APRIL PLANT DISEASES FROM THE AUBURN
PLANT DIAGNOSTIC LAB

APRIL PLANT DISEASES FROM THE BIRMINGHAM
PLANT DIAGNOSTIC LAB

INSECT REPORT

DISEASE POSSIBILITIES FOR JUNE

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Auburn Plant Disease Report, April (D. Johnson)

The Auburn Plant Diagnostic Lab received 91 plant samples in April, 32 of those being turfgrass samples. We found Brown Patch on 19 turf samples: 12 on centipede, 3 on zoysia, 3 on bermudagrass, and one on St. Augustine. Fire Blight was found on a pear and an Indian hawthorn.

Three cultivars of hosta were diagnosed with Hosta Virus X (HVX). This disease was first reported in 1996 and has already had a significant impact on the hosta industry. HVX has no known vector; it is spread primarily through propagation of infected plants and by mechanical damage that occurs during handling. There is a wide
range of symptoms among the thousands of hosta cultivars. They include puckering, twisted leaves, necrosis, stunting, an “ink-bleed” pattern, and various leaf spotting. A diagnostic test specific for HVX is necessary to confirm this virus. Infected plants must be destroyed and not composted. All tools used should be disinfected between plants with a 10 percent solution of bleach to prevent transmission of this disease.

**Wirestem** was diagnosed on both cabbage and cauliflower. Other crucifers are susceptible to this disease as well. The causal fungus, *Rhizoctonia solani*, is present in all field soil and is most likely to be problematic in overly moist soil. Initially, a dark, water-soaked stem lesion appears near the soil line. The lesion eventually girdles the stem, giving it a wiry appearance. Plants are weakened, produce small heads, and may wilt and die.

**Cedar-Apple Rust** was found on a cedar from Cleburne County. The telial stage of this rust is obvious on cedars and junipers this time of year. Look for twig galls 1-3 inches in diameter with bright orange gelatinous horns. Although the disease only causes slight cosmetic damage to cedar and juniper hosts, the spores travel from these hosts to apple and crabapple upon which more severe damage is caused. Bright yellow leaf spots will be present on infected apple and crabapple later in the summer.

**Hollyhock Rust** was found on hollyhock in Houston and Montgomery Counties. It is prevalent at this time of year and tends to become more severe through the summer. This rust is not known to have an alternate host but this spore stage also infects hibiscus and weed mallow. Orange-brown pustules on leaf undersides are characteristic. Treatment should begin at the onset of symptoms. See below for treatment strategies.

**Table 1.** April Plant Diseases Received at the Auburn Plant Diagnostic Lab

<table>
<thead>
<tr>
<th>Plant</th>
<th>Disease</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aucuba</td>
<td>Botryosphaeria Dieback</td>
<td>Lee</td>
</tr>
<tr>
<td>Bermudagrass</td>
<td>Bermudagrass Decline</td>
<td>Montgomery (3)</td>
</tr>
<tr>
<td></td>
<td>Brown Patch</td>
<td>Montgomery, (3)</td>
</tr>
<tr>
<td></td>
<td>Rust</td>
<td>Montgomery</td>
</tr>
<tr>
<td>Blueberry</td>
<td>Phytophthora Root Rot</td>
<td>*</td>
</tr>
<tr>
<td>Boxwood, American</td>
<td>Armillaria Root Rot</td>
<td>Lee</td>
</tr>
<tr>
<td>Broccoli</td>
<td>Rhizoctonia Root Rot</td>
<td>*</td>
</tr>
<tr>
<td>Cabbage</td>
<td>Wirestem</td>
<td>*</td>
</tr>
<tr>
<td>Cauliflower</td>
<td>Wirestem</td>
<td>*</td>
</tr>
<tr>
<td>Cedar</td>
<td>Cedar-Apple Rust</td>
<td>Cleburne</td>
</tr>
<tr>
<td>Centipede</td>
<td>Bipolaris Crown Rot</td>
<td>Autauga, Montgomery</td>
</tr>
<tr>
<td></td>
<td>Brown Patch</td>
<td>Autauga, Houston,</td>
</tr>
<tr>
<td>Plant</td>
<td>Disease</td>
<td>Location</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Crape Myrtle</td>
<td>Bacterial Leaf Spot</td>
<td>Mobile</td>
</tr>
<tr>
<td>Elm</td>
<td>Canker Disease</td>
<td>Baldwin</td>
</tr>
<tr>
<td>Fatsia</td>
<td>Botryosphaeria Canker</td>
<td>Lee</td>
</tr>
<tr>
<td>Hollyhock</td>
<td>Rust</td>
<td>Houston, Montgomery</td>
</tr>
<tr>
<td>Hosta</td>
<td>Hosta Virus X</td>
<td>*</td>
</tr>
<tr>
<td>Hydrangea, Oakleaf</td>
<td>Fusarium Crown Rot</td>
<td>Mobile</td>
</tr>
<tr>
<td>Indian Hawthorn</td>
<td>Fire Blight</td>
<td>*</td>
</tr>
<tr>
<td>Juniper</td>
<td>Phomopsis Tip Blight</td>
<td>Coffee</td>
</tr>
<tr>
<td>Maple</td>
<td>Anthracnose</td>
<td>Lee</td>
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<tr>
<td>Mondograss</td>
<td>Anthracnose</td>
<td>Escambia</td>
</tr>
<tr>
<td></td>
<td>Pythium Root Rot</td>
<td>Mobile</td>
</tr>
<tr>
<td>Oats</td>
<td>Helminthosporium Leaf Spot</td>
<td>Baldwin</td>
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<tr>
<td></td>
<td>Rust</td>
<td>Baldwin</td>
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<tr>
<td>Peach</td>
<td>Gummosis</td>
<td>Sumter</td>
</tr>
<tr>
<td></td>
<td>Sooty Mold</td>
<td>Sumter</td>
</tr>
<tr>
<td>Pear</td>
<td>Fire Blight</td>
<td>Henry</td>
</tr>
<tr>
<td>Rose</td>
<td>Cercospora Leaf Spot</td>
<td>*</td>
</tr>
<tr>
<td>St. Augustinegrass</td>
<td>Brown Patch</td>
<td>Montgomery</td>
</tr>
<tr>
<td></td>
<td>Exserohilum Sheath Blight/Leaf Spot</td>
<td>Autauga</td>
</tr>
<tr>
<td></td>
<td>Take-All</td>
<td>*(1), Calhoun, Montgomery (3)</td>
</tr>
<tr>
<td>Strawberry</td>
<td>Phytophthora Root Rot</td>
<td>*</td>
</tr>
<tr>
<td>Tomato</td>
<td>Bacterial Leaf Spot</td>
<td>Elmore</td>
</tr>
<tr>
<td></td>
<td>Bacterial Wilt</td>
<td>Geneva, Mobile</td>
</tr>
<tr>
<td>Wheat</td>
<td>Barley Yellow Dwarf Virus</td>
<td>*(2)</td>
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<tr>
<td></td>
<td>Black Chaff</td>
<td>Morgan</td>
</tr>
<tr>
<td></td>
<td>Loose Smut</td>
<td>DeKalb</td>
</tr>
<tr>
<td>Zoysia</td>
<td>Brown Patch</td>
<td>*(1), Jefferson, Lee</td>
</tr>
<tr>
<td></td>
<td>Spring Dead Spot</td>
<td>Montgomery</td>
</tr>
</tbody>
</table>

* Counties are not reported for commercial samples.
We received 82 samples during the month of April. Both rainfall and temperatures were above average during April. Some of the more common problems were azalea and camellia leaf gall, granulate ambrosia beetle (formerly known as the Asian ambrosia beetle) on flowering cherry and trident maple, and large patch on zoysiagrass.

**Azalea and Camellia leaf gall** has been a common problem this spring. As new leaves develop they are thickened, fleshy and off-color. The disease rarely causes enough damage to warrant fungicide applications for control. Remove galls by hand and destroy before the white powdery growth appears. If the galls are not removed and destroyed the disease could become more severe next spring. Avoid planting camellias and azaleas in deep shade or protected locations, where air circulation is poor. See the following publication for more information.


Probably the most interesting sample was the presence of orange slime on the bark of a river birch. In fact, we saw it twice this spring. From a distance the tree appeared to be bleeding orange goo from the trunk. Closer examination showed that the sap was leaking from a recent wound. River birch is one of those trees that tend to ‘bleed’ in spring from recent pruning cuts and other wounds. The orange slime is not a disease but saprophytic fungi (*Fusarium* and yeast) growing on the nutrient rich plant sap. For a good picture of what this looks like, see the following web site.


