

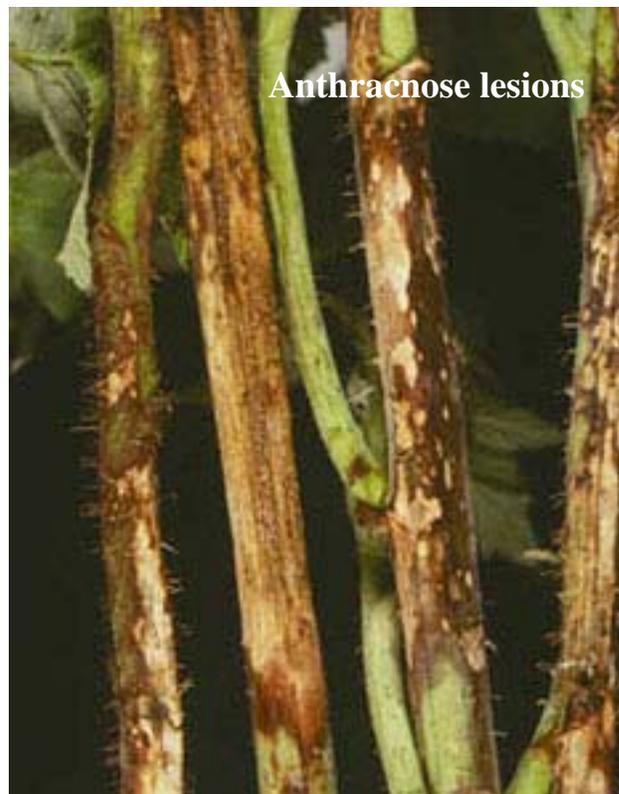


This bulletin from the Cooperative Extension Plant Health Clinic (Plant Disease Clinic) is an electronic update about diseases and other problems observed in our lab each month. Input from everybody interested in plants is welcome and appreciated.

Blackberry

Anthrachnose caused by *Elsinoe veneta* is the most common blackberry disease seen by the clinic. Symptoms are most conspicuous on the canes, but can occur on leaves, petioles, flower buds, and fruit. Circular to elliptical reddish purple spots appear on primocanes in late spring. The spots enlarge with the centers becoming sunken and ashy gray with purple margins. Lesions may colasce causing large irregular blotches. If the lesions girdle the stem the cane dies above the girdled area. Tip dieback is also common. Seriously infected canes sometimes do not survive the winter. The first symptoms on the leaves are minute purple spots which eventually get white centers. The diseased spots may dry and drop out giving a shot hole appearance. Infected fruit has abnormally small drupelets that are pitted and slow to ripen. One of the most effective controls is removal of all old fruiting canes and infected primocanes. This gets rid of a significant amount of overwintering inoculum. Overhead irrigation of blackberries should be avoided whenever possible. Thinning to improve air circulation and good weed control are also recommended. The use of lime sulfur during the dormant period and fungicides such as captan during the growing season gives good control in conjunction with good cultural practices.

Rust is starting to appear on blackberry leaves and canes. There are several types of rust found on blackberries, some minor and some serious. Orange rust can be a serious problem. It is systemic rust that can cause significant fruit reduction. Symptoms appear as soon as new growth comes on in the spring. Young shoots are spindly and clustered with misshapen, chlorotic, stunted leaves. Approximately 3 weeks later the leaves become covered with bright orange colored rust pustules. Once infected, the plant is infected for life. Canes produced after infections don't produce fruit. Rouging infected plants from within the planting and destroying nearby wild blackberries are the most effective methods of control.



<http://plant-disease.ippc.orst.edudisease.cfmRecordID=941>

Good weed control and good air circulation also help reduce the number of new infections. Fungicides don't give adequate disease control but may reduce the number of new infections. Nova, Cabrio, and Pristine should be applied in the spring when the bright orange aeciospores are being produced and again in the fall as temperatures start to drop and teliospores infection becomes a threat.

