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RESEARCH & EXTENSION
University of Arkansas System
Sherrie Smith

SPDN
Southern Plant Diagnostic Network
Issue 9-May 11, 2007

Arkansas Plant Health Clinic Newsletter

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Austrian pine

Dothistroma needle blight caused by *Dothistroma pini* is a devastating disease of pines in the United States. Twenty pine species and hybrids have been found to be hosts. Both Austrian pine and Ponderosa pine are highly susceptible. Infected needles drop prematurely. Infection is typically more severe in the lower crown. Early symptoms are deep green bands and yellow and tan spots on the needles. The deep green band color is only observable at the beginning of symptoms. Later the bands turn brown to reddish brown. The disease is sometimes called the **red band disease**. Ends of infected needles turn light green, then tan, then brown, but retain a green color at the base. Dark colored stromata containing the spores ruptures the epidermis the spring following the initial infection. They are spread by wet rainy weather throughout the growing season. It is the mature needles that are susceptible, so several applications of fungicides a year are necessary for good protection. Daconil, Quadris, and Kocide are labeled for needle casts in Arkansas. Applications should start at new growth in the spring and continue at 2–4-week intervals depending on disease pressure.

Pine Dothistroma Needle Blight- *Dothistroma pini*

Pine Dothistroma Needle Blight- *Dothistroma pini*

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Oak

There are over 30 species of oak found in Arkansas. All species are susceptible to Hypoxylon canker, (*Hypoxylon atropunctatum*), with red and black oaks being the most susceptible. This disease mainly affects oaks that have been stressed by drought, wilt disease, construction damage, lightning injury, and insects. Hypoxylon canker usually kills the tree within a few weeks or months of observable symptoms. Hypoxylon canker is a vascular disease that causes a dark brown discoloration of the sapwood. The first visual symptoms are the yellowing and wilting of upper leaves and tip dieback. Major limbs are killed as the disease progresses down the branches. The outer bark sloughs off revealing light silvery fungus tissue that turns black colored. Badly infected trees often have piles of loosened decayed bark on the ground at the base of the tree. There is no cure. The best preventative is good care of valuable specimens. Oaks should receive 1-2 inches of water a week and a bi-yearly feeding of a tree and shrub food or a general purpose 13-13-13. Control of bark beetles and borers helps prevent entry points for the fungus.

Oak Hypoxylon Canker- *Hypoxylon atropunctatum*

Photo by Mitch Crow, University of Arkansas Cooperative Extension

We're starting to see samples of oak leaves with **Oak Leaf Blister** symptoms. Oak leaf blister is caused by *Taphrina caerulesence,* a common fungal disease of oak. The spores are carried to buds in the spring by wind and rain where they remain until infecting the new leaves the following spring. After infection, small concave or convex spots appear. These pale green roughened spots thicken and become noticeable brown blisters by summer. Infected trees will often suffer premature leaf drop. Although this disease does not normally kill the tree, it reduces plant health and vigor as the tree replaces the lost leaves. Control consists of cleaning up all fallen leaves and twigs to reduce inoculum; keeping the tree watered and fed to reduce stress; and applying fungicides in severe cases. Fungicides should be applied in the fall after leaves are shed, and in the spring at bud swell, reapplying every 7-10 days until the new leaves harden. Chlorothalonil is listed for oak leaf blister.

Oak Leaf Blister- *Taphrina caerulesence*

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Oak Leaf Blister- *Taphrina caerulesence*

Tomato

Bacterial canker is spread by seed, infected soil and tools, field workers, machinery, and rain splash. Margins of lower leaves become brown with one side of the leaf often wilting. Yellowish streaks along the stem develop into sunken brownish-black cankers. Cankers may ooze whitish-yellow exudates as the pith collapses.

Control:

1. Use only clean seed and transplants.
2. Suspect seed should be treated with 1% bleach for 10 minutes.
3. Pruning tools and stakes should be disinfected with 1% bleach.
4. Infected plants should be destroyed immediately.
5. Practice crop rotation for 2 years and plant beans or corn in infested soil to eliminate the bacterium from the soil.