**Table 2.** 2011 April Problems Seen In the Birmingham Plant Diagnostic Lab

<table>
<thead>
<tr>
<th>Plant</th>
<th>Problem</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anise, Florida</td>
<td>Black Twig Borer</td>
<td>Jefferson</td>
</tr>
<tr>
<td>Apple</td>
<td>Frogeye Leaf Spot</td>
<td>Jefferson</td>
</tr>
<tr>
<td>Azalea</td>
<td>Phomopsis Dieback</td>
<td>Jefferson</td>
</tr>
<tr>
<td></td>
<td>Azalea Mite</td>
<td>Jefferson</td>
</tr>
<tr>
<td></td>
<td>Azalea Leaf Gall</td>
<td>Jefferson</td>
</tr>
<tr>
<td>Birch, River</td>
<td>Spiny Witch-hazel Gall Aphid</td>
<td>Jefferson</td>
</tr>
<tr>
<td></td>
<td>Orange Slime</td>
<td>Jefferson</td>
</tr>
<tr>
<td>Camellia, Sasanqua</td>
<td>Canker/Dieback (<em>Colletotrichium</em>)</td>
<td>Jefferson</td>
</tr>
<tr>
<td></td>
<td>Exobasidium Leaf Gall</td>
<td>Jefferson</td>
</tr>
<tr>
<td>Cherry, Japanese Flowering</td>
<td>Granulate Ambrosia Beetle</td>
<td>Shelby</td>
</tr>
<tr>
<td>Clematis</td>
<td>Clematis Wilt</td>
<td>Jefferson</td>
</tr>
<tr>
<td>Plant Type</td>
<td>Disease/Problem Description</td>
<td>County</td>
</tr>
<tr>
<td>--------------------</td>
<td>----------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Cypress, Leyland</td>
<td>Tip Blight (<em>Pestalotia</em>) Secondary</td>
<td>Etowah</td>
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<tr>
<td></td>
<td>Seiridium Canker</td>
<td>Jefferson</td>
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<tr>
<td>Cypress, Weeping</td>
<td>Spruce Spider Mites</td>
<td>Jefferson</td>
</tr>
<tr>
<td>Gardenia</td>
<td>Citrus Whitefly</td>
<td>Jefferson</td>
</tr>
<tr>
<td></td>
<td>Sooty Mold</td>
<td>Jefferson</td>
</tr>
<tr>
<td>Holly, China Boy</td>
<td>Botrytis Blight</td>
<td>*</td>
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<tr>
<td>Holly, Japanese</td>
<td>Black Root Rot</td>
<td>Tuscaloosa</td>
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<tr>
<td>Ivy, Boston</td>
<td>Guignadia Leaf Spot</td>
<td>Jefferson</td>
</tr>
<tr>
<td>Juniper</td>
<td>Spruce Spider Mite</td>
<td>Chilton</td>
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<tr>
<td>Magnolia, Southern</td>
<td>Anthracnose (<em>Colletotrichum</em>)</td>
<td>Jefferson</td>
</tr>
<tr>
<td>Maple, Trident</td>
<td>Granulate Ambrosia Beetle</td>
<td>Jefferson</td>
</tr>
<tr>
<td>Mondograss</td>
<td>Fusarium Crown Rot</td>
<td>Shelby</td>
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<tr>
<td>Oak, Post</td>
<td>Jumping Oak Leaf Gall</td>
<td>Jefferson</td>
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<tr>
<td>Oak, White</td>
<td>Anthracnose</td>
<td>Jefferson</td>
</tr>
<tr>
<td>Oak, Willow</td>
<td>Lecanum Scale</td>
<td>Jefferson</td>
</tr>
<tr>
<td>Photinia</td>
<td>Entomosporium Leaf Spot</td>
<td>Shelby</td>
</tr>
<tr>
<td>Pittosporum</td>
<td>Cottony Cushion Scale</td>
<td>Shelby</td>
</tr>
<tr>
<td>Rhododendron</td>
<td>Botryosphaeria Dieback</td>
<td>Jefferson</td>
</tr>
<tr>
<td>Rose</td>
<td>Black Spot</td>
<td>Jefferson</td>
</tr>
<tr>
<td></td>
<td>Botrytis Blight</td>
<td>Jefferson</td>
</tr>
<tr>
<td></td>
<td>Rose Rosette Disease</td>
<td>Jefferson</td>
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<tr>
<td></td>
<td>Roseslug (Rose Sawfly)</td>
<td>Jefferson (2)</td>
</tr>
<tr>
<td>Tomato</td>
<td>Roundup Damage</td>
<td>Jefferson</td>
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<tr>
<td>Violet, African</td>
<td>Mealybugs</td>
<td>Jefferson</td>
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<tr>
<td>Zoysiagrass</td>
<td>Ground Pearls</td>
<td>Jefferson</td>
</tr>
<tr>
<td></td>
<td>Large Patch (<em>Rhizoctonia</em>)</td>
<td>Jefferson, Shelby</td>
</tr>
</tbody>
</table>

* Counties are not reported for commercial samples.
Table 3. April Insect Report (C. Ray)

<table>
<thead>
<tr>
<th>County</th>
<th>Host</th>
<th>Category</th>
<th>Identification</th>
<th>Scientific Name</th>
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</thead>
<tbody>
<tr>
<td>Jefferson</td>
<td>Human</td>
<td>Medical</td>
<td>Male Lone Star Tick</td>
<td><em>Amblyomma americanum</em></td>
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<tr>
<td>Marnego</td>
<td>Human clothing</td>
<td>Medical</td>
<td>Male Black Legged Tick</td>
<td><em>Ixodes scapularis</em></td>
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<tr>
<td>Henry</td>
<td>Sasanqua Camellia</td>
<td>Ornamental</td>
<td>Southern Red Spider Mites, Purple Camellia Mites</td>
<td>*Oligonychus ilicis &amp; <em>Calacanus carinatus</em></td>
</tr>
<tr>
<td>George, MS</td>
<td>Indian Hawthorn</td>
<td>Ornamental</td>
<td>A spider mite</td>
<td><em>Tetranychus sp.</em></td>
</tr>
<tr>
<td>Jefferson</td>
<td>A flower</td>
<td>Ornamental</td>
<td>A dance fly</td>
<td>Empididae</td>
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<tr>
<td>Jefferson</td>
<td>A flower</td>
<td>Ornamental</td>
<td>A long-horned wood boring beetle</td>
<td>Cerambycidae</td>
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<tr>
<td>Montgomery</td>
<td>Home</td>
<td>Household - Misc.</td>
<td>May Beetle</td>
<td><em>Phyllophaga sp.</em></td>
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<tr>
<td>Dale</td>
<td>Information not provided</td>
<td>Structural</td>
<td>Eastern Subterranean Termites</td>
<td><em>Reticulitermes flavipes</em></td>
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<tr>
<td>Clay</td>
<td>Blueberry</td>
<td>Fruits &amp; Nuts</td>
<td>Eastern Flower Thrips</td>
<td><em>Frankliniella tritici</em></td>
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<tr>
<td>Limestone</td>
<td>Church</td>
<td>Household - Misc.</td>
<td>A tree bug</td>
<td>Pentatomidae</td>
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<tr>
<td>Shelby</td>
<td>Home</td>
<td>Household - Misc.</td>
<td>Eastern Subterranean Termite</td>
<td><em>Reticulitermes flavipes</em></td>
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<tr>
<td>Crenshaw</td>
<td>Home</td>
<td>Household - Misc.</td>
<td>Varied Carpet Beetle</td>
<td><em>Anthrenus verbasci</em></td>
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<tr>
<td>Coffee</td>
<td>Spartan Juniper</td>
<td>Ornamental</td>
<td>Weevil feeding damage</td>
<td>Pales or pitch-eating weevil</td>
</tr>
<tr>
<td>Jefferson</td>
<td>Italian Cypress</td>
<td>Ornamental</td>
<td>Dictyopharidae - nymphs</td>
<td>Dictyopharidae</td>
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<tr>
<td>Jefferson</td>
<td>Lawn</td>
<td>Turfgrass</td>
<td>Ground Bees</td>
<td>Andrenidae</td>
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<td>Calhoun</td>
<td>Home</td>
<td>Household - Misc.</td>
<td>Eastern Subterranean Termites</td>
<td><em>Reticulitermes flavipes</em></td>
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<tr>
<td>Conecuh</td>
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<td>Misc.</td>
<td>An underwing moth caterpillar</td>
<td><em>Catocala sp.</em></td>
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<tr>
<td>Calhoun</td>
<td>Home</td>
<td>Household - Misc.</td>
<td>Flying Argentine Ants</td>
<td><em>Linepithema humilis</em></td>
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<tr>
<td>Fayette</td>
<td>Information not provided</td>
<td>Misc.</td>
<td>Velvet Ant</td>
<td>Mutillidae</td>
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</tbody>
</table>
Lee                    Red Maple     Ornamental        Maple eyespot gall midge    Acericecis ocellaris
Montgomery             Citrus        Fruits & Nuts      Spider mite damage       Tetranychidae
Lee                    Corn          Row Crops            Sugar Cane Beetle        Eutheola humilis
Montgomery             St. Augustine Turfgrass      Chinch Bugs            Blissus sp.
Russell                Broccoli      Row Crops            Cutworm Damage           Noctuidae
Russell                Cauliflower  Row Crops            Cutworm Damage           Noctuidae
Russell                Cabbage       Row Crops            Cutworm Damage           Noctuidae

