



This bulletin from the Cooperative Extension Plant Health Clinic (Plant Disease Clinic) is an electronic update about diseases and other problems observed in our lab each month. Input from everybody interested in plants is welcome and appreciated.

Hellebore

There are fifteen species of Hellebores commonly known as Lenten Rose. Most of the genus has shiny evergreen leaves, forming attractive clumps 9-18 inches tall and 24 inches wide. Hellebores have the added attraction of being extremely deer-resistant. They are among the first perennials to bloom, starting in February in many locations and continuing until spring. The lovely flowers are in shades of purple, pink, and white. Hellebores require partial shade, good drainage, adequate moisture, and thrive best in nearly neutral soils. Plants are prone some years to a fungal infection caused by *Coniothyrium hellebore*. Symptoms are large, irregular black spots on of leaves, stems, blooms, and flower stalks. Leaf lesions often run together causing yellowing and premature leaf death. Infected stems may shrivel and collapse. Sanitation is the best defense. Damaged leaves should be removed from the plant immediately and destroyed.

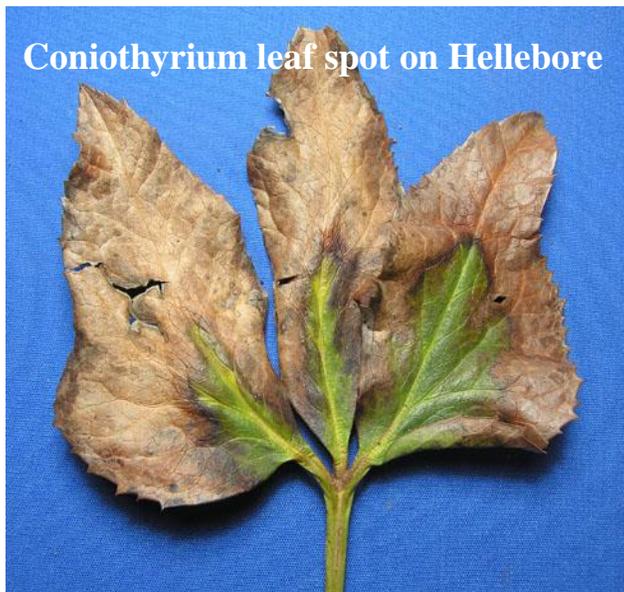


www.avidgardeners.org

Spruce

It is nearly time to spray spruces for needle cast disease caused by *Rhizosphaera kalkhoffii*. This is the most common problem of blue spruce in the landscape. The disease usually starts at the bottom (inside near the trunk) of the tree and progresses outward and upward. The needles will take on a brown or purplish color and then fall to the ground. The first visible signs of infection occur one year after infection in the late fall or spring. Last year's needles turn yellow, then purplish brown and fall from the tree, while the new needles remain green. These new green needles become infected the spring they emerge, and fall to the ground the following season. Small black fruiting bodies (pycnidia) of the fungus may be observed with a hand lens. They appear on the needles in linear rows. Watch your trees for new growth, (candles), emerging at the tips of branches. Protective sprays applied when new needles are half-emerged from the candles provide satisfactory control. Products containing chlorothalonil such as Bravo or Daconil, and manganese/zinc such as Cleary's Protect T/O are labeled for control of *Rhizosphaera* needle cast. Follow label directions for rate and frequency of application. Blue spruces grow best in fertile, well drained, moist soil. They dislike compacted soils. When stressed by drought or poor soil they are prone to needle cast.

Coniothyrium leaf spot on Hellebore



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Rhizosphaera needle cast

Minnesota Department of Natural Resources Archive, Minnesota
Department of Natural Resources, Bugwood.org

Rhizosphaera needle cast



Joseph O'Brien, USDA Forest Service, Bugwood.org



Rhizosphaera

This year's
infected needles

Last year's
infected needles

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Smoke Tree

Smoke tree, *Cotinus coggygria*, also known as Smoke bush, is a very popular shrubby tree grown for its decorative "smoky" blooms and colorful foliage. The best known varieties have lovely purple foliage, but gold and green leafed varieties are also available. They reach a height of 15' X 15', but can be cut back every year to keep them smaller. Cutting them back eliminates the smoke-like blooms, but provides richly colored new foliage. They prefer full sun, but tolerate half a day of shade. Smoke trees are very tolerant of drought once



established and do well on poor soils. On rich soils they are very susceptible to verticillium wilt. Verticillium wilt is a soil-borne vascular wilt disease of over 130 different species of plants. The disease infects through the roots and gradually becomes systemic in the tree. Symptoms are wilting, interveinal browning, premature leaf drop, dead and dying branches, reduced twig growth, and plant death. When affected branches are split open discolored streaks are commonly seen running parallel to the grain of the wood. In cross-section, the discoloration appears as partial to complete rings in one or more growth rings. The color of the streaking varies species to species. In Smoke tree it is olive green to grayish green. There is no cure for affected plants. Sometimes the prompt application of an ammonium nitrate fertilizer helps prolong the tree's life. Do not re-plant a susceptible species in that location. Susceptible tree species are Maple, Horse chestnut, Tree of Heaven, Catalpa, Ash, English walnut, Goldenrain tree, Redbud, Judas tree, Smoke tree, Quince, Persimmon, Liriodendron, Black locust, American elm, English elm, Slippery elm, and Sassafras.

Smoke tree in bloom



The Dow Gardens Archive, Dow Gardens, Bugwood.org



Verticillium wilt "streaking"

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Purple leaf Smoke tree



The Dow Gardens Archive, Dow Gardens, Bugwood.org

Azalea

Infections by *Cercospora handelii* usually begin in the spring although symptoms may not appear until fall or in the following spring on one year old leaves. At least two months pass between infection and the appearance of the lesions. Symptoms are brown circular to irregular spots on the lower leaves. Centers of the spots become gray with age. Tiny black fruiting bodies may be seen in the center of the spots with a hand lens. Although severe

infections can cause leaf drop late in the season, fungicides are usually not necessary. Rake and destroy fallen leaves. Avoid overhead irrigation. If chemical control is desired, apply thiophanate methyl, chlorothalonil, myclobutanil, or mancozeb to protect leaves before infection in the spring.



Azalea Cercospora leaf spot



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