



Arkansas Plant Health Clinic Newsletter

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Indian Hawthorn

Indian hawthorn, *Rhaphiolepis* spp., is a mainstay in the southern landscape. They are low-growing, evergreen, flowering shrubs with a dense mounded growth habit. They are ideal low-maintenance plants for use in small gardens and foundation plantings. The most popular cultivars grow between 3 and 6 feet tall by 3 and 6 feet wide, although there are cultivars that grow to small tree size. The attractive flowers, berries, and overall hardiness make Indian Hawthorn deservedly popular. 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 mespili*. Entomosporium Leaf Spot also attacks mountain ash, blackberry, crabapple, loquat, peach, pear, *Photinia*, *Pyracantha*, quince, and rose, among others. Symptoms are numerous, small, reddish-purple spots that develop on leaves and fruit. As the season progresses, the entire leaf surface may become discolored with large patches of purplish-brown blotches. Tiny black structures inside the lesions, resembling pimples, can be observed with a hand lens. Heavy infections cause the leaves to turn yellow and drop prematurely. Highly susceptible

varieties may completely defoliate, weakening the plant. The fungus overwinters on plant debris such as fallen leaves and twigs. Rainfall in the spring splashes the spores onto the new foliage. Cultural controls include raking up and disposing of fallen leaves, avoiding overhead irrigation, and providing adequate spacing to ensure good air circulation. Apply ornamental fungicides such as Rose Spray or Daconil as soon as plants begin to leaf out and continue through the season. The best line of defense is plant resistant cultivars. Olivia, Eleanor Tabor, Indian Princess, Gulf Green, and Georgia Petite are resistant. Susceptible varieties include Bay Breeze, Cameo, Springtime, Pinkie, Enchantress, and Heather. The selection of a resistant cultivar avoids repetitive applications of fungicides.

Indian Hawthorn Entomosporium Leaf Spot- *Entomosporium mespili*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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Indian Hawthorn Entomosporium Leaf Spot- *Entomosporium mespili*



Photo by Sherrie Smith, University of Arkansas
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Onion

Downy Mildew, caused by *Peronospora destructor*, affects all Allium crops: onions; garlic; chives; and shallots. Downy Mildew can be very destructive during periods of cool,

humid weather. The beginning symptom is elongated, slightly paler patches on the leaves. The lesions turn light brown to tan with grayish-violet fuzzy growth during wet weather. These diseased sections of the leaf eventually turn yellow/brown, collapse, and fold over. Seed stem lesions are often on only one side of a stem, and circular or elongate in shape. The one-sided lesions cause the stem to break over from the weight of the seed head, resulting in the withering of the seeds. Systemically infected plants produce bulbs that are soft and shriveled, with the outer fleshy scale becoming amber colored, wrinkled, and watery. Sometimes infected bulbs remain firm but sprout prematurely. The foliage of such bulbs is an abnormal light green color. Downy Mildew overwinters on volunteer onion plants and persists on stored bulbs and seeds. Spores are blown or splashed up onto new plants in the spring. For infection to occur, relative humidity must be greater than 95%. New spores are produced at night. Typically, the infection cycle is characterized by latent periods of 9-16 days and 1-2 days of sporulation. Foliage in the field may be destroyed during or after four infection cycles. Cultural controls are critical in controlling Downy Mildew. All crop debris, volunteer plants, and unthrifty bulbs should be removed and destroyed. A strict crop rotation schedule should be followed, with 3-4 years between Allium crops. Good drainage in the field is essential. It is recommended that rows face the same direction as prevailing winds to help avoid prolonged leaf wetness. For the same reason, overhead irrigation must be avoided. Fungicides such as Pristine, or Cabrio, or



Revus, or Maneb are available to commercial growers. Fungicide applications must be frequent as new foliage is constantly being produced. Homeowners must depend on practicing good sanitation and crop rotation.

Onion Downy Mildew-*Peronospora destructor*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Rose

We grow roses for their beauty in bud and bloom, for fragrance, for utility in the perennial border, and for sentimental associations. Nearly two hundred million roses were sold for Valentine's Day last year alone. For the most part, rose culture is not difficult. They require at least 6 hours of sun for best bloom, and moist, well-drained soil rich in organic matter. A pH of 6.5-6.8 is ideal. The most frustrating disease of roses continues to be Black Spot, caused by *Diplocarpon rosae*. Symptoms are circular to irregularly shaped black spots with feathery edges. Small black pimples (spore producing structures) may be seen in the lesions with the use of a hand lens. The leaf tissue surrounding the spots turns yellow, eventually causing infected leaves to fall from the plant prematurely. Severely affected plants will lose nearly all their leaves. Although the plant will replace the fallen leaves, repeated defoliation weakens the rose as well as being unsightly. There are some excellent cultivars with resistance to Black Spot. Unfortunately, many with good resistance to the disease lack the wonderful fragrance commonly associated with roses. However, there are rose cultivars that combine excellent disease resistance with fragrance. Some favorite climbers for example are "Darlow's Enigma," "Compassion," "New Dawn," "James Galaway," and "Awakening." Shrub roses with good resistance are "Henry Kelsey," "Morning has Broken," "Magnificent Perfume," "Quietness," and "Yellow Submarine." These are just a few of the cultivars available with disease resistance and fragrance. For those unable to locate cultivars



with both disease resistance and good scent, Black Spot can be managed with a good spray program coupled with cultural controls. Overhead irrigation should be avoided if possible. If overhead irrigation is used, it should be done in the morning so foliage can dry quickly. Rake up all fallen leaves and remove them from the planting. Susceptible roses should be sprayed with a rose fungicide as soon as they leaf out in the spring, and then every 7-10 days, especially after a rain. Ortho Rose Pride Rose & Shrub Disease Control; Bonide Remedy; and Ferti-Lome Liquid Systemic Fungicide are labeled for control of Black Spot. For those, who dislike spraying frequently, a systemic such as Bio Advanced Disease Control for Roses, Flower, & Shrubs is available. Commercial growers may use Heritage, or Eagle, or Compass, or Banner MAXX, or Daconil Ultrex, or Insignia, among others. **Now is the time to start spraying!**

Rose Black Spot-*Diplocarpon rosae*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Rose Black Spot-*Diplocarpon rosae*



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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