**Disease Possibilities for June** (D. Johnson)

**Southern Blight** may continue to affect a wide range of vegetable, legume, and ornamental hosts. Look for sunken stem lesions and white mycelial mats with hard, round, brown spores on the plant as well as surrounding soil. Sanitation and soil solarization should help control this problem.

**Powdery Mildew** is another disease with a wide host range. Some plants may have only mild infections whereas others are severely affected. It is most common in hot, dry conditions and favors crowded plantings. Symptoms include a light-colored powdery dusting or felt-like patches on leaf surfaces or other plant parts. Leaves may become dry, crusty, distorted, or withered and may fall prematurely. See the Alabama Pest Management Handbook for individual control measures.

Growers should begin to scout for **Asian Soybean Rust** on soybean as well as kudzu, Florida beggarweed, and jicamba. The Auburn University Soybean Rust Hotline will be up and running this month. Growers can call the Hotline at 800-774-2847 to get timely information about the rust. See ANR-1310 for symptom descriptions and management strategies.

Our lab has always seen a lot of **Take-All** and **Gray Leaf Spot** on St. Augustine in June. See below for symptoms and control measures.

**Botrytis Blight** is a very common and difficult problem of greenhouse crops and also occurs outdoors and on a wide host range. In recent years, this lab has found it on blackberry, blueberry, pomegranate, raspberry, strawberry, gourd, lettuce, okra, onion, azalea, crape myrtle, holly, magnolia, rhododendron, rose, rosemary, begonia, geranium, Gerber daisy, heuchera, lavender, marigold, peony, petunia, and verbena. Symptoms include damping-off of seedlings, leaf and petal spots, stem cankers, and crown rot. Affected plant parts may be covered with fuzzy, gray spore masses. There may be sudden wilting, death of leaves, stems, or flowers, or plant death. Sanitation is important given its wide host range and ability to survive saprophytically. Plant removal may be the best choice in an outdoor setting if other susceptible plants are in the vicinity. See the Alabama Pest Management Handbook for specific control measures.
Tomatoes are susceptible to a wide range of diseases. The list below shows the common problems seen in this lab over recent years, but it is in no way exhaustive of all disease possibilities for this crop.

Besides being vigilant for various disease problems, growers should be on the alert for Cogongrass, also known as Japan Grass. This highly invasive plant is useless as a forage crop, liable to cut the hands and feet of humans when dug, and is a serious fire hazard. Cogongrass is usually found in circular patches and grows up to 4 feet high. Leaves are usually yellowish green, turning red in the fall. An off-center whitish midrib and serrated leaf edges are characteristic. The segmented rhizomes are white, branched, and sharp-pointed. Send specimens to the Plant Diagnostic Lab if verification is required. See ANR-1241 for control strategies, photographs, and other information.

The list below includes some of the disease problems and their symptoms that might be encountered in June and early July. Refer to the pertinent fact sheets, timely information sheets, spray guides, and the Alabama Pest Management Handbook for detailed control measures.

**Any Host Slime Mold**: Black, gray, pink, or yellow slimy, powdery, or crusty layer on plant surfaces. CONTROL: Remove with a strong stream of water or by wiping; lawns can be mowed.

**Acorn Squash Powdery Mildew**: White, powdery dusting on both leaf surfaces, petioles, and stems. Infected leaves usually wither and die. CONTROL: See Alabama Pest Management Handbook; ANR-877.

**Alfalfa Spring Black Stem and Leaf Spot (Phoma)**: Numerous small dark brown to black spots develop on the lower leaves, petioles, and stems in early spring. Leaf spots may increase in size and coalesce; becoming light to medium brown, then leaves may turn yellow, wither, and fall. Lesions on stems and petioles may enlarge and blacken large areas, girdling the base of the plant and causing death to foliage. Phoma may also cause a crown and root rot. Seed pods may discolor and shrivel in humid conditions. CONTROL: Early cutting; proper fertility management.

**Apple, Pear Bitter Rot**: Brown spots on fruit which enlarge into a brown cone-shaped rot within the fruit. Concentric circles of cream- or salmon-colored spore masses may develop on surface spots. Leaf spots rarely seen. CONTROL: See Alabama Pest Management Handbook; sanitation.

**Apple, Pear Black Rot (Frogeye Leaf Spot)**: Initially, small purple leaf spots enlarge up to 5 mm and may develop a lighter center giving it a “frogeye” appearance. Minute red specks develop on sepals; these grow and become purple with a red border. This results in blossom end rot in fruit. Limb cankers may also develop. CONTROL: Sanitation in the fall, protective sprays in the growing season.

**Apple, Pear Botryosphaeria Canker**: Stem cankers may be small or up to 5 m long, and either superficial or deep, cracking the bark. CONTROL: Prune 3-4 inches beyond canker edge. See Alabama Pest Management Handbook.
**Apple, Pear Fire Blight (Erwinia):** Affected plant parts appear scorched by fire and may have a watery ooze under humid conditions. **CONTROL:** Sanitation; resistant varieties; see Alabama Pest Management Handbook and ANR-542.

**Apple, Pear Flyspeck:** Often numerous small, shiny black spots on fruit. Often occurs alongside sooty blotch. **CONTROL:** Regular protective fungicide sprays; pruning; thinning of fruit.

**Apple, Pear Nectria Canker:** Swollen, elliptical, water-soaked, sunken areas on twigs and branches that are darker than surrounding tissue. **CONTROL:** Prune infected branches 3 inches below canker edges.

**Apple Phytophthora Root and Crown Rots:** Yellowing of foliage and dieback; roots become brown, rotted, and water-soaked. **CONTROL:** Remove damaged plants; improve soil drainage.

**Apple, Pear Powdery Mildew:** White, felt-like patches on leaf surfaces; may also infect blossoms and fruit. **CONTROL:** See Alabama Pest Management Handbook.

**Apple, Pear Sooty Blotch:** Green, sooty blotches on mature fruit. Often occurs alongside flyspeck. **CONTROL:** Regular protective fungicide sprays; pruning; thinning of fruit.

**Arborvitae Phytophthora Root Rot:** Lower foliage yellows, some branches dieback; roots brown rotted and water-soaked. **CONTROL:** Remove damaged plants and surrounding soil; reduce irrigation, improve soil drainage. Fungicides generally not needed in landscape settings.

**Azalea Botryosphaeria Canker:** Sunken, cracked stem lesions. **CONTROL:** Prune affection limbs; remove debris.

**Azalea Cercospora Leaf Spot:** Dark brown, angular spots about 5 mm diameter; usually associated with stressed plants. **CONTROL:** Remove fallen leaves; maintain proper fertility and watering schedules; Cleary’s 3336 may be applied as a protective spray.

**Azalea Colletotrichum Leaf Spot (Anthracnose):** Olive to dark brown angular spots up to 0.5 cm diameter, usually associated with stressed plants. **CONTROL:** Remove fallen leaves; maintain proper fertility and watering schedules; Cleary’s 3336 may be applied as a protective spray.

**Azalea Exobasidium Gall:** Leaves and blossoms develop often large green-pink-white fleshy galls. **CONTROL:** See Alabama Pest Management Handbook.

