fungi overwinter as vegetative growth or mycelium in the bud or as spores in resistant structures called chasmothecia on fallen leaves (Figures 3 and 4). Initial infections occur directly from the overwintering mycelium or windblown spores originating from the resistant structures. Under favorable climatic conditions, the fungus develops on the surface of host tissue producing a mat of white mycelium. It obtains its nutrients by producing specialized peg-like projections called “haustoria” which puncture host

Figure 1: Symptoms on sycamore



cells and absorb the contents. Spores produced on the mycelium impart the powdery appearance to infected plant parts and are responsible for secondary infections.

Figure 2: Symptoms on ninebark



Figure 3: Chasmothecia on elm



Figure 4: Close up of a chasmothecia containing oval shaped spores



Control

The incidence and severity of powdery mildew can be reduced through various cultural practices. Extremely susceptible species should be planted in at least partial sun and pruned periodically to allow proper light and air penetration. Fertilization in the dormant season will prevent excessive late-summer growth, which is most susceptible to damage by powdery mildew. Good sanitation practices through which infected leaves are gathered and destroyed in the autumn will reduce the amount of inoculum available the following year.

Fungicide treatments will effectively control powdery mildew if applied regularly beginning when infection first occurs.



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