



Arkansas Plant Health Clinic Newsletter

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Watermelon

Fusarium Wilt of watermelon, caused by *Fusarium oxysporum* f. sp. *niveum*, is a serious soil borne disease of watermelon. On susceptible cultivars, yield losses may be severe. When inoculum levels are high, seedlings may wilt and die in the field (damp off). However, most symptoms occur on older plants after fruit set. Yellowing and wilting of one runner or one side of the plant, along with external lesions on the runner from the crown to runner tip are diagnostic. The tip of the runner turns bright yellow. The entire plant may have these symptoms instead of one side or one runner. A dark brown vascular discoloration occurs inside the crown and roots. The discoloration may be confused with Cucurbit Yellow Vine Disease. With Yellow Vine, the discoloration occurs in the phloem tissue. With Fusarium Wilt the discoloration occurs in the xylem tissue. Vines with Fusarium Wilt may wilt during the heat of the day but appear to recover in the evening. Eventually, most affected vines wilt permanently. Those that don't die are stunted and have considerably reduced yields. Diseased plants often occur in clusters in the field, corresponding to the distribution of inoculum in the soil. Melons grown in fields with

light, sandy, acidic soils are most susceptible to severe outbreaks of Fusarium Wilt, especially when temperatures are between 77-81°F. Higher temperatures are thought to slow the progression of the disease. Many methods of control have been tried, including soil fumigation, soil solarization, crop rotation, and the use of resistant cultivars. Crop rotations of at least 5-7 years or longer between watermelon crops are recommended, as Fusarium has a long residual in the soil. Fumigation and soil solarization have some effectiveness but will not completely exclude the pathogen. The best control is choosing resistant cultivars. None are completely resistant under high disease pressure, but cultivars with resistance can often finish producing before succumbing to the wilt. There is evidence that Fusarium Wilt can also be seed borne. Seedlings started in the greenhouse should be culled at the first sign of wilting or damping off. Seed trays should not be reused without sterilization.

Watermelon Fusarium Wilt- *Fusarium oxysporum* f. sp. *niveum*



Photo by Sherrie Smith, University of Arkansas
Cooperative Extension

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Watermelon Cucurbit Yellow Vine Disease-*Serratia marcescens*



Photo by Sherrie Smith, University of Arkansas
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45WP/Super Tin 80WP are labeled for control of Vein Spot. Fungicide applications should begin early spring at bud burst and continue at 2–4-week intervals, depending on the product used. Follow the label. This will also control scab.

Pecan Vein Spot-*Gnomonia nerviseda*



Photo by Sherrie Smith, University of Arkansas
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Pecan

Vein Spot of pecan, caused by *Gnomonia nerviseda*, is a common disease of pecan in Arkansas. The disease first becomes evident in late May and increases throughout the season. Lesions are always associated with veins, midribs, petioles, and rachises. The lesions are dark brown to black and visible on both sides of the leaf. With age, they become gray in the center. Vein Spot can resemble Pecan scab. However, scab lesions are often velvety or rough, while Vein Spot looks shiny or greasy. The problem caused by Vein Spot is premature defoliation. A single lesion on a petiole can cause a leaflet to drop. Susceptible varieties can lose up to 70% of their foliage. Severe foliage loss interferes with kernel development. Quilt, Enable 2F, PropiMax EC, and Orbit

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Pecan Vein Spot-*Gnomonia nerviseda*



**Photo by Sherrie Smith, University of Arkansas
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Oak

Botryosphaeria Twig Canker

Botryosphaeria Twig Canker, caused by *Botryosphaeria quercuum*, is a common disease on many shrubs, and trees, including fruit trees and oaks. The first indication of trouble is scattered dead twigs and leaves in the canopy. Initially, the bark on young twigs may darken. Older cankers become cracked, dry, and discolored. The newest leaves turn yellow, wilt, and then turn brown. If the canker girdles the twig, twig death results from the canker to the tip of the twig. The black fruiting bodies of the fungus may be observed with a hand lens. This is one of the stress diseases, which means Botryosphaeria attacks trees suffering from other problems such as drought, poor planting site, poor drainage, poor nutrition, improper pH, etc. The best control is to provide excellent growing conditions for your oak. Although oaks grow in many locations, they grow best in a fertile and moisture retentive soil. Remember to water during dry periods. Mature trees need a lot of water. The sprinkler system doesn't do the job when a mature tree needs a minimum of 40 gallons of water a day. pH plays a major role in the proper uptake of micronutrients. The proper pH depends on oak species: Northern Red oak-4.5-6.0; Post oak-5.0-7.5; Southern Red oak 5.0-7.0; Water oak-3.6-6.3; White oak-4.5-6.2; and Willow oak-3.6-6.3.



Oak Botryosphaeria Twig Canker-*Botryosphaeria quercuum*



Photo by Sherrie Smith, University of Arkansas
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Oak Botryosphaeria Twig Canker-*Botryosphaeria quercuum*

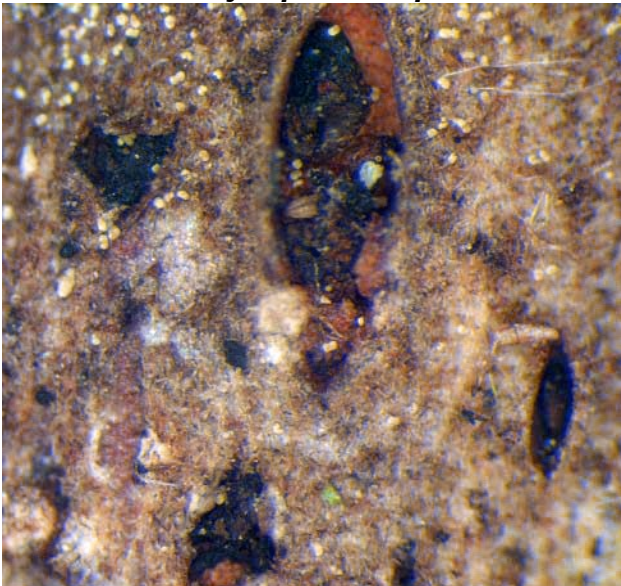


Photo by Sherrie Smith, University of Arkansas
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Oak Botryosphaeria Twig Canker ascus with ascospores- *Botryosphaeria quercuum*



Photo by Sherrie Smith, University of Arkansas
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Oak Phylloxera

Oaks in Arkansas have many pests, including Oak Phylloxera, *Phylloxera quercus*. These are tiny insects that feed on the sap of oak leaves. Phylloxera are closely related to aphids, but smaller and lacking the two rear cornicles (horns) on the abdomen. Many phylloxera species cause plant galls. Oak Phylloxera doesn't cause galls, but causes leaf puckering, leaf distortions, small necrotic yellow to brown feeding injury spots, and defoliation. Although healthy mature trees are little impacted by Phylloxera, small trees are weakened by their feeding activity and subsequent leaf loss. Vulnerable trees may be protected by the use of systemic insecticides such as Merit or Bio Advanced Insect Control for Trees and Shrubs, or insecticidal soaps or malathion.



Oak Phylloxera nymphs-*Phylloxera quercus*



Photos by Sherrie Smith, University of Arkansas Cooperative Extension

Oak Phylloxera damage-*Phylloxera quercus*



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.

"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."