**Azalea Phomopsis Twig Blight:** Usually small oval, sunken lesions on small branches and twigs; dieback. **CONTROL:** Pruning; improve plant vigor.
**Azalea Phytophthora Crown and Root Rots:** Roots and crown become brown and water-soaked; leaves become chlorotic and wilt. **CONTROL:** Sanitation; see Alabama Pest Management Handbook.

**Azalea Powdery Mildew:** Individual white, powdery leaf spots may eventually cover the entire leaf surface. **CONTROL:** Sanitation; Cleary’s 3336 or Halt.

**Bahia Dollar Spot:** Bleached, dollar-sized spots; individual blades show pale spots with dark borders. **CONTROL:** Maintain proper fertility. See ANR-493.

**Bean Alternaria Leaf Spot:** Brown, often zonate, leaf spots. **CONTROL:** Sanitation; protective sprays of Maneb or Chlorothalonil.

**Bean Fusarium Stem and Root Rots:** Lower stem and roots become reddish-brown, dry rotted. **CONTROL:** Soil solarization; rotate crop at least 7 years.

**Bean Ashy Stem Blight:** Seedling stems have small, black, sunken lesions at soil line; infection grows upward, cankers may girdle plant. **CONTROL:** Remove damaged plants; rotate from beans. Resistance; pathogen-free seeds.

**Bean Rhizoctonia Stem Rot:** Dry, brown, sunken lesions develop on lower stem. **CONTROL:** Remove damaged plants; rotate crop; Terrachlor.

**Bean Root Knot Nematode:** Plants stunted, lower foliage yellows, wilt; roots have galls. **CONTROL:** Remove plants; use resistant varieties; solarization. See ANR-1024.

**Bentgrass Brown Patch (Yellow Patch) (Rhizoctonia):** Round or irregular patches may become large, light brown areas of turf. Individual blades with tan to dark brown lesions. **CONTROL:** Reduce nitrogen fertilizer; protective fungicidal treatments.

**Bentgrass Pythium Blight:** Irregular areas of turf become water-soaked, then light brown. **CONTROL:** See ANR-594.

**Bermuda Bipolaris Leaf Spot/Blight:** Small, elongate, brown leaf spots which may coalesce; stem blight. **CONTROL:** See Alabama Pest Management Handbook under Helminthosporium melting-out.

**Bermuda Brown Patch (Rhizoctonia):** Large circular patches of light brown turf; individual blades show brown lesions and/or crowns show brown lesions, rot. **CONTROL:** See Alabama Pest Management Handbook, ANR-492.

**Bermuda Dollar Spot:** Pale yellow, dollar-sized spots of turf which may coalesce. Individual blades show cream colored spots with dark borders. **CONTROL:** Improve fertilization and optimize irrigation; collect clippings. See Alabama Pest Management Handbook and ANR-493.
**Bermuda Dreschlera or Helminthosporium Leaf Spots (Melting Out):** Small oval or rectangular brown spots may occur on all plant parts; blight occurs when spotting heavy. **CONTROL:** See Alabama Pest Management Handbook.

**Bermuda Nematode Damage:** Various patches of yellowed turf; poor root development, stunted growth. A soil analysis is required for definitive diagnosis. **CONTROL:** See ANR-523.

**Bermuda Rust:** Rusty or brown-colored leaves. **CONTROL:** Generally not required unless in heavy shade. See Alabama Pest Management Handbook and ANR-621.

**Bermuda Spring Dead Spot (Bermudagrass Decline):** Yellow patches develop in early spring. **CONTROL:** See Alabama Pest Management Handbook and ANR-371.

**Blackberry Rosette (Double blossom) (Cercosporella):** Infected blossoms abnormally large with distorted petals and enlarged sepals. Shoots appear rosetted or witches broom, initially are pale green but become bronze. **CONTROL:** See Alabama Pest Management Handbook.

**Blueberry Anthracnose Fruit Rot (Ripe Rot):** Light blue or brown, sunken spots which may have black specks. **CONTROL:** Sanitation. See Alabama Pest Management Handbook.

**Blueberry Botrytis:** Grey or brown blotches on leaves and fruit; fruit rot. **CONTROL:** Sanitation; Benlate protective sprays.

**Blueberry Botryosphaeria canker:** Elongate, sunken, cracked, lesions. **CONTROL:** Prune affected stems.

**Blueberry Gloeosporium Leaf Spot:** Brown leaf spots with purple border; lesions on succulent stems. **CONTROL:** Resistance; reduce humidity in canopy.

**Blueberry Mummy Berry (Monolinia):** Twig cankers, fruit rot. Berries shrivel and dry into “mummies.” **CONTROL:** Sanitation; see Alabama Pest Management Handbook.

**Blueberry Phytophthora Root Rot:** Brown, water-soaked lesions on roots become dried. A serious disease that can cause plant death. **CONTROL:** Ridomil; See Alabama Pest Management Handbook.

**Boxwood Phytophthora root rot:** Roots become light brown, rotted, water-soaked. The outer cortex of the root is easily separated from its core. **CONTROL:** Sanitation; maintain proper water and fertility. See Alabama Pest Management Handbook.

**Boxwood Volutella Blight:** Dieback beyond branch and twig cankers; blighted leaves. Masses of orange spores develop on twigs and leaves in humid conditions. **CONTROL:** Pruning; remove fallen leaves. See Alabama Pest Management Handbook.
**Calla Lily Anthracnose**: Leaf spots. **CONTROL**: If possible, remove spotted leaves as well as fallen leaves; an all-purpose fungicide labeled for general use on ornamentals may be used.

**Camellia Colletotrichum Leaf Spot (Anthracnose)**: Light brown circular spots; under close inspection orange-pink-white-brown sporulation may be seen on the lesions. **CONTROL**: Sanitation; Cleary’s 3336 protective sprays.

**Camellia Phomopsis Leaf Spot**: Yellow or cream blight at leaf edges. **CONTROL**: Immunox or Fertilome Systemic Fungicide.

**Cantaloupe Anthracnose**: Round, brown leaf spots; dark lesions on stems and petioles, possibly with red exudate. **CONTROL**: Deep plowing, rotation; See Alabama Pest Management Handbook.

**Cantaloupe Fusarium Wilt**: Lower leaves yellow; wilting from bottom up. **CONTROL**: Rotation; fumigation.

**Cantaloupe Gummy Stem**: Brown, elongate, cracked lesions on stem have a gummy exudate. **CONTROL**: Sanitation. See Alabama Pest Management Handbook.

**Cantaloupe Powdery Mildew**: White dusting on both leaf surfaces, petioles, and stems, especially on older leaves. Leaves may become yellow-brown and papery. **CONTROL**: Resistant varieties, sanitation; Clorothalonil, sulfur. See ANR-974.

**Cedar, Red (Juniper) Cedar-Apple Rust (Gymnosporangium)**: 1-3 inch round, woody galls on stems which develop orange, jelly-like horns protruding from the entire surface of the gall. **CONTROL**: Remove galls before protrusions develop. Apply protective fungicides to nearby apple, crabapple, and hawthorn. See Alabama Pest Management Handbook and ANR-468.

**Cedar, Red (Juniper) Pestalotia Tip Blight**: Tips of twigs turn brown to gray. **CONTROL**: Maintain proper fertility and watering schedules; selective pruning.

**Cedar, Red (Juniper) Phomopsis Dieback**: Browned twig tips. Dieback extends further down twig with time; cankers. **CONTROL**: Sanitation. See Alabama Pest Management Handbook.


**Centipede Brown Patch (Rhizoctonia)**: Rapidly developing large circular or irregular patches; individual blades show brown lesions, crowns show lesions and rot. **CONTROL**: See Alabama Pest Management Handbook. See ANR-492.
**Centipede Gray Leaf Spot:** Tiny brown lesions on leaves and stems enlarge to round or oval, tan to gray spots with purple to brown borders. CONTROL: See Alabama Pest Management Handbook and ANR-492.

**Centipede Lesion or Ring Nematodes:** Yellow, declining growth, thinning, wilting, and sometimes death occurs in patches or uniformly through the turf. CONTROL: See ANR-523.

**Centipede Take-all Patch:** Small circular light or reddish brown patches which may coalesce into large areas of dead or declining turf. CONTROL: See ANR-823. Bayleton; turf replacement may be necessary.

