DIVISION OF AGRICULTURE
RESEARCH & EXTENSION
University of Arkansas System

Sherrie Smith

SPDN
Southern Plant Diagnostic Network

Department of Plant Pathology

PLANT HEALTH

CLINIC NEWS

Issue 11, May 1, 2017

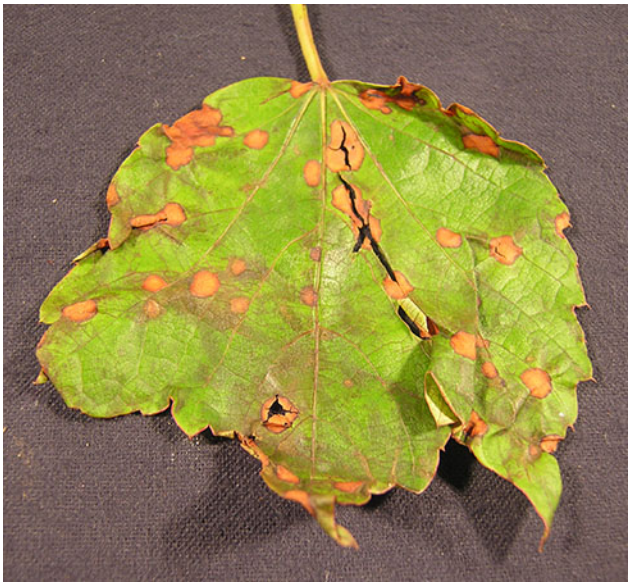
This bulletin from the Cooperative Extension Plant Health Clinic (Plant Disease Clinic) is an electronic update about diseases and other problems observed in our lab each month. Input from everybody interested in plants is welcome and appreciated.

Guignardia Leaf Spot

Guignardia leaf spot, caused by *Guignardia bidwellii,* is a common fungal leaf spot that affects vining plants such as **Boston ivy**, Virginia-creeper, and species of grape. On **Buckeye** trees, the pathogen is a different species, *Guignardia aesculi.* Symptoms on the leaves of vining plants are angular, reddish to gray-brown spots with purplish-brown border. Tiny, black pimple-like structures that are the fruiting bodies of the fungus may be observed in the spots. Dieback may occur if the plant is severely infected. On Buckeye, symptoms first appear on leaves as water-soaked areas which turn reddish-brown to brown with yellow borders. These spots coalesce, causing large blotches which curl the leaves. By late summer the whole plant appears scorched. Fallen leaves harbor the spores, so a thorough cleanup of twigs and leaves is important in control of Guignardia leaf spot. As with other leaf spot diseases, infection is intensified by humid conditions. Improving air circulation by keeping weeds and other plants away from valuable specimens helps to reduce disease. All diseased leaves and petioles should be removed. Avoid overhead irrigation. Fungicides are effective applied at bud break during wet springs. Reapply at intervals specified on the label as long as wet conditions persist. Whenever possible choose resistant varieties. The bottlebrush buckeye (*Aesculus parvifolia* is resistant. Homeowners may use Fertilome Broad Spectrum Lawn and Garden Fungicide, (chlorothalonil), or Hi-Yield Vegetable, Flower, Fruit, and Ornamental Fungicide,(chlorothalonil) or Ortho Maxx Garden Disease Control, (chlorothalonil), or Ortho Disease B Gon Garden Fungicide, (chlorothalonil), or Garden Tech Daconil Fungicide,(chlorothalonil), or Bonide Fung-onil Multipurpose Fungicide, (chlorothalonil), or Spectracide Immunox Plus, (myclobutanil & permethrin), or Bonide Rose Rx Systemic Drench, (tebuconazole), or Bayer Advanced Garden-Disease Control for Roses, Flowers, Shrubs, (tebuconazole), or Bayer Advanced Garden-All-in-One Fungicide/Insecticide/Fertilizer, (tebuconazole & imidacloprid), or Fertilome 2-N-1 Systemic Fungicide,(tebuconazole & imidacloprid),or Bonide Infuse Systemic for Turf and Ornamentals, (thiophanate-methyl), or Ortho Rose and Flower Insect and Disease Control, (triticonazole & acetamiprid).

Boston ivy Leaf Spot -

Guignardia bidwelli* f. sp. *parthenocissi



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Buckeye Leaf Blotch -

Guignardia aesculi

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Birch

We have received our first sample of the season of birch leaves with distorted corrugations or bumpy ridges. The distortions are caused by Spiny witch-hazel gall aphids, *Hamamelistes spinosus.* Infested leaves turn brown and fall from the tree. However, control is not usually warranted because healthy trees produce a new crop of leaves to replace those destroyed by the aphids. The life cycle of this interesting aphid takes two full years to complete. Eggs are laid on witch-hazel in June and July. The eggs hatch in the spring and the nymphs feed on the flower buds. The feeding activity causes a spiny gall to form on the affected witch-hazel. Winged aphids develop inside the spiny galls, then leave and fly to birch. This generation gives birth to a scale-like generation, which hibernates on birch until the following spring. At bud break the scale-like aphids feed on the new leaves, causing them to form corrugated galls. When the aphids mature into winged adults, they migrate back to witch-hazel.