Tomato Bacterial Canker- *Clavibacter michiganensis* ssp. *michiganensis*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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Ivy

English ivy, Hedera helix, is a perennial evergreen vine popular throughout the United States. Common English ivy has dark green foliage, but some varieties have gold or variegated foliage. Ivy grows well in part to full shade and tolerates poor soils and air pollution. It is used most as a shade groundcover, growing from 6-8 inches high and forming a dense mat. When offered support such as a tree or wall it will ascend as high as 80 ft. It climbs by using root-like structures on the stems called holdfasts or feet. It doesn't climb by twining as do honeysuckles and clematis. It doesn't kill large trees that it uses as a support, but it can eventually damage brick and stucco walls. Perhaps the most common disease problem of English ivy is bacterial leaf spot caused by *Xanthomonas campestris* pv *hedera*. It is most severe in nurseries and landscapes with high humidity. Lesions appear on the lower surfaces of leaves as water-soaked spots that turn reddish brown to black colored. Sometimes orange-red oozing from the lesions may be observed during prolonged moist conditions. The spots can expand to large lesions 2-10 mm in diameter. Older lesions will dry and crack during dry periods. Infected stems and petioles will get elongated dark lesions. When a stem is girdled wilting occurs. Bacterial infections are spread by overhead irrigation, rain splash, and contaminated tools. Kocide is the chemical treatment of choice but must be used in conjunction with minimizing overhead irrigation, and the use of resistant cultivars.

English Ivy Bacterial Leaf Spot- *Xanthomonas campestris* pv *hedera*

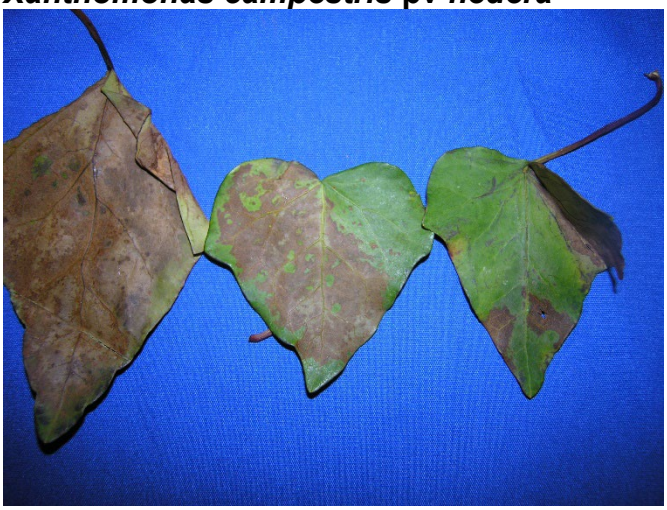

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Clematis

Clematis are wonderful easy to grow perennial vines that come in a wide range of bloom size, color, and growth habit. They are splendid winding through a rose arbor as companions to climbing roses. The vine needs 5-6 hours of sun a day for best blooming although some varieties tolerate bright shade very well. Clematis requires good average garden soil with excellent drainage. They benefit from having their root zone mulched or otherwise shaded. They are slow growers the first few years. The most common complaint we have in the clinic is that of clematis suddenly wilting. Clematis wilt is caused by several fungi with *Ascochyta clematidina* being a common culprit. This fungus can cause leaf lesions but causes wilt when the fungus penetrates the stem into the nodes. Wilt can happen at any time but is common just as blooming starts. Usually only

one or two stems are affected. Leaves and stems turn blackish-brown and collapse. Cross sectioning at the stem nodes reveals dark brown areas. This is usually not fatal to the plant. Wilted stems should be pruned back to healthy green tissue even if this means cutting the stems all the way to the ground. A protective ornamental fungicide is sometimes useful, but plants usually recover without fungicide treatment.

Clematis Wilt- *Ascochyta clematidina*

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.

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