**Cherry Botryosphaeria Canker:** Elongate, cracked cankers. CONTROL: Sanitation.

**Cherry Laurel Bacterial Leaf Spot (Xanthomonas):** Initially brown to purple spots, sometimes with a light green halo. Older spots dry and fall out leaving a “shot-hole” appearance. CONTROL: Sanitation; basic copper sulfate may provide protective control. See Alabama Pest Management Handbook.

**Cherry Laurel Cercospora Leaf Spot:** Irregular brown spots of variable size. CONTROL: Sanitation of leaves in the fall.

**Cherry Laurel Pestalotia Leaf Spot:** Brown leaf spots or blotches which may have small black specks. CONTROL: None necessary.

**Cherry Laurel Phomopsis Leaf Spot:** Irregular, reddish leaf spots. CONTROL: Sanitation; Cleary’s 3336, Immunox, or Fertilome Systemic Fungicide.

**Cherry Laurel Phytophthora sp. Leaf Spot:** Brown, water-soaked leaf spots or blotches. CONTROL: Sanitation.

**Cherry, Yoshina Phytophthora Root Rot:** Older leaves may yellow, branch dieback, wilt; roots brown, water-soaked, decayed. CONTROL: Remove tree, reduce water levels, replant with Phytophthora-resistant plant.

**Coral Bells Thielaviopsis (Black) Root Rot:** Dieback, wilt; roots with black tips and other areas. CONTROL: Remove damaged plants. A protective drench of Cleary’s 3336 may be used.

**Corn Bacterial Soft Rot:** Brown lesions on leaves, sheaths, and stem; stalk collapse; often a bad odor. CONTROL: Sanitation, maintain balanced soil fertility and moisture and air circulation between plants.

**Corn Common Rust:** Brown, circular or elongate, pustules on both leaf surfaces; yellowing of sheath; death of leaves and sheaths may occur. CONTROL: Resistant varieties.
**Corn Common Smut:** Galls may be present on all above-ground plant parts, first with shiny pale green to silvery covering, then interior becomes powdery, dark masses. Leaf galls tend to remain small, becoming hard and dry. Few or small ears may be produced. **CONTROL:** Resistance is key. Seed treatment, sanitation, rotation, balanced fertility, fungicides may be used but are less effective.

**Corn Gray Leaf Spot:** Elongate gray leaf spots. **CONTROL:** Resistance.

**Corn Northern Corn Leaf Blight:** Long, elliptical, tan, brown, or gray spots first develop on lower leaves; disease spreads upward. **CONTROL:** Resistant varieties.

**Corn Pythium Seedling Disease:** Lower stem turns light brown, becomes water-soaked, and collapses. **CONTROL:** None.

**Corn Rhizoctonia Stem Rot:** Stems develop dry, brown cankers. **CONTROL:** Sanitation.

**Corn Southern Corn Leaf Blight:** Elongate, tan leaf spots which may coalesce, may have yellow to brown halos. Seedlings may wilt and die. **CONTROL:** Resistance.

**Corn Southern Rust:** Cinnamon-brown to orange pustules on upper leaf surfaces, stalks, and sheaths. **CONTROL:** Resistance.

**Corn Stubby-Root Nematodes:** Roots, especially on seedlings, become stunted, stubby. **CONTROL:** See IPM-0428.

**Cotton Fusarium Lower Stem and Seedling Diseases:** Sunken, reddish brown lesions on stem near soil line. **CONTROL:** Seed treatment.

**Cotton Pythium Root Rot and Seedling Disease:** Roots brown, water-soaked; foliage yellow, wilted. Seedlings may fall over at the soil line. **CONTROL:** Seed treatment.

**Cotton Reniform Nematode:** Light green or yellow foliage, mottling; stunted, irregular growth; root necrosis. **CONTROL:** See Alabama Pest Management Handbook.

**Cotton Rhizoctonia Stem and Root Rot:** Dry brown, sunken lesions on stem and roots. **CONTROL:** See Alabama Pest Management Handbook.

**Cotton Root Knot Nematode:** Localized areas of stunted plants; spindle-shaped or rounded root galls. **CONTROL:** Resistant varieties, crop rotation. See ANR-1012.

**Crape Myrtle Powdery Mildew:** Initially a white dusting on upper leaf surfaces; leaves turn brown, may be curled or distorted. **CONTROL:** See Alabama Pest Management Handbook.
**Cucumber Downy Mildew**: Small yellow areas on upper leaf surface which expand and are bound by the veins; undersurface may develop a light gray to dark purple downy growth. CONTROL: See Alabama Pest Management Handbook.

**Cucumber Powdery Mildew**: White, powdery dusting on leaves, petioles, and stems. CONTROL: Resistance; see Alabama Pest Management Handbook.

**Cypress, Leyland Botryosphaeria Canker**: Cracked, elongate, sunken lesions or cankers on branches or trunk. CONTROL: Sanitation; prune affected branches 3 inches beyond canker edge.

**Cypress, Leyland Cercospora/Cercosporella Blights**: Blight usually starts on lower inner leaves. CONTROL: Pruning, sanitation. Cleary’s 3336 can be used as protective spray. See ANR-1196.

**Cypress, Leyland Phomopsis Dieback**: Tips of branches dieback. CONTROL: See Alabama Pest Management Handbook.

**Cypress, Leyland Phytophthora Root Rot**: Generally occurs in wet, poorly drained soils. Dieback, yellow foliage; roots dark, decayed. Rarely a problem on large, landscape trees. CONTROL: Not recommended in landscapes; Subdue Maxx in nursery plants.

**Cypress, Leyland Seiridium Canker**: Elongate, sunken cankers with sap flow. CONTROL: Sanitation; see Alabama Pest Management Handbook, ANR-1160.

**Daisy, Gerber Botrytis Blight**: Damping off, leaf or blossom spots or blight, crown rot. CONTROL: Sanitation. See Alabama Pest Management Handbook.

**Daylily Kabatiella Leaf Spot and Streak**: Numerous 5 mm brown leaf spots surrounded by yellow streaking. CONTROL: Sanitation.

**Daylily Rust**: Orange pustules evident early; elongate yellow-brown leaf spots. CONTROL: Sanitation. See TP-506. Immunox or Fertilome Systemic Fungicide.

**Dianthus Pythium Root and Crown Rot**: Yellow foliage, dieback, wilt. Roots brown, wet, decayed. CONTROL: Improve soil water conditions. Rotate from susceptible plants for 2-3 years.

**Dogwood Cercospora and Septoria Leaf Spots**: Brown, circular or angular leaf spots. CONTROL: Sanitation. See Alabama Pest Management Handbook.

**Dogwood Powdery Mildew**: White, powdery, dusting on leaves and blossoms. CONTROL: See Alabama Pest Management Handbook.

**Dogwood Spot Anthracnose (Elsinoe)**: Small reddish brown spots with reddish borders occur on leaves, bracts, and young twigs; spotting may be severe with foliage death. CONTROL: Sanitation; see Alabama Pest Management Handbook.
Fig **Rhizoctonia Foliage Blight**: Large necrotic leaf spots. **CONTROL**: Prune out heavily affected limbs. Remove leaf debris.

**Gardenia Phytophthora Root Rot**: Roots become brown, brittle; plants show general decline. The disease may spread to adjacent plants. **CONTROL**: Remove diseased shrubs and replace with *Phytophthora*-resistant plants. See ANR-571.


**Geranium Fusarium Root Decay**: Dieback, lower foliage yellows, roots decayed. **CONTROL**: Sanitation; see Alabama Pest Management Handbook.

**Grape Black Rot**: Circular or irregular brown spots up to 5 mm diameter on leaves or fruit. **CONTROL**: Sanitation. See Alabama Pest Management Handbook.

**Grape Downy Mildew**: Yellow, angular leaf spots become dark brown. **CONTROL**: See The Southeast Regional Integrated Pest Management Guide for Grape.

**Hawthorn Fire Blight**: Blackened leaves, twigs, blossoms; shoot dieback. **CONTROL**: See ANR-542.

**Hibiscus Rust**: 1 mm orange-brown pustules on leaf undersurfaces; corresponding yellow-orange spots on upper leaf surface may develop; premature defoliation may occur. **CONTROL**: Sanitation; prune affected branches.

**Holly Colletotrichum Leaf Spot**: Small brown circular leaf spots. **CONTROL**: Cleary’s 3336 may be used as protectant.

**Holly Pestalotia Leaf Spot**: Irregular gray or brown blotches. **CONTROL**: Sanitation.

**Holly Phytophthora Root Rot**: Roots dark and decayed, outer cortex easily separates from inner core. **CONTROL**: Sanitation, reduce excess soil moisture. See Alabama Pest Management Handbook.

