JUNE PLANT DISEASES FROM THE AUBURN
PLANT DIAGNOSTIC LAB

INSECT REPORT

DISEASE POSSIBILITIES FOR AUGUST

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The Auburn Plant Diagnostic Lab received 99 plant samples in June. Insect or mite damage was identified on 12 samples, 28 abiotic problems were identified, and 81 biotic diseases were identified during the month. The lab received three rhododendron samples from the Alabama Department of Agriculture with suspected Sudden Oak Death symptoms, all of which were found negative of *Phytophthora ramorum*. Several first reports for Alabama were documented in June at the AU lab.

Impatiens downy mildew was reported in Alabama for the first time in June. The disease was reported in two counties this month: Mobile and Lee County. *Plasmopara obducens*, causal agent of impatiens downy mildew, is specific to impatiens and will not infect other annual or herbaceous floral crops. Earliest symptoms include a yellowing or stippling of leaves, which may eventually curl downward along the leaf margin. Stunting along with leaf distortion and yellowing, and eventually premature leaf shed are diagnostic for downy mildew on impatiens. Control options for homeowners are limited. Purchasing symptom-free bedding or pot-grown impatiens may help reduce the risk of introducing this disease as will the immediate removal and disposal of diseased plants.

Basil downy mildew was also detected for the first time in Alabama during June. *Peronospora belbahrii*, causal agent of basil downy mildew, will cause disease symptoms similar to impatiens downy mildew. The disease was first reported in the United States in south Florida during 2007. By 2008 it was confirmed in many eastern states. Control of downy mildew in basil includes minimizing leaf wetness and reducing humidity to obtain conditions unfavorable for disease development. These practices include planting in full sunlight with good air movement, maximizing plant spacing, and using drip irrigation.

Downy mildew was also detected on cucumber and cataloupe in the Cucurbit downy mildew sentinel plot at the EV Smith Research Center in June. The disease was also observed on cucumber in the sentinel plot at the Gulf Coast Research and Extension Center at Fairhope. These are the first "official" reports of the disease in Alabama this year. Powdery mildew was observed on most susceptible Cucurbita in the sentinel plots due to the relatively warm and dry conditions we experienced in the first part of June.

Soybean rust was detected in a soybean sentinel plot in Baldwin County at the end of June. This was the first report of SBR on soybeans in Alabama this year. The disease was detected on both a group III and IV variety. Plants were only about one foot tall and at the R5 growth stage. The plot was subjected to heavy grazing by deer this season. At least three SBR-positive kudzu sites had been identified in Baldwin County previously this year including one patch about 1/2 mile from the sentinel plot.

