



Arkansas Plant Health Clinic Newsletter

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Grapes

Pierce's Disease is caused by a small, nutritionally fastidious, gram-negative bacterium called *Xylella fastidiosa*. Known as Bacterial leaf scorch in other hosts, Pierce's Disease is a systemic disease vectored by sharpshooter leafhoppers. Muscadine and other native grapes are susceptible, but less affected than table grapes. Vines that are stressed by drought and high temperatures have the most pronounced symptoms. Chlorotic spots develop on leaf blades near the point of initial infection. The surrounding tissue begins to wither and dry, frequently in concentric rings by late summer. Leaves often drop from the vine, leaving the petiole still attached to the shoot. Adjacent leaves on the infected shoot both above and below the initial point of infection develop symptoms. Late in the season islands of green tissue surrounded by brown mature wood are noticeable on infected canes. These islands of wood that failed to mature can be seen on canes throughout the winter, or until canes are pruned or killed by frost. Only one or several canes on a vine may show symptoms initially. Eventually the entire vine becomes compromised. Budbreak in spring may be delayed as much as two weeks. New shoots grow slowly, are

stunted, and berries often dry up. The first leaves that form on new shoots are smaller than normal with tissues along leaf vines a dark green against a chlorotic background. Later leaves appear normal, but internodes are shortened. Some infected vines die almost immediately while others live for five or more years before dying. Native species may be infected but survive. The only effective control for Pierce's Disease is the use of resistant cultivars. Sticky traps in the vineyard help to determine when to spray for sharpshooters. However, insecticidal treatments to control sharpshooter insects have been inconsistent. Propagating wood may be immersed in water at 45°C for 3 hours. This kills the bacterium in the wood but does not prevent re-infection from sharpshooters carrying the bacterium. Broad spectrum tetracycline antibiotics have been to some degree effective in small vineyards but are not always feasible on a commercial scale. Infected vines should be removed during the dormant season. This reduces inoculum levels in the vineyard.

Pierce's Disease-*Xylella fastidiosa*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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Pierce's Disease-*Xylella fastidiosa*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Sumac

We received a digital sample recently asking us to identify the bladder like growths on a sumac twig. The growths were Sumac Aphid Galls caused by a species of aphid, *Melaphis rhois*. The Sumac Gall Aphid attacks several species of sumac including the Smooth sumac and the Staghorn sumac. They don't do any real harm to the plant but are more a curiosity than anything. This aphid has a complicated life cycle with summer generations producing the galls and winter generations living on mosses beneath or close to the sumac. When the summer galls break open toward fall, the females drop into the moss where they reproduce asexually, and the resulting generations survive the winter. Winged male and females arise from the moss in the spring, mate and the female flies to the sumac and lays a single egg. The egg hatches into a stem mother that initiates the formation of the gall.

The generations that arise inside the galls are produced without males (parthenogenetic reproduction). In the fall the galls split open and release the winged females that drop into the moss and start the alternating moss-sumac cycle all over again. Although control is not called for, you may remove all the galls as soon as they appear and disrupt their life cycle.

Sumac Gall Aphid-*Melaphis rhois*



Photo by Rick Wimberley, University of Arkansas Cooperative Extension



Sumac Gall Aphid Winged Adults-*Melaphis rhois*



Photo by Rick Wimberley, University of Arkansas
Cooperative Extension

Sumac Gall Aphid-*Melaphis rhois*



Photo by Rick Wimberley, University of Arkansas
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Okra

Those who like okra can't get enough of this favorite southern vegetable. Okra grows best on sandy, well drained loamy soils with a pH. of 6.5 -7.0. It has minor disease problems when adequate growing conditions are provided. However, okra is susceptible to wilt diseases caused by verticillium or fusarium species. Symptoms are yellowing and wilting of leaves and eventual collapse of the plant. When the stems are cut open, brown streaking and flecking can be seen in the vascular bundle. It is impossible to tell which pathogen is responsible for the wilting with certainty without culturing tissue in the lab. Verticillium is more common during cooler weather, and the streaking is sometimes darker brown to black in color. There is no real resistance to these diseases in okra. The only control measures are to clean up all plant debris every season, and to practice crop rotation as rotation with nonsusceptible grasses and grains may be of some value.



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Okra Verticillium Wilt-*Verticillium dahliae*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

When viewed with a magnifying glass, the small pustule-like fruiting bodies of the fungus may be observed. Treatment consists of pruning out the damaged twigs and applying fungicides. Fungicides such as Bio Advanced Garden-Disease Control for Roses, Flowers, Shrubs (tebuconazole), or Fertilome Liquid Systemic Fungicide (propiconazole), or Green Light Fung-Away Fungicide (triadimefon), or Fertilome Liquid Fungicide (chlorothalonil) may be used, among others.

Yew Needle Blight-*Gloeosporium taxicola*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Yew

Yews are attractive, soft needled evergreen shrubs that are planted extensively as specimen plants and as hedges in landscapes. Some species grow quite large, but they tolerate pruning very well. Yews tolerate a range of growing conditions as long as they are on good soil with excellent drainage. In the south yews prefer afternoon shade. When their requirements are met, yews present few problems. However, we sometimes will receive a sample of yew with a needle blight caused by *Gloeosporium taxicola*. This fungus causes browning of needles, followed by needle cast.

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Yew Needle Blight-*Gloeosporium taxicola*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Yew Needle Blight-*Gloeosporium taxicola*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Yew Needle Blight Spores-*Gloeosporium taxicola*



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Fern

Fern scales, *Pinnaspis aspidistrae*, belong to the group of scale insects known as armored scales. The females have oyster shell-shaped armor that is flat, or pear shaped and light brown in color. Crawlers are a paler brown to yellow with red eyes. Male fern scales have armor that is white felted, three-ridged. Adult males are tiny, two-winged, gnat-like insects. The oval eggs are laid under the female armor. Scale insects are sap feeders. They use their piercing mouthparts to access the contents of plant cells. Symptoms are mottling, yellowing, browning, and when infestations are severe, plant death. Ferns are very sensitive to insecticides. Two treatments 2 weeks apart of fine horticultural oil give good control without damaging the fern.

Fern Scale-*Pinnaspis aspidistrae*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Fern Scale damage- *Pinnaspis aspidistrae*



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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