



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.

Arborvitae

Deer are certainly plentiful in Arkansas and are often a nuisance in landscapes even in town. During the summer months you wouldn't commonly find deer browsing on arborvitae, but during the winter when other green foods are scarce, they can do a lot of damage in a night or two of browsing. If you don't catch them in the act, a homeowner may be considerably bewildered at finding their arborvitae sporting strange haircuts.

Arborvitae Deer Damage- Abiotic



Photo courtesy of Ashley Totten

Arborvitae Deer Damage- Abiotic



Photo courtesy of Ashley Totten

Plum/Cherry

With the leaves still off most fruit trees, homeowners are noticing black galls on their plums and cherries. Black knot caused by the fungus *Apiosporina morbosa* (*Dibotryon morbosum*) attacks stone fruits including plums, prunes, sweet cherries, and sour cherries. We rarely find it on peach. Black woody galls appear on the stems and branches. Badly infected trees may suffer extensive dieback of girdled limbs and stunting of growth beyond the knots. This can cause major yield loss. The knots begin as small, light brown swellings, generally located at the base of the leaf petiole or on the fruit spur. These appear during the summer and first year after infection. Young knots have an olive-green color, but later become hard, brittle and black in color. The knots are often asymmetrical, protruding more on one side of the affected branch than the other. Control starts with good sanitation. All visible knots should be pruned out before new growth starts in the spring. Pruning cuts should be made at least 6-8 inches below the lowest part of the knot. Knots on large main branches and trunks may be cut out with a knife or chisel, including an inch of healthy bark around the knot. Avoid the purchase of plants showing knots or abnormal swellings on the twigs and branches. Burn, bury, or otherwise remove all



clippings from the property. Mancozeb, Captan, Topsin M, or fungicides containing chlorothalonil are helpful in controlling Black Knot if the cultural controls are also practiced. Apply first spray in the spring just as green tissue begins to appear. Spray again just before and after bloom. Spray at 2-week intervals until new growth stops. Lime-sulfur sprayed during the dormant season is also helpful. Wild cherries and plums within 600 feet of the orchard should be removed if possible to prevent spores blowing into the orchard and causing new infections. Some Plum cultivars are resistant to Black knot. The cultivars Stanley, Damson, Bluefree, and Shropshire are considered highly susceptible; Fellenburg, Methley, Milton, Bradshaw, and Early Italian are moderately susceptible; Formosa, Shiro, and Santa Rose are slightly susceptible; and President is considered highly resistant. In general, Japanese varieties are less susceptible than most American varieties.

Black knot of Plum- *Apiosporina morbosa*



Keri Welch University of Arkansas Cooperative Extension

Black knot of Plum- *Apiosporina morbosa*



Steve Kelly University of Arkansas Cooperative Extension

Blue spruce

The Clinic has already received samples of blue spruce suffering from needle cast. This is a heads up to remind growers with this problem that it is nearly time to spray their spruces for needle cast disease caused by *Rhizosphaera kalkhoffii*. Protective sprays applied when new needles are half-emerged from the candles provide satisfactory control. Needle cast 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. 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.

Blue spruce needle cast- *Rhizosphaera kalkhoffii*



Sherrie Smith University of Arkansas Cooperative Extension

Zoysia

One of the most important diseases of turf is Large Patch, caused by the fungus *Rhizoctonia solani*. Zoysia, Bermuda, St. Augustine, and Centipede are all susceptible. Stolons and basal leaf sheaths develop water soaked black to reddish brown lesions. Irregular circular patches develop that may be from several feet to more than 25 feet in diameter. Sometimes a smoke colored or orange halo may be observed early in the morning at the margins of the patch. Diseased shoots are easily detached from their points of attachment. Roots are discolored but not rotted. In the most badly

affected turf, entire lawns may be blighted. Symptoms on Bermuda usually occur earlier in the spring than on Zoysia. Symptoms in Zoysia occur two to eight weeks after green up, or in the autumn. Sometimes symptoms slowly disappear during the growing season as surviving tillers start filling in the killed spots. Night irrigation, shade, and excessive amounts of nitrogen increase both severity and incidence of patch diseases. Complete fertilizers with time release nitrogen should be used instead of quick release nitrogen. Apply 0.5 pound of nitrogen per thousand square feet approximately three weeks after the grass turns green in late May. No more than two pounds of nitrogen total should be applied per growing season to Zoysia. A soil test is useful to see where fertility levels are. Good drainage is essential for a healthy lawn. The turf should be de-thatched if thatch accumulates to more than 0.5" thick. De-thatching should be done while grass is actively growing. Fungicides may be applied once in the spring between March 15 and April 15, and again in the fall between September 20 and October 10. Heritage, Prostar, Eagle, Instrata, and Bayleton are labeled for Large Patch. For large patch, soil test for pH and nutrients. Avoid night watering. Homeowners may use Spectracide Immunox Fungus Plus Insect Control for Lawns, or Scotts Lawn Fungus Control, or Bonide Infuse Systemic Disease Control Lawn and Landscape.

Bermuda Large Patch- *Rhizoctonia solani*



Mark Brown University of Arkansas Cooperative Extension