**Hollyhock Rust**: Orange pustules on leaves, stems, and flowers; dieback. Also infects hibiscus and mallow. **CONTROL**: Bayleton or Strike at symptom onset. Cut stems back to ground level in fall; remove all plant debris. Remove all weed mallow in area.

**Hosta Anthracnose (Colletotrichum) Leaf Spot**: Brown leaf spots. **CONTROL**: Sanitation; Cleary’s 3336 protective spray.

**Hosta Pythium Crown Rot**: Brown water-soaked decay on stem near soil line. **CONTROL**: Sanitation; improve soil drainage; rotate from Hosta; Subdue 2E after a test treatment.

**Hydrangea Anthracnose**: Brown circular leaf and blossom spots. **CONTROL**: Sanitation; Cleary’s 3336.
**Hydrangea Bacterial Leaf Spot**: Especially severe on *oakleaf hydrangea*. Dark, angular, reddish-purple leaf spots; symptoms begin on lower foliage and move upward. **CONTROL**: Sanitation; water at soil level; copper protective sprays may help.

**Hydrangea Cercospora Leaf Spot**: Variable brown leaf spots. Control: Remove all damaged leaves. See Alabama Pest Management Handbook.

**Hydrangea, Oakleaf Armillaria Root Rot**: Black threadlike structure may be present around root or crown areas; thin white fungal mats may appear under bark. **CONTROL**: Remove affected plants and surrounding soil; replant away from hydrangea.

**Hydrangea, Oakleaf Phytophthora Crown Rot**: Lower trunk brown and wet-rotted. **CONTROL**: Sanitation; see Alabama Pest Management Handbook.

**Hydrangea, Oakleaf Phytophthora Root Rot**: Primarily a problem in container-grown plants. Initially, a sudden wilting of foliage, also yellowing, stunting, or leaf fall. Feeder roots brittle and brown. **CONTROL**: Remove all plants with damaged foliage, reduce excess water from area and improve drainage; Subdue, Banrot, or Banol may be applied to adjacent plants as a protectant and may be effective on roots with low level of infection.

**Hydrangea Pythium Root Rot**: Wilt, dieback; small roots become light brown, wet sooted, deteriorated. **CONTROL**: Sanitation; reduce irrigation. See Alabama Pest Management Handbook and ANR-1148.

**Impatiens Impatiens Necrotic Spot Virus**: Irregularly shaped black spots up to 5 mm, black ring spots may also be present. **CONTROL**: Control thrips; sanitation.

**Indian Hawthorn Entomosporium Leaf Spot**: Reddish leaf spots with black centers. **CONTROL**: Sanitation. Protective fungicide sprays.

**Iris Bacterial Soft Rot**: Rhizomes and leaves mushy and have unpleasant odor. Bacteria enters through wounds, often caused by the iris borer. **CONTROL**: Avoid fresh manure and excess nitrogen; cut off affected plant parts and destroy; if damage is extensive, dig up and destroy diseased rhizomes. Insecticide dust may be used to control borers.

**Iris Heterosporium Leaf Spot**: Brown elliptical spots may be up to 2 cm. Spots may have a halo. **CONTROL**: Sanitation. Cleary’s 3336 protective sprays.

**Ivy Anthracnose**: Irregular brown spots often occurring along veins. **CONTROL**: Sanitation; Cleary’s 3336 or Domain. See Alabama Pest Management Handbook.

**Ivy Phyllosticta Leaf Spot**: Round to oval, brown leaf spots. **CONTROL**: ????

**Ivy Phytophthora Root Rot**: Roots initially brown and water-soaked, then dry. Foliage wilts, dieback. **CONTROL**: Sanitation, reduce irrigation. See Alabama Pest Management Handbook and ANR-1148.
**Juniper:** See Cedar, Red.

**Lily Phoma Leaf Spot:** Zonate leaf spots. CONTROL: *Phoma* is responsive to most protective fungicides such as Cleary’s 3336.

**Liriope Fusarium Crown Rot:** Dry rot of lower stem. CONTROL: Avoid plant stress. Cleary’s 3336 as protective spray.

**Liriope Rhizoctonia Crown Rot:** Lower stems brown and dry. CONTROL: Sanitation. See Alabama Pest Management Handbook.

**Magnolia Algal Leaf Spot:** Circular, greenish or reddish brown, slightly raised leaf spots. CONTROL: Sanitation. See Alabama Pest Management Handbook.

**Magnolia Alternaria Leaf Spot:** Black leaf spots on either healthy or stressed trees. CONTROL: Removed fallen leaves.

**Magnolia Black Mildew:** Black mold on undersurfaces of leaves. CONTROL: None.

**Maple Anthracnose:** Brown to black blotchy spots may occur along leaf veins or edges; may develop into large areas of leaf. CONTROL: Sanitation; See Alabama Pest Management Handbook for small trees.

**Maple Phyllosticta Leaf Spot:** Small, circular, light brown leaf spots with darker brown or purplish borders. CONTROL: Sanitation of fallen leaves. See Alabama Pest Management Handbook.

**Maple Tar Spot:** Black, irregular leaf spots. CONTROL: Remove fallen leaves. See Alabama Pest Management Handbook.

**Maple, Japanese Phomopsis Canker:** Elliptical, gray-brown, sunken lesions on small branches and twigs. CONTROL: Sanitation; prune affected branches.

**Maple, Red Botryosphaeria Canker:** Dry, cracked, dark branch lesions. CONTROL: Prune out cankers.

**Marigold Pythium Root Rot:** Roots become light brown, water-soaked, and easily pulled apart. CONTROL: Sanitation; reduce excess soil moisture. See Alabama Pest Management Handbook.

**Mayhaw Cedar-Quince Rust:** Bright yellow spots on leaves and fruit; corresponding orange pustules may be seen on leaf undersurfaces. CONTROL: If practicable, removal of junipers in area.

**Mulberry, Weeping Cylindrosporium Leaf Spot:** Small, angular, reddish brown leaf spots. CONTROL: Sanitation.
**Oak Armillaria Root Rot:** Small or discolored leaves, reduced shoot growth, white mycelial mats under bark, black threadlike growths on roots. Honey-colored mushrooms may be present at base of tree. **CONTROL:** If caught early, remove dead bark from cankers; remove stumps and roots from diseased trees. See ANR-907.

**Oak Botryosphaeria Canker:** Sunken lesions with cracked margins. **CONTROL:** Pruning.

**Oak Fusiform Rust:** Small leaf spots with short, hair-like structures on undersurface. **CONTROL:** This is not a serious problem for oaks but is very damaging to pines, especially slash and loblolly. Remove either oak or pine from the area.

**Oak Hypoxylon Canker:** Thick, hard, black fungus layer under the bark. **CONTROL:** Prune out cankers.

**Oak Leaf Blister:** Brown, puckered spots up to 1 cm on leaves. This is usually not a serious problem but leaf drop sometimes occurs. **CONTROL:** Sanitation; see Alabama Pest Management Handbook.

**Oak Slime Flux:** A foul-smelling sap flows down trunk. **CONTROL:** Not necessary.

**Oats Black Loose Smut:** Smutted plants generally shorter; seed heads filled with dark, sooty spore masses. **CONTROL:** Fungicide seed dressing before planting; no control in field.

**Oats Crown or Leaf Rust:** Bright yellow or orange pustules on leaves, sheathes, panicles, or stem. **CONTROL:** Deep plowing.

**Oats Helminthosporium Leaf Spot:** Small, elongate, reddish-brown leaf spots. **CONTROL:** None, damage is usually minimal.

**Okra Rhizoctonia Crown and Root Rot:** Brown dry lesions on crown, decay of crown and roots. **CONTROL:** Sanitation; rotate crop for 1-2 years.

**Onion Bacterial Soft Rot:** Initial water-soaked tissue disintegrates into slimy mass with a bad odor. Symptoms begin at bulb neck and may only affect outer scales. **CONTROL:** Harvest only mature bulbs and store under dry conditions; avoid other diseases, insects, and mechanical injuries. Copper-based bactericides may reduce infection and spread.

**Peach Bacterial Leaf Spot:** Brown, irregular or circular, leaf spots with wet margins which eventually fall out leaving shot holes which may have yellow halos. **CONTROL:** Sanitation; protective sprays available for commercial growers.