Cane and leaf rust can cause defoliation and some fruit reduction in severe cases, but is not systemic rust. It's usually only a minor problem. Symptoms are first seen in the spring on new floricanes. Large yellow uredia split the bark on infected canes, followed by small yellow uredia on undersides of leaves. Infected canes should be removed and protective fungicides applied. Nova, Pristine, and Cabrio are effective. Several other blackberry rusts causes leaf, petiole, and stem symptoms. The same controls should be used as for cane and leaf rust.



Orange rust



Steve Vann University of Arkansas Cooperative Extension

Yellow rust



Sherrie Smith University of Arkansas Cooperative Extension

Blackberry rust



Sherrie Smith University of Arkansas Cooperative Extension

Corn

Phosphorous deficiency on young corn plants causes dark green plants with reddish purple leaf tips, margins, and stems. Such plants are smaller and grow slower than plants with adequate phosphorous. The purple color almost always disappears when plants reach 3 feet or taller, but the plant will remain shorter than plants with necessary amounts of phosphorous. The issue is confused by the fact that some corn hybrids have some natural purple coloring and some varieties don't show the diagnostic symptoms for P deficiency even when severely deficient in phosphorous. Symptoms are favored by cold, too wet, or too dry soils. Root injury by insects, cultivation, or herbicides causes similar symptoms. Herbicide injury such as by Newpath also causes bottle brush symptoms on the roots.

Phosphorous deficiency on corn



Sherrie Smith University of Arkansas Cooperative Extension



Pine

Eastern pine gall rust is caused by the fungus *Cronartium quercuum*. Hard pines are more susceptible than soft pines. Jack, Scotch, Austrian, Pitch, Loblolly and Shortleaf are susceptible. Mugho pines, often planted in the home landscape, can also become infected. Infection results in the formation of spherical galls, which eventually surround the stem. The galls disrupt the sap flow, often girdling and killing the part of the tree above it. Trees are greatly weakened and subject to wind damage, with young saplings often killed outright. This gall rust is very similar to Western pine gall rust except that Western pine gall rust does not need the alternate oak host. Red and black oaks are the most important alternate hosts for Eastern pine gall rust. Infection on oak leaves causes small necrotic or chlorotic areas. On the underside of the leaves, hair-like telial structures may be visible. All spores, which infect both pine and oak, are primarily windborne. High humidity during spore dissemination increases the incidence of infection. Treatment consists of pruning out the galls and destroying them. Chemicals are not usually very effective.



Hair-like telial structures of rust on red oak.
Courtesy George Philley, TAES - 1995.

Pieris

Pieris japonica is a member of the same family as rhododendrons and azaleas. This is a delightful evergreen shrub that is available in many cultivars. The lily of the valley type blooms range from white through the pink shades with both green and variegated foliage. New foliage is often a red or bronze. Growth is slow to 10 feet, but there are some small compact varieties available that only reach several feet. Pieris prefers uniformly moist, acid soil rich with peat and other organic material. Good drainage is important. Place it in dappled shade, and make sure it is protected from drying winds and direct sunlight. Tip dieback caused by both drying winter winds and anthracnose is sometimes seen on Pieris samples. Reddish purple lesions can start anywhere on the stem, particularly where there had been an injury. Tip dieback and stem death occur when the stem is completely girdled by the lesion. All injured or diseased stems should be cut out well below the damage and disposed of. An ornamental fungicide such as Daconil or rose spray gives good protection.

Leucothe is a very attractive plant for dappled shade that has the same cultural requirements as Pieris. It attains a height of 3-6 ft. and a spread of 3-5 ft. Flowers on Leucothe are very similar looking to those of Pieris. Sometimes the two plants are confused. Leucothe has the same problems with tip dieback as Pieris.



Eastern pine gall

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Extension



Leucothoe anthracnose lesions



Sherrie Smith University of Arkansas Cooperative Extension

Pieris japonica



The Dow Gardens Archives, Dow Gardens,
www.forestryimages.org