Birch Spiny Witch-hazel Gall - *Hamamelistes spinosus*

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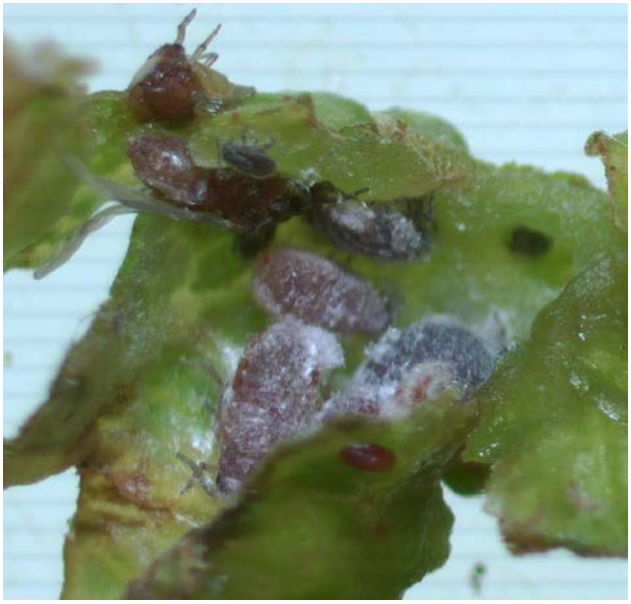
Birch Spiny Witch-hazel Gall Aphids- *Hamamelistes spinosus*



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Wheat Insect Management and Control

Nicholas J. Seiter, Gus M. Lorenz and Glenn E. Studebaker

The Plant Health Clinic received samples from a wheat field heavily infested with Hessian fly. Below is an article by our extension experts, Nicholas J. Seiter, Gus M. Lorenz and Glenn E. Studebaker. Follow link to see complete article about wheat insect pests.
https://www.uaex.edu/publications/pdf/mp404/Chapter8Wheat.pdf

The Hessian fly, Mayetiola destructor, can be a major limiting factor for wheat production throughout the southern United States. Wheat is the primary host of the Hessian fly, but it also will infest triticale, barley and rye. Hessian fly does not attack oats but can develop on some non-cultivated grasses such as little barley and wild rye.

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Adult Hessian flies are small black flies about the size of a mosquito (Figure 87). Adults live for about two days. After mating, females lay about 200 eggs in the grooves of the upper side of wheat leaves. Eggs are orange-red, 1⁄inch long and hatch 32 in three to five days. Newly hatched larvae are reddish in color and move down the leaf groove beyond the leaf sheath to the stem where they begin to feed at the base of the leaf. Maggots become white after the first molt and appear greenish white when fully grown.

After approximately 14 days in the larval stage, maggots molt into a resting stage, or pupa. The pupa is often referred to as the “flaxseed” stage because it resembles seeds of flax. The entire life cycle requires about 35 days at 70°F. Newly hatched larvae are exposed on the leaf surface and are susceptible to adverse disease and weather conditions. Once larvae move into the stem base they are protected from natural enemies and the environment.

Hessian fly maggots suck sap and stunt tillers, possibly by injecting a toxin into the plant. Feeding by a single larva for several days is sufficient to completely stunt or kill a vegetative tiller. Stunted vegetative tillers are dark green, do not

The Hessian fly is a cool season insect that can function normally at temperatures as low as 38°F. Hessian flies spend the summer as pupae (flaxseed) in wheat stubble; therefore, burying stubble can reduce fall populations. The number of generations during the year is governed largely by temperature. Three to four generations occur per season in Arkansas. Adults emerge from over summered pupae with the first cool rains of fall, often before wheat has been planted. Consequently, the first generation often develops entirely on volunteer small grains and weed hosts. A second and sometimes a third generation occur 6

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in late fall and winter, and one to two generations develop in the spring. The fall and winter generations may stunt and kill seedlings and vegetative tillers. The spring generation infests jointed stems during or after head emergence. While Hessian fly resistant varieties of wheat

are available in some areas, they are often not effective against the biotypes of Hessian fly that occur in Arkansas. Crop rotation, destruction of volunteer wheat and tillage that buries wheat stubble will help reduce Hessian fly infestations in susceptible varieties.

The best method to reduce injury and damage by the Hessian fly is to delay planting. While there is no true “fly free” date in Arkansas due to our warm climate, wheat planted after October 10 generally has substantially lower infestations of Hessian fly, while wheat that is planted in mid to late September is very susceptible. The later in the fall that wheat is planted, the safer the crop is from the threat of Hessian fly infestation, particularly in northern Arkansas. Delayed planting to reduce Hessian fly occurrence is less effective in southern Arkansas where typical winter temperatures do not limit Hessian fly activity. When choosing a planting date, the risk of Hessian fly infestation must be weighed against the threat of wet weather that can prevent the planting of the crop. Other cultural control methods include burning wheat stubble and disking it under, as well as destroying volunteer wheat. Foliar applications of insecticides in the winter and spring are not effective for Hessian fly control. When planting early, consider using an insecticidal seed treatment for Hessian fly suppression.

Wheat Hessian Fly pupae-

Mayetiola destructor

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