**Peach Brown Rot:** Brown rot on fruit which may develop fluffy gray fungal masses. **CONTROL:** Sanitation; See Alabama Pest Management Handbook.

**Peach Phomopsis Canker:** Dieback; elongate, brown stem cankers. **CONTROL:** Sanitation.
**Peach Scab:** Small, olive-colored, velvety spots or blotches on fruit surface; slightly raised green to brown spots on leaf undersides. **CONTROL:** Sanitation; protective fungicide sprays.

**Peanut Diplodia Collar Rot:** Wilt, dieback; root and crown rot. **CONTROL:** See Austin Hagan.

**Peanut Tomato Spotted Wilt Virus:** Yellow ring spots on leaves, new leaves small, plants stunted. **CONTROL:** Control thrips; sanitation.

**Pear Cedar-Pear Rust:** Bright yellow leaf spots, light orange tendrils on leaves or fruit; does not affect overall health of tree. **CONTROL:** Remove nearby junipers if practical. Harvest pears before orange pustules form.

**Pear Entomosporium Leaf Spot:** Small black leaf spots. **CONTROL:** Sanitation. See Alabama Pest Management Handbook.

**Pear Fireblight (Erwinia):** Black dieback, blossom blight; twigs may have a shepherd’s crook appearance. **CONTROL:** See Alabama Pest Management Handbook.

**Pear:** See also under Apple.

**Peony Botrytis Blight:** Brown blotches on leaves, stems, blossoms. **CONTROL:** Sanitation. See Alabama Pest Management Handbook.

**Pepper Anthracnose Fruit Rot:** Sunken, black blotches on fruit which may develop orange pustules. **CONTROL:** See Alabama Pest Management Handbook.

**Pepper Bacterial Leaf Spot:** Dark, angular leaf spots up to 5 mm with wet edges. **CONTROL:** Sanitation. See Alabama Pest Management Handbook.

**Pepper Bacterial Wilt:** Wilted leaves, rapid wilt of green plants. **CONTROL:** Rotate from pepper, tomato, eggplant, Irish potato for 3-5 years.

**Pepper Fusarium Wilt:** Lower foliage yellow, wilted; symptoms spread upward. **CONTROL:** Rotate from pepper and other solanaceous crops for a decade or more.

**Pepper Tomato Spotted Wilt Virus:** Plants stunted, distorted. Ring spots or bronzing may be present. **CONTROL:** Sanitation; control thrips.

**Periwinkle Anthracnose:** Leaf spots; brown, sunken stem cankers. **CONTROL:** Sanitation; Cleary’s 3336, Benomyl WP, Domain.

**Periwinkle Phytophthora Aerial Blight:** Dark cankers girdle stem; dieback, wilt. **CONTROL:** Sanitation. See Alabama Pest Management Handbook.
**Petunia**  **Phytophthora Foliage Blight/Root and Crown Rots**: Leaf spots, dieback, blight; roots and crown brown, wet rotted. **CONTROL**: Remove damaged plants. See Alabama Pest Management Handbook.

**Petunia**  **Pythium Crown and Root Rots**: Lower stems and roots brown and wet-rotted. **CONTROL**: Remove damaged plants and associated soil; correct soil water levels.

**Phlox**  **Phytophthora Root and Stem Rot**: Roots, crown, and stem rotted; plants stunted; wilt, yellowing. **CONTROL**: Remove diseased plants. Reduce irrigation and improve soil drainage.

**Phlox**  **Pythium Root Rot**: Small roots light brown, water-soaked, stunted. Plants yellow, wilted, dieback. **CONTROL**: Remove damaged plants. Improve soil water conditions.

**Plum**  **Bacterial Leaf Spot**: Reddish-brown leaf spots which may fall out leaving shot-hole appearance, may have yellow halo. **CONTROL**: Sanitation; sprays for commercial growers.

**Plum**  **Black Knot**: Green, swollen, elongated galls in spring become black in summer. **CONTROL**: Pruning; see ANR-1055. Apply Captan at green tip stage.

**Plum**  **Brown Rot**: Gray mold on blossoms, profuse gumming at margin between healthy and diseased twig tissue, circular necrotic lesions on fruit. **CONTROL**: See Alabama Pest Management Handbook.

**Potato**  **Scab**: Circular, raised or sunken. scabby lesions up to 8 mm on tubers. **CONTROL**: Maintain a slightly acid soil; crop rotation; resistant varieties.

**Privet**  **Cercospora Leaf Spot**: Round or irregular leaf spots up to 1 cm. **CONTROL**: See Alabama Pest Management Handbook.

**Pumpkin**  **Downy Mildew**: Initially, leaf mottling, then yellow, angular spot. Light gray to purple fluffy spots on leaf undersides; eventual leaf death. **CONTROL**: See Alabama Pest Management Handbook.

**Pumpkin**  **Powdery Mildew**: White powdery growth on leaves. **CONTROL**: Resistance; See Alabama Pest Management Handbook.

**Quince**  **Cedar-Quince Rust**: Orange cups on fruit followed by fruit rot; yellow spots on leaves may occur. **CONTROL**: Remove affected fruit and fallen leaves as well as nearby red cedars. See Alabama Pest Management Handbook.

**Quince**  **Fireblight** *(Erwinia amylovora)*: Blossom blight followed by rapid dieback. **CONTROL**: Severe pruning.

**Quince**  **Phytophthora Foliage Blight**: Dark, wet-looking leaf blotches. **CONTROL**: Sanitation; water at ground level.
**Quince**  Phytophthora Root Rot:  Dieback; roots become brown and water-soaked.  
CONTROL:  Sanitation; reduce soil water levels.

**Rhododendron**  Cercospora Leaf Spot:  Usually round, brown spots up to 1 cm.  
CONTROL:  Sanitation; Cleary’s 3336 or Domain protective sprays.

**Rhododendron**  Pestalotia Leaf Spot:  Gray-brown leaf blotches, often occurs on cold-stressed or injured leaves.  
CONTROL:  Sanitation.

**Rhododendron**  Phytophthora Root Rot:  Dieback; roots become brown, water-soaked, rotted.  
CONTROL:  Remove damaged plants; reduce excess soil moisture.  See Alabama Pest Management Handbook.

**Rose**  Black Spot (Diplocarpon rosa):  Round black spots with feathery edges.  

**Rose**  Brown Canker:  Elongate brown cankers.  
CONTROL:  Remove cankered limbs, cutting 3 inches beyond canker edge; plant removal if trunk is affected.  Protective sprays on nearby roses using fungicides labeled for black spot.

**Rose**  Common Canker:  Red to yellow spots in the bark become light brown cankers with a dark brown margin, becomes shrunken and cracked.  
CONTROL:  Avoid injury to canes; prune the affected canes with sharp tools immediately above the node and at an angle.

**Rose**  Downy Mildew:  Irregular, water-soaked leaf spots become black with age.  
CONTROL:  See Alabama Pest Management Handbook.

**Rose**  Powdery Mildew:  White powdery coating on leaves and stems.  

**Ryegrass**  Rust:  Small yellow, red, or brown leaf spots.  
CONTROL:  Frequent mowing or harvest.

**Sage**  Phytophthora Root and Crown Rot:  Lower stem and roots brown and wet-rotted; plant wilts.  
CONTROL:  Remove diseased plants; reduce irrigation.

**Sorghum**  Rough Spot:  Oval, reddish leaf spots that are rough to the touch.  
CONTROL:  This is common but rarely serious.

**Soybean**  Asian Soybean Rust:  Initially tiny yellow leaf spots which darken, become angular; pustules may form on leaf undersurfaces.  
CONTROL:  Early detection; see ANR-1310.

**Soybean**  Pythium Seedling Disease:  Lower stem or roots become brown, translucent, water-soaked.  
CONTROL:  Seed treatment.

**Soybean**  Rhizoctonia Stem and Root Rots:  Reddish or brown lesions on lower stem.  
CONTROL:  Seed treatment; provide good soil drainage.
**Soybean Root Knot Nematode**: Poor growth, plants yellow or stunted; galls on roots. **CONTROL**: Resistance, rotation. See Alabama Pest Management Handbook.

**Squash Anthracnose**: Round, light brown leaf spots. **CONTROL**: See The Southeastern Vegetable Extension Workers Handbook.

**Squash Downy Mildew**: Small yellow areas on upper leaf surface which expand and are bound by the veins; undersurface may develop a light gray to dark purple downy growth. **CONTROL**: See Alabama Pest Management Handbook.

