



March 5, 2007

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.

## Hawthorn

Hawthorns are staples in any landscapes 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, hawthorns grow into trees or shrubs from 5–14 feet tall. They are not particular about soil but require good drainage and full sun to thrive.

The most common problem we see in hawthorns is fungal leaf spot caused by *Entomosporium 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 over-winters 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 disposing 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 throughout 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 leafspot



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 commonly 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 may use two tablespoons of baking soda per gallon of water as a spray. Roses should be irrigated at ground level when possible.



<http://apps.caes.uga.edu/Urbanag/graphicsfiles/rose3.JPG>

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.



<http://www.backyardnature.net/f/leafcurl.jpg>

### **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, twigs, and fruit, and destroy them. Spray in the fall with a fruit-tree spray. Another spray may be applied in late winter before bud swell.



## Plum

The first sample with black knot of plum caused by *Dibotryon morbosum* has arrived at the clinic this spring.

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 two inches in diameter.



Sherrie Smith/University of Arkansas Cooperative Extens.

## Black knot



Rick Cartwright/University of Arkansas Cooperative Extension

Girdling by the gall causes death of the twig or branch. Small twigs often die the first season they become infected.

The most important control measure is pruning out the infected twigs and destroying them, removing wild plums and cherries from adjacent fence rows, and applying fungicides from bud break to early summer. Fruit tree sprays containing captan are useful.

## Apples

Spray programs should be started now for apples, if you are not already spraying. Prevention of diseases such as apple scab should start when one-half inch of green tissue is visible in the bud.

We are starting to see the fruiting bodies of cedar apple rust in susceptible juniper and red cedars now.

The over-wintering 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. (See photos on next page.)



### Cedar apple rust on cedar tree



Rick Cartwright/University of Arkansas Cooperative Extension

### Cedar apple rust on cedar



Rick Cartwright/University of Arkansas Cooperative Extension

Special airborne spores form on these horns and blow to nearby apple trees, where they can infect leaves and fruit—causing unsightly spots. (See photo.) The fungus spends the summer on apples. Then in the fall it 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 one-half to one 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.

### Cedar apple rust on apple leaf



Clemson University – USDA Cooperative Extension Slide Series, [www.forestryimages.org](http://www.forestryimages.org)

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.