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Southern Plant Diagnostic Network
Issue 21, July 22, 2019

Arkansas Plant Health Clinic Newsletter

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Cucumber

Anthracnose of cucurbits is found wherever cucurbits are grown. Cucumber, watermelon, squash, and gourds are all susceptible. *Colletotrichum obiculare*, synonym *C. lagenaria* is the causative agent of this fungal disease. All parts of the plant may be infected, including leaves, petioles, stems, and fruits. Lesions begin as yellowish water-soaked spots that turn brown to black. The spots enlarge and dry out. The centers of older lesions fall out leaving a shot hole effect. Infected fruit have sunken circular black spots of different sizes. Crop rotation and destruction of old vines go a long way toward controlling this problem. Fungicide applications of Topsin, or Quadris 2.08 SC, or Cabrio 20 EC, or Bravo Weatherstick, or Dithane, or Aprovia Top 1.62 EC, or Inspire Super 2.82 SC, or Luna Experience 3.3 F, or Luna Sensation 1.67 F, or Switch 62.5 WG, or Quadris Top 1.67 SC or Pristine 38 WG, or Tanos 50 WP, or Quadris Opti, or Gavel 75 DF, or Orondis Opti 3.37 SC, or Orondis Ultra 2.33 SC. Homeowners may use Fertilome Broad Spectrum Lawn and Garden Fungicide, (chlorothalonil), or Hi-Yield Vegetable, Flower, Fruit, and Ornamental Fungicide,(chlorothalonil) or Ortho Garden Disease Control, (chlorothalonil), or Garden Tech Daconil Fungicide,(chlorothalonil), or Bonide Fung-onil Multipurpose Fungicide, (chlorothalonil).

Cucumber Anthracnose- *Colletotrichum obiculare*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Cucumber Powdery Mildew

Powdery Mildew of cucurbits is another yield reducing fungal disease commonly found in Arkansas. The causal agent is *Podosphaera* (sect. *Sphaerotheca xanthii* syn. *Sphaerotheca fusca* and *S. fuliginea*), and *Golovinomyces cichoracearum* syn. *Erysiphe cichoracearum.* Symptoms are a white, powdery fungal growth on both leaf surfaces, petioles, and stems. The infected leaves shrivel and die prematurely, thus reducing yield. The most important management tool is the use of resistant cultivars. Fungicides remain an important, but resistance has developed in some fields. There are many products for commercial growers, including Ralley 40 WSP, or Velum

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Prime, or Fontelis 1.67 SC, or Torino 0.85, or Gatten, or Inspire Super 2.82 SC, or Luna Experience 3.3F, or Switch 62.5 WG, or Quadris Top 1.67 SC, or Pristine 38 WG, or Quadris Opti 1.0 SC, or Aprovia Top 1.62 EC, or Orondis Opti 3.37 SC. Homeowners may use Fertilome Broad Spectrum Lawn and Garden Fungicide, (chlorothalonil), or Hi-Yield Vegetable, Flower, Fruit, and Ornamental Fungicide, (chlorothalonil) or Ortho 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).

