DIVISION OF AGRICULTURE
RESEARCH & EXTENSION
University of Arkansas System

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SPDN
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Arkansas Plant Health Clinic Newsletter

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Maple

Bacterial leaf scorch of shade trees (BLS) is caused by the bacterium *Xylella fastidiosa.* The bacterium colonizes and clogs the tree's water conducting tissues. Water transport becomes disrupted in the roots, branches, and leaves due to multiplying amounts of the bacteria and their by-products. The tree responds to the presence of the bacteria by trying to contain the infection and shutting down plugged areas, further impeding water transport and eventually killing the tree. Symptoms are marginal leaf necrosis, or browning, bordered by a halo separating the dead or scorched tissue from the green tissue. The discoloration begins at the leaf margin and moves toward the midrib. Reduced growth and dieback are common in affected trees. Symptoms reoccur each year until the tree cannot support itself and dies. Over 30 families of plants are reported as hosts. These include sycamore, mulberry, red maple, sugar maple, sweetgum, American elm, and oak. Xylella also causes bacterial diseases in grapes, peaches, plums, citrus, almonds, and coffee. In grapes the disease is known as Pierce's disease. In peaches it is called Phony disease. Alternative hosts such as weeds may carry the bacterium without showing symptoms. *Xylella fastidiosa* is transmitted through grafting, or by spittlebugs and leafhoppers. The disease is not curable once acquired. However, proper watering, mulching, and fertilization may delay the inevitable. Trunk injections of the antibiotic oxytetracycline in May and June may suppress bacterial scorch but do not cure the disease. Bacterial leaf scorch is easily confused with abiotic leaf scorch which most often affects young trees during hot weather. The leaves lose moisture through evaporation faster than the roots can replace the water lost. This causes marginal browning that looks very much like BLS. Other problems such as root diseases and borer injury can mimic the symptoms caused by Xylella. Diagnostic tests are available at the Plant Health Clinic to identify Bacterial leaf scorch.

Maple Bacterial Leaf Scorch- *Xylella fastidiosa*

Photo by Sherrie Smith University of Arkansas Cooperative Extension

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Maple Bacterial Leaf Scorch-
Xylella fastidiosa

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Tomato
by Rebecca Barocco

The spider mites *Tetranychus urticae* and *T. evansii* can cause significant damage on tomatoes beginning in midsummer as temperatures become hotter and drier. The mites inhabit the underside of the leaves and suck cell contents through their stylets. The resulting lack of chlorophyll causes the leaves to turn a speckled bronze which eventually die and fall to the ground. Mites can be controlled by spraying Agri-Mek, Brigade, Kelthane, or Provado. Homeowners and organic growers can use horticultural soaps, fine horticultural oils, or pyrellin. Homeowners can also use Malathion. Sprays will have to be repeated. The mites prefer the underside of leaves, so it's important to get adequate coverage of these areas. Sprays should also be thorough because they weave a protective silk web. Applications should be done every 2 to 3 days to kill mites after eggs hatch as the eggs provide a protective barrier against the chemicals. Follow label closely for best results. Mites reproduce quickly. The lifespan of a generation can be as short as one week. Once populations have been controlled, the tomato plant can begin to recover.

Tomato Spider Mite Damage-
***Tetranychus* spp.**

Photo by Rebecca Barocco University of Arkansas Cooperative Extension

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Tomato Spider Mite Damage-*Tetranychus* spp.

Photo by Rebecca Barocco University of Arkansas Cooperative Extension

Tomato Spider Mites-*Tetranychus* spp.

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Grape

Macrophoma rot can be a destructive disease of both table grapes and muscadine grapes. It can also cause fruit rots on apple, avocado, and citrus. Symptoms are one or more flat or slightly sunken lesions, 1-4 mm in diameter on the surface of maturing fruit. The spots are black initially, with small tan or buff-colored centers in which tiny black pycnidia are embedded. Berries of susceptible cultivars may develop a brown, soft rot over the entire surface of the berry. Affected berries fall to the ground and are reduced to dry, hollow shells. Macrophoma rot may be controlled by applying protective fungicides such as Mancozeb, beginning after bloom and continuing through the fruit ripening period. There are resistant cultivars available.

Grape Macrophoma Fruit Rot-*Botryosphaeria dothidea*

Photo by Rebecca Barocco University of Arkansas Cooperative Extension

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Grape Macrophoma Fruit Rot-
Botryosphaeria dothidea

Photo by Rebecca Barocco University of Arkansas Cooperative Extension

Cotton

Stemphylium leaf spot, caused by *Stemphylium solani*, is associated with plant stresses such as extended periods of drought, nutritional issues, nematode, insects, and heavy boll load. Symptoms are small, circular, brown spots with concentric zones. As the spots enlarge, they often coalesce and form large areas of dead tissue. Leaves often drop within a few weeks. Mature lesions develop a white center which can crack and fall out, leaving a shot hole appearance. Fungicides can reduce the incidence and severity of Stemphylium leaf spot but are not always economical.

Cotton Stemphylium Leaf Spot-
Stemphylium solani

Photo by Rebecca Barocco University of Arkansas Cooperative Extension

Corn

Tip dieback on ears of corn is a physiological disorder that occurs when ovules at the tip are not fertilized. This condition is associated with stress from nutritional issues such as drought, insects, cloudy weather, or high temperatures. Symptoms are poor tip fill and little or no kernel development. Kernels are aborted at blister or milk stage.

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Corn Tip Dieback-Abiotic

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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