**Squash Powdery Mildew**: Powdery white growth on leaves, petioles, and stems; yellow spots may form on leaves opposite growth on undersurface; leaves wither and die. **CONTROL**: Resistant varieties; commercial fungicides with the active ingredients benomyl, chlorothalonil, or triadimefon.

**St. Augustinegrass Brown Patch**: Brown blotches on individual blades; whole blade may become brown. **CONTROL**: See Alabama Pest Management Handbook.

**St. Augustinegrass Gray Leaf Spot**: Gray spots and blotches which may become large, foliage dieback. **CONTROL**: Sanitation. See Alabama Pest Management Handbook.

**St. Augustinegrass Take-All Patch (Gaeumannomyces)**: Circular light to reddish-brown patches of turf. **CONTROL**: Maintain soil pH between 5.5-6.0; use ammonium forms of nitrogen.

**Strawberry Anthracnose Fruit Rot (Colletotrichum)**: Dark rotting develops on fruit. Older spots may produce orange spores. **CONTROL**: See Alabama Pest Management Handbook or Spray Guide Bulletin for Small Fruit.


**Strawberry Mycosphaerella (Common) Leaf Spot**: Symptoms vary by variety and temperature. 2-3 mm round leaf spots may have light centers and purple margins. Spots may coalesce causing leaf death. **CONTROL**: See Alabama Pest Management Handbook.

**Strawberry Phytophthora Crown, Root, and Petiole Rots**: Inner crown may be reddish. Crown and roots may be wet, brown, rotted. Petioles become brown and decayed. **CONTROL**: Sanitation; reduce irrigation and/or improve drainage. See Alabama Pest Management Handbook.

**Sweet Potato Black Rot (Ceratocystis fimbriata)**: Initially small dark spots appear on roots. The rot tends to remain firm and shallow. **CONTROL**: Sanitation. See Alabama Pest Management Handbook for a commercial crop.
**Sycamore Powdery Mildew:** White powdery dusting on leaves. CONTROL: Sanitation. See Alabama Pest Management Handbook.

**Tomato Bacterial Canker:** Elongate, brown, water-soaked stem lesions with dry, white centers. CONTROL: Remove damaged plants. See Alabama Pest Management Handbook.

**Tomato Bacterial Leaf Speck:** Small, angular, black leaf spots, sometimes with a halo. CONTROL: See Alabama Pest Management Handbook.


**Tomato Bacterial Wilt:** Green plants suddenly wilt; vascular tissue yellow to light brown, darker as disease progresses. CONTROL: Rotate away from solanaceous crops or fumigate soil.

**Tomato Blossom End Rot:** A nutrient problem characterized by a hard black lesion at blossom end of fruit. CONTROL: Optimize water levels and fertilization. See Alabama Pest Management Handbook.

**Tomato Buckeye Fruit Rot:** Light brown, zonate spots on fruit; flesh decomposes. CONTROL: Keep fruit off soil; Ridomil 2E.

**Tomato Colletotrichum (Anthracnose) Fruit Rot:** Colorless, water-soaked fruit rot. CONTROL: Sanitation. See Alabama Pest Management Handbook.

**Tomato Early Blight:** Brown or black spots up to 1 cm on leaves, stems, or fruit. Spots may form in concentric circles. CONTROL: Fungicide sprays; sanitation.

**Tomato Fusarium Wilt:** Lower leaves yellow, wilted; this progresses up stem. Lower stem vascular tissue develops brown color. CONTROL: Sanitation; rotate away from tomatoes 10 or more years. Some resistant tomato varieties are only resistant to 2 of the 3 common races of this fungus.

**Tomato Leaf Mold:** Gray to pale green leaf blotches; leaves may curl and fall. CONTROL: See Alabama Pest Management Handbook.

**Tomato Root Knot Nematode:** Poor growth; galls on roots. CONTROL: Rotation; fumigation; solarization.

**Tomato Septoria Leaf Spot:** Gray, round or irregular, leaf spots. CONTROL: See Alabama Pest Management Handbook.

**Tomato Southern Blight (White Mold):** Stem decays at soil line; a white fungal mat with hard, brown spherical bodies may be present on surrounding soil. CONTROL: Sanitation; crop rotation; Terrachlor. See ANR-863.
**Tomato  Tomato Spotted Wilt Virus**: Yellow to brown leaf spots, plants wilted, new growth stunted. **CONTROL**: Sanitation; resistance. Reflective mulch is most effective for thrips control.

**Verbena  Phytophthora and Pythium Crown Rots**: Lower stems brown and wet-rotted. **CONTROL**: Sanitation. Subdue may be used in commercial settings.

**Vinca, Annual (Madagascar Periwinkle)  Phytophthora Foliage Blight**: Dark brown lesions on leaves and stems; dieback. **CONTROL**: Sanitation; avoid excess moisture. See Alabama Pest Management Handbook.

**Vinca, Annual  Rhizoctonia Stem Rot**: Dried, dark brown sunken stem lesions; dieback of affected stems. **CONTROL**: Sanitation; remove damaged plants. Protective sprays of Domain, Chipco 26019, or Cleary’s 3336. See Alabama Pest Management Handbook.

**Vinca minor and V. major (Common and Big Periwinkle)  Anthracnose**: Small or large brown leaf spots. **CONTROL**: See Alabama Pest Management Handbook under Perennial Vinca.

**Watermelon  Anthracnose**: Brown to black leaf spots which may coalesce and cover most of the leaf; small water-soaked spots on fruit become black, sunken spots which may have orange gelatinous spore masses; elongate tan lesions on stems and petioles. **CONTROL**: See Alabama Pest Management Handbook.

**Watermelon  Cucurbit Yellow Vine Disease**: Bright yellowing and wilting followed by death of plant. Pumpkin and squash likely to show disease before watermelon or cantaloupe due to their preference by the squash bug which carries the bacterium. No vascular discoloration as in **Fusarium Wilt**. **CONTROL**: Control squash bugs early; sanitation after harvest.

**Watermelon  Fusarium Crown Rot**: Dry, brown lesions on crown. **CONTROL**: Crop rotation for 6-12 years or more; plant resistant varieties.

**Watermelon  Fusarium Root Rot**: Roots become dry and rotted; wilt, dieback. **CONTROL**: Rotate crops for 10-16 years.

**Watermelon  Fusarium Wilt**: Vines and leaves become yellow and wilted beginning with the oldest foliage. **CONTROL**: Resistant varieties; rotate from watermelon for 6-12 years.

**Watermelon  Gummy Stem**: Brown spots which may cause leaf blight; round tan to black spots may appear on stems; brown exudates may come from stem lesions. **CONTROL**: See Alabama Pest Management Handbook or Southeastern Vegetable Crop Handbook.

**Watermelon  Powdery Mildew**: White powdery dusting on leaf surfaces. Leaves may wilt and die. **CONTROL**: See Alabama Pest Management Handbook.

**Willow  Botryosphaeria Canker**: Elongate, sunken, cracked branch lesions which may ooze sap. **CONTROL**: Sanitation; prune affected limbs 3 inches beyond canker.
**Willow Melampsora Rust:** Brown-orange pustules on leaves and blossoms. **CONTROL:** Remove affected leaves and blossoms as well as fallen leaves. Check for leaf spots on nearby gooseberry and currants. Mancozeb or Daconil protective sprays may be used.

**Zinnia Bacterial Leaf Spot** Small, dark, water-soaked, angular leaf spots which may have a yellow halo. **CONTROL:** Remove all affected plants; water at soil level; See Alabama Pest Management Handbook.

**Zinnia Fusarium Root Rot:** Roots dried and brown; dieback. **CONTROL:** Since this is a soil-borne fungus and difficult to control, plant in a new location.

**Zinnia Tomato Spotted Wilt Virus:** Yellow-green mosaic leaf spots. **CONTROL:** Sanitation; rotation.

**Zoysia Brown Patch (Rhizoctonia):** Rapidly developing large circular or irregular patches; individual blades show brown lesions, crowns show lesions and rot. **CONTROL:** See ANR-492.

**Zoysia Rust:** Orange-brown, powdery spots on leaves. **CONTROL:** See Alabama Pest Management Handbook or ANR-621.

**Zoysia Spring Dead Spot:** Individual plants yellow and die, brown or black lesions on roots. **CONTROL:** See Alabama Pest Management Handbook and ANR-312.