



Arkansas Plant Health Clinic Newsletter

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Hawthorn

Hawthorns are staples in any landscape designed to attract birds. Their dense spreading growth and thorny branches provide safe nesting sites, and their berries provide winter food for migrating species of birds such as waxwings and thrushes. Attractive flowers, fragrance, and showy berries make them attractive specimen trees or hedges in the home landscape. Depending on species, hawthorn grows into trees or shrubs from 5-14 ft tall. They are not particular about soil but require good drainage and full sun to thrive. The most common problem we see in Hawthorn is fungal leaf spot caused by *Entomosporium thuenenii*, formerly *E. mespili*. Numerous small red-purple spots develop on leaves and fruit. As the season progresses the entire leaf surface may become discolored with large patches of purplish-brown blotches. Heavy infections cause the leaves to turn yellow and drop prematurely. Highly susceptible varieties may completely defoliate. The fungus overwinters on fallen leaves, and green twigs. Rainfall in the spring splashes the spores onto new foliage. Repeat cycles of spore production keep the infection active throughout the growing season. Cultural controls include raking up and disposal

of fallen leaves, avoiding overhead irrigation, and adequate spacing to ensure good air circulation. Ornamental fungicides such as Rose Spray or Daconil should be applied as soon as plants begin to leaf out and continued through the season. The best line of defense is to plant resistant cultivars. The Cockspur Hawthorn, Washington Hawthorn, Dwarf Yedda, Indian Princess, and Olivia have been found to have good resistance. Highly susceptible varieties such as Pinkie, Harbinger of Spring, Heather, Enchantress, White Enchantress, Spring Rapture, and Springtime should be avoided.

Hawthorn Leaf Spot- *Entomosporium thuenenii*



Photo by Sherrie Smith, University of Arkansas
Cooperative Extension

Roses

It's time to start spraying your roses for foliar diseases. Don't wait until you have leaf spots.



The rose problem most diagnosed in the clinic is Black spot caused by the fungus *Diplocarpon rosae*. This disease can cause severe defoliation in susceptible varieties. It is characterized by fuzzy edged rounded blackish or purplish spots on the rose leaf. On the canes it appears as raised dark reddish or black blotches. Leaves turn yellow and drop to the ground. The bush can quickly become completely defoliated. Pruning is a very useful tool to control foliar diseases. Winter pruning should include removing canes with red lesions as well as old leaves to reduce overwintering fungus. Repeat-blooming roses should have already been pruned, but growers need to wait to prune single-blooming old ramblers until immediately after flowering is over. Canes that bore blooms this year should be pruned to the ground and new canes produced this summer should be trained and tied in place for next year. Many old ramblers are particularly prone to powdery mildew as well as black spot. Rose sprays listed for black spot will suppress powdery mildew outbreaks as well.

Protective fungicides such as Rose Spray or Daconil should be applied as soon as roses start to leaf out in the spring and every 7-10 days throughout the spring and summer. Organic growers can use two tablespoons of baking soda per gallon of water as a spray. Roses should be irrigated at ground level when possible. Susceptibility to black spot was introduced into modern roses via early China tea roses, the first yellow roses used in European and U.S. rose breeding. As a result, many modern yellow roses are very susceptible. Check with your local nursery for resistant varieties.

Rose Black Spot-*Diplocarpon rosae*



Photo by Sherrie Smith, University of Arkansas
Cooperative Extension

Peaches

Peaches should have been sprayed last fall after leaf-fall to protect against Peach leaf curl caused by *Taphrina deformans*. If the buds are already swelling it is probably too late to protect against the disease this season. Symptoms are abnormally thickened, puckered curled leaves. They often have a reddish or yellowish discoloration and are shed prematurely. Fruit and blossoms can also be infected but are usually shed before symptoms become noticeable. Rake up all fallen leaves, twig, and fruit and destroy. Spray in the fall with chlorothalonil. Another spray may be applied in late winter before bud swell.



Peach Leaf Curl-*Taphrina deformans*



Photo by K. Branch, University of Arkansas Cooperative Extension

Plum

The first sample has arrived this spring at the clinic with Black knot of plum caused by *Dibotryon morbosum*. Black knot of cherry and plum is a serious disease throughout the United States. The fungus affects fruit spurs, twigs, and branches. Infection typically occurs on the newest growth. Abnormal growth of bark and wood tissues produces small, light-brown swellings that eventually rupture as they enlarge. In late spring, the rapidly growing young knots have a soft texture that becomes covered with a velvety, olive-green growth of the fungus. In summer, the young knots turn darker and elongate. By fall, they become hard, brittle, rough and black. During the following growing season, the knots enlarge and gradually encircle the twig or branch. The cylindrical or spindle-shaped knots may vary from one-half inch to a foot or more in length and up to 2 inches in diameter. Girdling by the gall causes

death of the twig or branch. Small twigs often die the first season they become infected. Remove all knots and swellings by pruning three to four inches below the knot during the dormant season before April. Where infections occur on larger branches which should be saved, cut the infection out down to the wood and two to three inches from its edge. Burn, bury or otherwise remove clippings from the area because they may still be an active source of spores. Severely infected trees should be removed entirely. Cut and remove wild hosts of the disease. Use resistant varieties if disease pressure is high. Preventative sprays may be necessary if nearby disease sources cannot be eliminated or when bringing a heavily infected tree back to health. A dormant spray of lime sulfur during the winter may be helpful to trees. During the growing season spray with a fruit tree spray or Captan at bud swell in the spring.

Plum Black Knot- *Dibotryon morbosum*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension



Cherry Black Knot- *Dibotryon morbosum*



Photo by Rick Cartwright, University of Arkansas Cooperative Extension

Apples

Spray programs should be started now for apples if you are not already spraying. Prevention of diseases such as Apple scab and rust should start when ½ inch of green tissue is visible in the bud. We are also starting to see the fruiting bodies of Cedar Apple Rust in susceptible juniper and red cedars now.

The overwintering stage occurs on cedar trees as a gall that oozes bright orange, jelly-like tentacles (telial horns) during or right after wet weather in the spring. (photos) Special airborne spores form on these horns, and blow to nearby apple trees, where they can infect leaves and fruit – causing unsightly spots (photo). The fungus spends the summer on apples, then in the fall produces spores that again infect cedar twigs – completing the life cycle for this complex fungus. Cultural methods of control involve removal of either host within ½-1 mile from the other and pruning and removing galls from the

red cedar and juniper hosts during the dormant season. Cedar apple rust can be controlled with preventative fungicide sprays before noticeable infection of leaves has occurred. Fruit tree sprays give good control when applied in a timely fashion. Follow label directions. Selection and planting of resistant cultivars is the most effective means of control. Examples of resistant junipers are *Juniperus chinensis* var. *sargentii*, *J. communis* cv. *Aureospica*, and *J. virginiana* cv. *Tripartita*. Resistant apple cultivars include Delicious, Empire, Jonamac, McIntosh, and Paulared. Resistant crabapples include Ellwangerina, Henry Kohankie, Ormiston Roy, and Red Baron.

Juniper with Cedar Apple Rust- *Gymnosporangium juniperi-virginianae*



Photo by Rick Cartwright, University of Arkansas Cooperative Extension



Apple with Cedar Apple Rust- *Gymnosporangium juniperi-virginianae*



Photo by Sherrie Smith, University of Arkansas
Cooperative Extension

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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