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Southern Plant Diagnostic Network
Issue 16-June 14, 2016

Arkansas Plant Health Clinic Newsletter

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Bermudagrass Mite

by Ricky Corder

The Bermudagrass Mite, *Eriophyes cynodoniensis*, causes leaf sheath and stem gall which is recognized by stunted plant growth, shortened internodes, enlarged nodes, and growth in a rosette pattern. Leaf sheaths become swollen and bunched and grow tightly packed together. Damage becomes apparent in spring and later the grass turns brown and damaged areas start to thin.

This mite, like others in the family Eriophyidae (gall mites), is incredibly tiny and almost impossible to see without the use of a dissecting microscope. They are yellowish to white in color, and measure 170-210 microns (0.17-0.21 mm) in length. The mites live in the leaf sheaths and there may be a hundred or more mites in a single sheath. One generation takes seven to ten days in the warmer summer months.

Because they are protected by leaf sheaths, control can be difficult. In turfgrass, very close mowing or scalping and then removing clippings can help keep the population small. There isn't an established threshold for treatment, but if you decide treatment is warranted, the grass should be mowed very short, and clippings removed. This exposes more mites to the treatment and makes treatments more likely to penetrate protected areas within sheaths.

For home lawns, the following insecticides and formulations are recommended in Arkansas: azadirachtin (Azatrol), bifenthrin (Allectus GC SC, Bifenthrin 2EC, Quali-Pro Bifenthrin, Talstar F), deltamethrin (DeltaGard T&O 5SC), and lambda-cyhalothrin (Quali-Pro Lambda GC-O, Scimitar).

For commercial turf and golf courses, the following additional insecticides and formulations are available in Arkansas: chlorpyrifos (Dursban Pro) and dicofol (Kelthane 50 WSP). Always read and follow the directions on the labels.

Bermudagrass Mite-*Eriophyes cynodoniensis*

Photo by Ricky Corder, University of Arkansas Cooperative Extension

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Bermudagrass Mite-*Eriophyes cynodoniensis*

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Oak

Eastern Pine Gall Rust requires two hosts to complete its life cycle. Red and black oaks are the most important alternate hosts for Eastern Pine Gall Rust caused by the fungus *Cronartium quercuum*. Infection on oak leaves causes small necrotic or chlorotic areas. On the underside of the leaves, hair-like telial structures may be visible. All spores, whether they infect pine or oak, are primarily windborne. High humidity during spore dissemination increases the incidence of infection. Hard pines are more susceptible than soft pines. Austrian, Jack, Loblolly, Pitch, Scotch, and Shortleaf are susceptible. Mugo pines, often planted in the home landscape, can also become infected. Infection results in the formation of spherical galls, which eventually surround the stem. The galls disrupt the sap flow, often girdling and killing the part of the tree above it. Trees are greatly weakened and subject to wind damage, with young saplings often killed outright. Treatment consists of pruning out the galls on nearby pines and destroying them. Chemicals are not usually effective.

Eastern Pine Gall Rust on oak leaves (telial stage)-*Cronartium quercuum*

Photo by Ricky Corder, University of Arkansas Cooperative Extension

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Eastern Pine Gall Rust on pine-
Cronartium quercuum

Photo by Tamara Walkingstick, University of Arkansas Cooperative Extension

Tomato

Bacterial Speck of tomato is particularly severe this season. The disease is caused by the bacterium *Pseudomonas syringae* pv. *tomato*. Symptoms on leaves are tiny, round, dark brown to black spots. Spots may run together under environmental conditions favorable for disease development, killing large areas of tissue. Lesions on stems and peduncles are elongated black areas. Fruit lesions are minute specks that are dark and rarely exceed 1mm (.04inch). A dark green halo may be associated with the fruit spot. Controls are the same as for Bacterial spot. The pathogen survives in seed, crop debris, and volunteers. Control measures consist of crop rotation, using clean transplants, seed treatments, elimination of cull piles near production areas, and the timely application of bactericides when necessary. Kocide and mancozeb are labeled for bacterial diseases of tomatoes in Arkansas. Practice a three-year rotation where no eggplants, peppers, potatoes, or tomatoes are grown in that spot. Practice a preventive copper + mancozeb spray program from bloom until the first-formed fruit are 1/3 their final size. After that point, the greatest risk of Bacterial Speck is passed; copper can be dropped from the program.

