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Arkansas Plant Health Clinic Newsletter

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Azalea

We are approaching the time of year that the Clinic receives samples of azalea leaves with thickened, fleshy, distorted areas. This disease is known as Azalea Leaf gall, caused by *Exobasidium vaccinii*. Azalea Leaf gall affects new growth only, especially during cool, wet springs. Initially the galls are pink to white, but eventually become brown with age. Only new leaves are susceptible. Older leaves do not become infected. Azalea Leaf gall is an unattractive nuisance but does not kill the plant. Blueberries and camellias are also susceptible to leaf galls caused by *Exobasidium vaccinii*. Good sanitation practices are usually enough to control Azalea Leaf Gall. Leaves with galls should be removed from the planting as soon as they appear. For badly infected plantings, start chemical control on azaleas with a history of Leaf gall at the first sign of new growth in the spring. Products containing mancozeb, or triadimefon, or myclobutanil, or chlorothalonil may be applied at bud break and at 10–14-day intervals until new leaves harden. Homeowners may use Fertilome Broad Spectrum Lawn and Garden Fungicide, (chlorothalonil), or Hi-Yield Vegetable, Flower, Fruit, and Ornamental Fungicide, (chlorothalonil) or Ortho Maxx

Garden Disease Control, (chlorothalonil), or Garden Tech Daconil Fungicide, (chlorothalonil), or Bonide Fung-onil Multipurpose Fungicide, (chlorothalonil), or Spectracide Immunox Plus, (myclobutanil & permethrin), or Bonide Rose Rx Systemic Drench, (tebuconazole), or Bio Advanced Garden-Disease Control for Roses, Flowers, Shrubs, (tebuconazole), or Bio Advanced Garden-All in-One Fungicide/Insecticide/Fertilizer, (tebuconazole & imidacloprid), or Fertilome 2-N-1 Systemic Fungicide, (tebuconazole & imidacloprid), or Bonide Infuse Systemic for Turf and Ornamentals, (thiophanate-methyl), or Ortho Rose and Flower Insect and Disease Control, (triticonazole & acetamiprid).

Azalea Leaf gall-*Exobasidium vaccinii*



Photo by Sherrie Smith, formerly University of Arkansas Cooperative Extension

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Azalea Leaf gall-*Exobasidium vacinii*



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Boxwood

Boxwood is widely used in landscapes. They prefer a partially shaded location, but will grow in full sun, are evergreen, and can be sheared to the desired shape and size. Soil fertility is not critical if soil pH is 6.5-7.0. They are intolerant of heavy, wet soils. The most common damage we see on boxwood is winter damage caused by

exposure to winter sun and wind. The most common disease problem found on samples submitted to the Plant Health Clinic is *Pseudonectria* canker/*Volutella* leaf and stem blight, caused by *Pseudonectria rousseiana*, imperfect state *Volutella buxi*. In the spring, certain branches do not put on new growth. Leaves on infected branches become tan-colored, lie close to the stem, and turn upward. Bark at the base of the infected stem has gray to black discoloration under the bark. Under humid conditions, pink to salmon orange spore-producing masses called sporodochia can be seen covering stems and leaves. Spores resemble *Phomopsis* spores, are clear-colored and ellipsoid. Control consists of removing infected branches as soon as they are seen, cleaning up all leaves caught within the shrub and on the ground, and the application of copper-based fungicides during the dormant season before new growth starts in the spring. A fungicide containing chlorothalonil may be used during the growing season. It is very helpful to maintain a proper water regimen during the entire year to reduce stress. Boxwoods need watered during the winter if it is a dry winter. This is true of all evergreens. Another fungus frequently seen on boxwood is *Macrophoma candollei*. Numerous black fruiting bodies can be seen as dark specks on dead leaves. Spores are 36-40µm x 10-11.5µm, clear colored and densely granular. This is a secondary colonizer of dead leaves, and its presence indicates that other diseases or environmental actors stress the plant. No controls for *Macrophoma* are recommended; prune out the dead twigs.



Boxwood Volutella Blight **Spores-*Volutella buxi***



Photo by Sherrie Smith, formerly University of Arkansas Cooperative Extension

Boxwood Volutella Blight **Orange fruiting bodies-*Volutella buxi***



Photo by Sherrie Smith, formerly University of Arkansas Cooperative Extension

Boxwood Volutella Blight **Spores-*Volutella buxi***

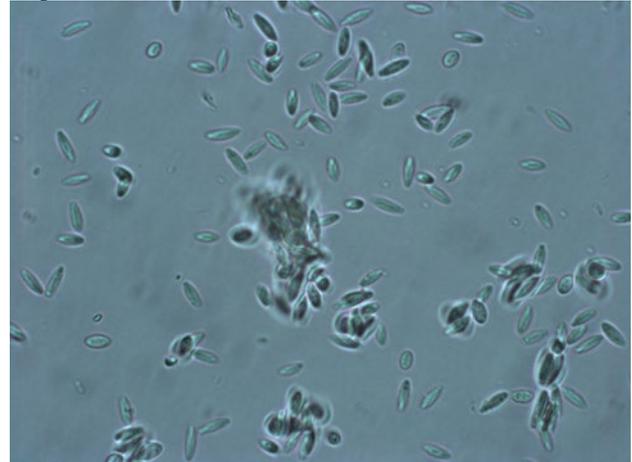


Photo by Sherrie Smith, formerly University of Arkansas Cooperative Extension

Boxwood Volutella Blight- ***Macrophoma candollei***



Photo by Sherrie Smith, formerly University of Arkansas Cooperative Extension



Boxwood *Macrophoma* Spores- *Macrophoma candollei*



Photo by Sherrie Smith, formerly University of Arkansas Cooperative Extension

Boxwood (the new blight)

We knew it was only a matter of time until Arkansas had its first confirmed case of the new Boxwood Blight. This is a devastating fungal disease, caused by *Calonectria pseudonaviculata* (previously called *Cylindrocladium pseudonaviculatum* or *Cylindrocladium buxicola*). The disease was first identified in the United States in 2011. Since

that time 21 states have confirmed Boxwood Blight.