Cucumber Powdery Mildew-

Podosphaera* (sect. *Sphaerotheca xanthii* syn. *Sphaerotheca fusca

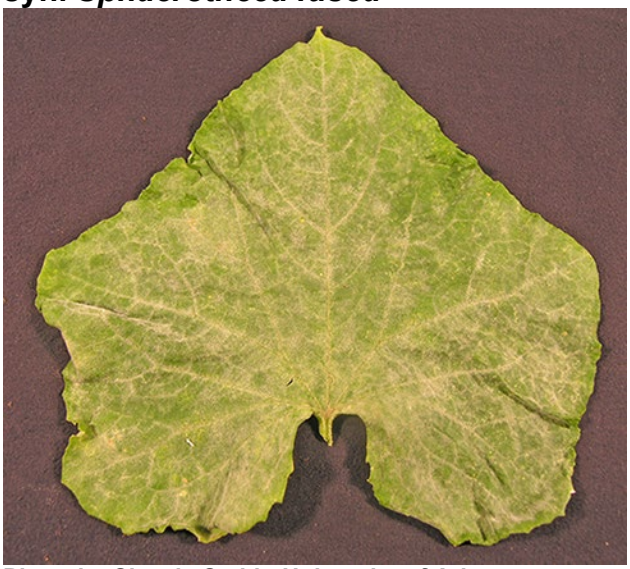

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Dogwood

Dogwood Anthracnose, caused by the fungus *Discula destructiva*, is a different disease than Dogwood Spot Anthracnose, caused by the fungus Elsinoe corni discussed in a previous newsletter. Dogwood anthracnose is favored by cool, wet spring and fall weather, but can occur throughout the growing season. Symptoms begin in the lower crown and progress up the tree. Leaf lesions start as tan spots with purple rims but can rapidly enlarge to large leaf blotches. Leaves that are completely blighted don't fall off during autumn. The fruiting bodies of the fungus may be observed with a hand lens on the underside of infected leaves. Infections progress through petioles into shoots and the dead petioles may form a crook that resembles fire blight. Cankers develop, usually at leaf scar sites, girdling and killing the shoot, while cankers occurring on the trunk can eventually kill the tree. Water sprouts often form on the trunk and branches where twig and branch cankers are located. These water sprouts are extremely vulnerable to infection. In certain situations, it only takes 2 or 3 years for a badly infected tree to be killed. Fortunately, good management practices can control Dogwood anthracnose in the landscape, but these practices must be consistently followed to protect trees for the long term, since native dogwoods and neighboring trees can be sources of infection. Control measures are multi-pronged. Carefully prune out all diseased, dying, and dead twigs and limbs. Spray all plants with a systemic foliar fungicide labeled to control dogwood anthracnose (examples include fungicides

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containing propiconazole (Banner Maxx) or tebuconazole (Bio Advanced Disease Control Products) at bud break in the spring. Good coverage of the entire tree with the spray is very important.

About two weeks after the systemic spray, apply a protectant fungicide labeled to control dogwood anthracnose containing chlorothalonil (like Daconil products), thiophanate-methyl (Cleary's 3336 for example) or a product containing both like Spectro 90 WDG. Again, complete coverage of the entire tree is essential. While commercial landscape companies have power sprayers that can effectively spray trees, most dogwoods are small enough to allow the use of trombone tree sprayers for homeowner use. An example is the Trombone® Model 61224 sprayer by Hudson Sprayer Company http://www.hdhudson.com/consumer-catalog.html#61224

In addition to pruning and fungicides, avoid overhead irrigation if possible. If overhead irrigation must be used, water in the early morning so that the tree can dry out before night. It is very important that dogwoods be watered well during our hot summers to prevent drought stress, which may further encourage the disease.

Since we do not currently know how widespread or damaging the disease is in the state, suspect samples should be collected and given to the local Cooperative Extension Service office for submission to the Plant Health Clinic for diagnosis.

Resistant varieties and types of dogwoods are available and should be considered for new plantings or to replace diseased trees. The Appalachian Spring series and most Kousa dogwoods are resistant.

Dogwood Anthracnose-*Discula destructiva*

Photo by Jim Robbins, University of Arkansas Cooperative Extension

Dogwood Anthracnose-*Discula destructiva*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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Dogwood Anthracnose Epicormic Growth-*Discula destructiva*

Photo by Lawn Doctor of West Little Rock

Oak

Although Tubakia leaf spot of oak, caused by *Tubakia dryina* (*Actinopelte dryina*), is often confused with Oak anthracnose, it is not usually as destructive a disease. Anthracnose symptoms begin in the spring. Symptoms of Tubakia become noticeable during mid-to-late summer. Small to large tan to reddish-brown round spots develop on the leaves. The small black fruiting bodies of the fungus can be seen with a hand lens. When the lesions develop on the veins collapse of the leaf tissue occurs beyond the point of the vein necrosis. Severe infections can cause complete defoliation, although this is unusual. Fortunately, this usually occurs so late in the season that tree health is little affected. Rake up fallen leaves and dispose of them. Fungicide applications are not normally recommended. Trees that suffer from stress are more susceptible.

Oak Leaf Spot-*Tubakia dryina*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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Oak Leaf Spot Lesions with Pycnidia-*Tubakia dryina*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Oak Leaf Spot Spores-*Tubakia dryina*

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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