Tomato Bacterial Speck-
Pseudomonas syringae* pv. *tomato

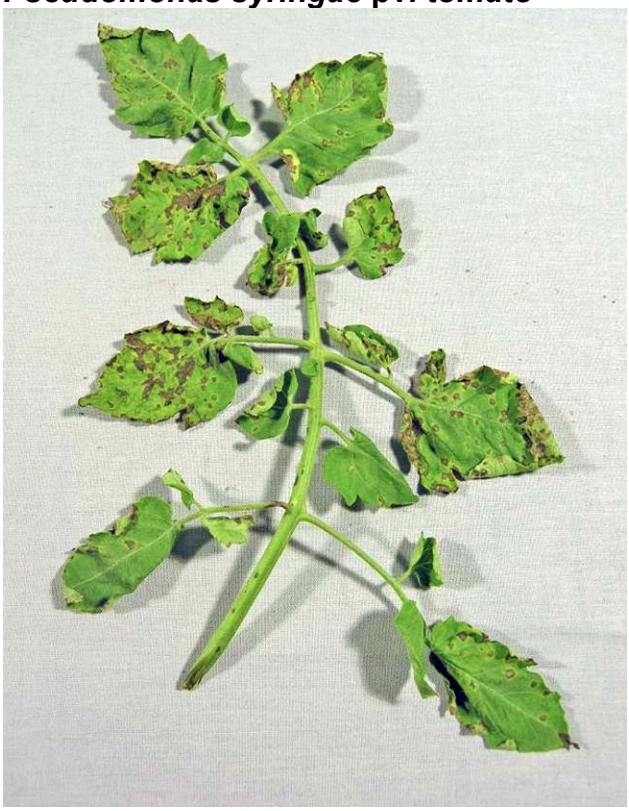

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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Tomato Bacterial Speck-
Pseudomonas syringae* pv. *tomato

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Tomato Bacterial Speck-
Pseudomonas syringae* pv. *tomato

Photo by John Gavin, University of Arkansas Cooperative Extension

Pecan

Mineral deficiencies of nut trees can be caused by factors such as sandy soils, improper pH, inadequate soil moisture, poor drainage, poor aeration, unfavorable temperatures, and root diseases. Soil analysis, leaf tissue analysis, and visual observations are the methods used to diagnose mineral deficiencies. Magnesium deficiency in pecan typically occurs on soils with low pH. Symptoms appear from midsummer to late summer after considerable shoot growth, although they can appear in the spring with cold weather. Symptoms are a distinct chlorotic area along the margins of basal leaves that eventually presents a Christmas tree pattern along the midrib. The cure is foliar sprays for spring deficiency, and soil applications for summer deficiency applied the following winter. Amounts of nutrients needed cannot be known without soil and tissue analysis. Most nutritional problems may be avoided by starting an orchard plan with a soil analysis before planting your trees. Collect leaflets for foliar analysis in mid-July to mid-August. For foliar analysis, select the middle pair of leaflets located on the middle leaf of the current season's growth.

The Arizona Cooperative Extension AZ1410 PDF Leaf Sampling Guide for Pecan Orchards: https://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1410.pdf

To sample an area, take two pairs of leaflets from each of 25 trees selected at random. Remove leaves with a downward or backward pull so that the leaf stem remains attached to the leaf. Choose leaves from shoots on different sides of the trees. Do not collect from suckers, water sprouts, or limbs that do not receive sunlight. Avoid leaves with insect, disease, or other injury. This should total 50 pairs of leaflets per sample area. Rinse leaves briefly in tap water to remove any pesticide

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residues. Allow to air dry out of the sun and submit in a clean paper bag to:

Agricultural Diagnostic Laboratory
1366 W. Altheimer Drive, Fayetteville, AR 72704-6804
(479) 575-3908 agrilab@uark.edu

The submission form for the Agricultural Diagnostic laboratory is A.G.R.I. 423
Do not submit to the Plant Health Clinic for tissue analysis.

Pecan Magnesium Deficiency-

Abiotic

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Pecan Leaf sampling diagram

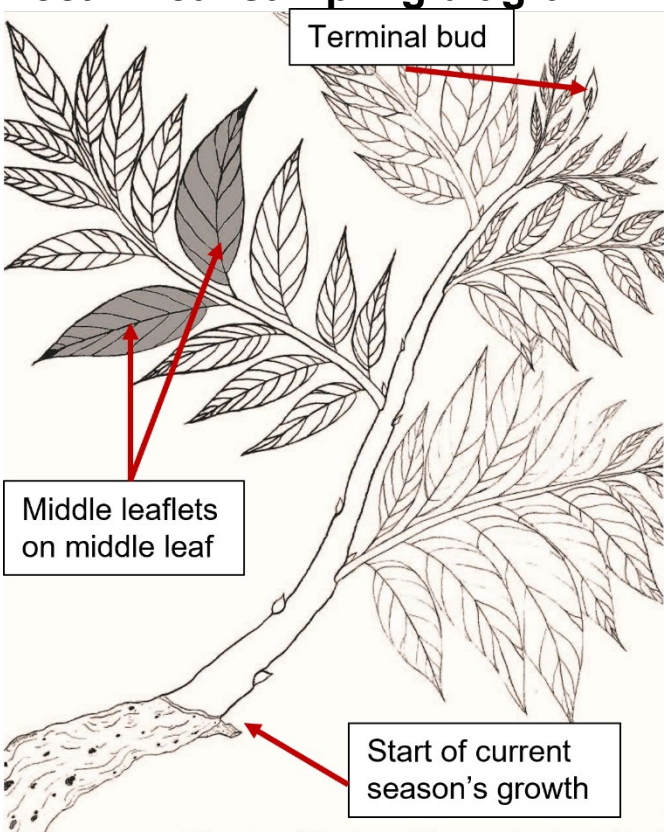

Illustration by Corey Shemroske, Arizona Cooperative Extension, University of Arizona College of Agriculture and Life Sciences

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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"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."