All aboveground portions of the shrub may be infected. Symptoms begin as brown somewhat circular leaf spots that coalesce to form brown blotches. White cottony sporulation of the boxwood blight fungus appears on the undersides of the leaves. Narrow black streaks (cankers) develop on green stems. The disease often starts at the bottom of the plant and moves upward. Rapid defoliation occurs. Repeated defoliation and dieback from stem cankers can kill young plants. Mature plants in landscapes lose their ornamental value due to the continual defoliation.

Sanitation is critical for management. All affected plants and plant debris should be bagged and removed from the planting or burned if permitted in your area. Do not try to compost as the fungus that causes this disease can persist in the soil for five years or more. Do not replant boxwood in that area as they are likely to also become infected. **Fungicides will not cure plants already infected but are effective at protecting plants from becoming infected.** You should apply fungicides when temperatures exceed 60°F and rainfall is expected. Effective products include a rotation of Daconil® (chlorothalonil) or Medallion® (fludioxonil). Other fungicides include Heritage® (azoxystrobin), Pageant® (pyraclostrobin and boscalid), Compass® (trifloxystrobin), Torque® (tebuconazole), and Cleary's 3336® (thiophanate methyl). You will need to apply fungicides every seven to 14 days to protect susceptible boxwood. More



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resistant varieties require fewer applications. 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), or Spectracide Immunox Plus, (myclobutanil & permethrin), or BioAdvanced Garden-Disease Control for Roses, Flowers, Shrubs, (tebuconazole), or Bio Advanced Garden-All-in-One Fungicide/Insecticide/Fertilizer, (tebuconazole & imidacloprid), or Bonide Infuse Systemic for Turf and Ornamentals, (thiophanate-methyl), or Ortho Rose and Flower Insect and Disease Control, (triticonazole & acetamiprid). See chart for resistant cultivars.

Boxwood Blight Stem Lesions- *Calonectria pseudonaviculata*



Photo by Sherrie Smith, formerly University of Arkansas Cooperative Extension

Boxwood Blight Leaf Lesions- *Calonectria pseudonaviculata*



Photo by Sherrie Smith, formerly University of Arkansas Cooperative Extension

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Boxwood Blight Sporulation- *Calonectria pseudonaviculata*

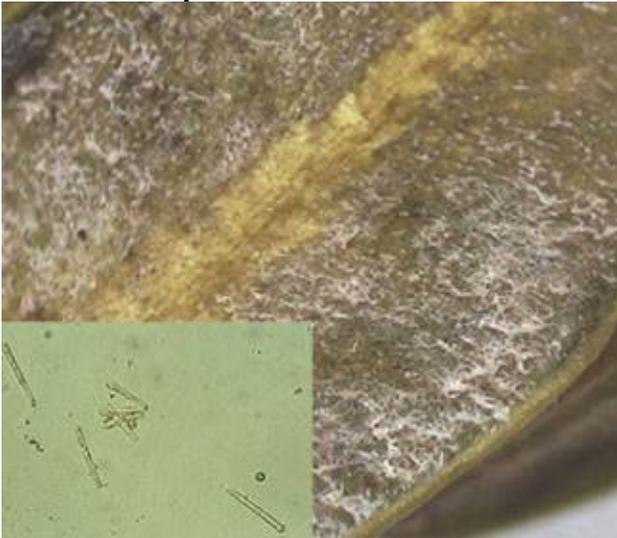


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This bulletin from the Cooperative Extension Plant Health Clinic (Plant Disease Clinic) is an electronic update about diseases and other problems observed in our lab each month. Input from everybody interested in plants is welcome and appreciated.

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Boxwood Blight Cultivar Susceptibility

Highly Susceptible	<i>B. sempervirens</i> 'Suffruticosa' <i>B. sinica</i> var. <i>insularis</i> 'Justin Brouwers'
Susceptible	<i>B. microphylla</i> var. <i>japonica</i> 'Morris Dwarf' <i>B. microphylla</i> var. <i>japonica</i> 'Morris Midget' <i>B. sempervirens</i> 'Jensen' <i>B. sempervirens</i> 'Marginata' <i>Buxus</i> X 'Glencoe' (Chicagoland Green) <i>B. sempervirens</i> 'American' <i>B. sempervirens</i> 'Elegantissima'
Moderately Susceptible	<i>Buxus</i> X 'Green Mound' <i>Buxus</i> X 'Conroe' (Gordo) <i>B. microphylla</i> 'Green Pillow' <i>B. microphylla</i> 'Grace Hendrick Phillips' <i>B. microphylla</i> 'Jim Stauffer' <i>Buxus</i> X 'Green Mountain'
Moderately Resistant	<i>B. microphylla</i> 'Winter Gem' <i>B. sempervirens</i> 'Dee Runk' <i>B. sempervirens</i> 'Fastigiata' <i>Buxus</i> 'Green Gem' <i>B. microphylla</i> 'John Baldwin'
Most Resistant (recommended for new plantings)	<i>B. microphylla</i> 'Golden Dream' <i>B. harlandii</i> <i>B. sinica</i> var. <i>insularis</i> 'Nana' <i>B. microphylla</i> var. <i>japonica</i> 'Green Beauty'

<https://kentuckypestnews.wordpress.com/2021/04/13/avoid-introduction-of-boxwood-blight-into-the-landscape-2/>

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