



Arkansas Plant Health Clinic Newsletter

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Mulberry

Mulberry trees are abundant in Arkansas. Non-fruiting ornamental species are very popular in our landscapes. Cercospora Leaf Spot of Mulberry, caused by *Cercospora mori*, formerly *Cercospora moricola*, is the most common foliar disease of Mulberry. Overhead irrigation, high humidity, and poor air circulation contribute to development and severity of the disease. The most obvious symptoms are reddish-brown spots on the leaves. Spots are round to irregular in shape and may have a purple margin. Black fruiting bodies of the fungus may be observed with a hand lens. Although not fatal to the tree, the leaf spot is unsightly. All fallen leaves should be cleaned up at the end of the season. Trees with a history of the disease may be treated with a fungicide beginning at budbreak in the spring. Follow label for repeat applications. Homeowners may use Ortho Garden Disease Control, or Bonide Fung-onil, or Garden Tech Daconil Concentrate, or Hi-Yield Vegetable, Flower, Fruit and Ornamental Fungicide, or Monterey Fruit Tree, Vegetable, and Ornamental Fungicide, or Ferti-lome Broad Spectrum Lawn and Garden Fungicide, or Bonide Mancozeb FL with Zinc, or Ferti-lome F-Stop Lawn and Garden Fungicide,

or Spectracide Immunox Plus Insect and Disease Control for Gardens, or Spectracide Immunox Multi-Purpose Fungicide Spray for Gardens. Organic growers may use Serenade Garden Disease Control, or GreenCure, or Kaligreen, or Milstop, or Actinovate Biological Lawn and Garden Fungicide.

Cercospora Leaf Spot Lesion- *Cercospora mori*



Photo by Sherrie Smith, University of Arkansas
Cooperative Extension



Cercospora Leaf Spot Lesion- *Cercospora mori*



Photo by Mallory Martin, M.S. student Plant Pathology, University of Arkansas

Bagworms

Bagworms have hatched and are actively feeding on host plants. Newly hatched bagworms can be hard to detect as they are VERY small at this time. They are further camouflaged by making a bag of the plant material they are feeding on. Bagworms are moths in the Family Psychidae. The larvae feed on 50 families of deciduous and evergreen trees and shrubs (Rhainds et al. 2009). Severe infestations can seriously damage the beauty and health of host plants, especially juniper, arborvitae, hemlock, fir, pine, and spruce species. They live in a bag made from silk that the caterpillar produces. Pieces of plant debris are incorporated into the bag for camouflage. Female bagworms are wingless and never leave the bag. Males are black to brown with clear wings and have a flexible abdomen that

can be extended into the female's bag for mating. After mating, eggs develop within the female,

and she dies. There can be as many as 300-1000 eggs in a single bag. The eggs overwinter in the bag until spring when larvae hatch, crawl out, and spin down from the bag by a strand of silk that often acts like a parachute to carry them to new hosts. Once they land, they begin making their own silk bags. Unless trees are touching or are very close to each other, the worms don't move from tree to tree. Many homeowners fail to notice them until they have matured and permanently glued themselves to a stem. At that point they have quit feeding and the damage has been done for the year. Non-chemical control is best achieved in late fall or winter because the bags can be picked off the tree and destroyed. Be sure to remove the silk that binds the bag to the stem as it may cause girdling later. This is only effective if the number of bags is relatively low. Spring is the best time for chemical control because the larvae are small, actively feeding, and don't have the full protection of a completed bag yet. Insecticides readily available to homeowners in Arkansas are: Bacillus thuringiensis (Biotrol WP, Thuricide, Sok-Bt) dinotefuran (Green Light with Safari) malathion (various) other pyrethroids per label instructions Restricted use insecticides or those not readily available to homeowners: acephate (Orthene) acetamiprid (TriStar) azadirachtin (Azatin) Bacillus thuringiensis kurstaki (BiobitHP, DiPel, or Foray) bifenthrin (Talstar) bifenthrin + clothianidin (Aloft) bifenthrin + imidacloprid (Allectus) chlorantraniliprole (Acelepryn) fluvalinate (Mavrik) indoxacarb (Provaunt)



novaluron (Pedestal) spinetoram + sulfoxaflor (XXpire) spinosad (Conserve SC).

Spruce Bagworms- Family Psychidae



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Arborvitae Bagworms- Family Psychidae



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Tomato Blossom End Rot

Both tomato leaves and fruit can suffer from calcium deficiency, although it is relatively rare in the leaves themselves. Symptoms of calcium deficiency in the leaves appear at the top of the plant in the newest growth. Stunting, chlorosis, and interveinal necrosis are symptoms. Very similar symptoms may occur with magnesium deficiency. However, the symptoms will be on the oldest leaves instead of the newest leaves. Magnesium deficiency is usually the result of too much water. Calcium deficiency in tomato fruit is a localized deficiency in the distal end of the fruit. Most often with fruit, there is enough calcium in the soil, but fluctuations in water prevent the plant from supplying the fruit with the necessary amount of calcium for healthy fruit. The fruit develops a light, tan, water-soaked spot on the end of the fruit. These spots turn black and leathery. Occasionally, the rot occurs on the inside of the fruit instead of the outside. The best management for Blossom End Rot is good water management practices. Soil tests should be done at least every two years to make sure there is an adequate supply of calcium in the soil. Blossom End Rot can be alleviated during the growing season by applying a foliar spray of anhydrous calcium chloride. Several brands are available including Tomato Saver and End Rot.



Tomato Calcium Deficiency- Abiotic



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Tomato Calcium Deficiency (Blossom End Rot)-Abiotic



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Tomato Magnesium Deficiency- Abiotic



Photo by John Gavin, 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.

"This work is supported by the Crop Protection and Pest Management Program [grant no. 2017-70006-27279/project accession no. 1013890] from the USDA National Institute of Food and Agriculture."