### Table 1. June Plant Diseases Received at the Auburn Plant Diagnostic Lab

<table>
<thead>
<tr>
<th>Plant</th>
<th>Disease/Problem</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Althea</td>
<td>Hibiscus Rust</td>
<td>Macon</td>
</tr>
<tr>
<td>Apple</td>
<td>Fire Blight</td>
<td>*</td>
</tr>
<tr>
<td>Azalea</td>
<td>Phytophthora Root Rot</td>
<td>Montgomery</td>
</tr>
<tr>
<td>Bahia grass</td>
<td>Bipolaris Leaf Spot and Blight</td>
<td>Pike</td>
</tr>
<tr>
<td>Plant/Tree</td>
<td>Disease/Problem</td>
<td>County</td>
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<td>-----------</td>
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</tr>
<tr>
<td>Basil</td>
<td>Downy Mildew</td>
<td>*</td>
</tr>
<tr>
<td>Bermudagrass</td>
<td>Rust</td>
<td>*(2)</td>
</tr>
<tr>
<td></td>
<td>Slime Mold</td>
<td>Lauderdale</td>
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<tr>
<td></td>
<td>Bermudagrass Decline</td>
<td>Montgomery(3)</td>
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<tr>
<td></td>
<td>Sting Nematode</td>
<td>Marengo</td>
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<tr>
<td>Bradford pear</td>
<td>Fireblight</td>
<td>Lee</td>
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<tr>
<td>Butterflyweed</td>
<td>Rust</td>
<td>Lee</td>
</tr>
<tr>
<td>Centipede</td>
<td>Brown Patch</td>
<td>Shelby</td>
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<td></td>
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<td>Montgomery</td>
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<tr>
<td>Collards</td>
<td>Insect Injury</td>
<td>Lee</td>
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<tr>
<td>Coneflower</td>
<td>Bacterial Leaf spot</td>
<td>Lee</td>
</tr>
<tr>
<td>Corn</td>
<td>Common Rust</td>
<td>Henry</td>
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<tr>
<td>Crape myrtle</td>
<td>Bacterial Leaf Spot</td>
<td>Baldwin</td>
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<tr>
<td>Cucumber</td>
<td>Powdery Mildew</td>
<td>Lee</td>
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<tr>
<td>Cucurbit</td>
<td>Downy Mildew</td>
<td>Henry</td>
</tr>
<tr>
<td>Cypress, Leyland</td>
<td>Pestalotiopsis Tip Blight</td>
<td>Covington</td>
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<tr>
<td></td>
<td>Botryosphaeria Cankers</td>
<td>Madison</td>
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<tr>
<td>Gardenia</td>
<td>Citrus Whitefly</td>
<td>Macon</td>
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<tr>
<td>Grape</td>
<td>Black Rot</td>
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<tr>
<td></td>
<td>Botrytis Bunch Rot</td>
<td>Dekalb(10)</td>
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<td></td>
<td>Alternaria Fruit Rot</td>
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<td></td>
<td>Anthracnose</td>
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<td>Hemlock</td>
<td>Planthopper</td>
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<td>Hollyhock</td>
<td>Rust</td>
<td>Lee</td>
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<td>Hydrangea</td>
<td>Anthracnose Leaf Spots</td>
<td>Montgomery</td>
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<tr>
<td></td>
<td>Corynespora Leaf Spot</td>
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<tr>
<td>Impatiens</td>
<td>Downy Mildew</td>
<td>Mobile</td>
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<td></td>
<td></td>
<td>Lee</td>
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<td>Jasmine, Asiatic</td>
<td>Rhizoctonia Root Rot</td>
<td>Lee</td>
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<td>Liriope</td>
<td>Phytophthora Crown and Root Rot</td>
<td>Coffee</td>
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<td>Magnolia, Southern</td>
<td>Thrips</td>
<td>Madison</td>
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<td>Maple, Sugar</td>
<td>Anthracnose</td>
<td>Cullman</td>
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<td>Oak</td>
<td>Bacterial Leaf Scorch</td>
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<tr>
<td></td>
<td>Oak Leaf Blister</td>
<td>Chilton</td>
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<td>Peanut</td>
<td>Leaf Scorch</td>
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<td>Periwinkle, Annual</td>
<td>Phytophthora Root Rot</td>
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<td>Potato</td>
<td>Late Blight</td>
<td>Montgomery</td>
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<td>Rose</td>
<td>Spider Mites</td>
<td>Chambers</td>
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<tr>
<td>Satsuma</td>
<td>Botryosphaeria</td>
<td>Montgomery</td>
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<tr>
<td></td>
<td>Dry Root Rot</td>
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<tr>
<td>Soybean</td>
<td>Rhizoctonia Damping-off</td>
<td>*</td>
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<td>Squash, summer</td>
<td>Aphids</td>
<td>Perry</td>
</tr>
<tr>
<td></td>
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<td>Escambia</td>
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</table>
St. Augustinegrass  | Gray Leaf Spot | Autauga
Take-All Patch | Mobile
Sunn Hemp Tomato  | Three-cornered Alfalfa Hopper | Lee
Tomato Spotted Wilt Virus | Lee
Whiteflies | Clay
Blossom End Rot | Tallapoosa
Bacterial Leaf Spot | 
St. Augustinegrass  | Septoria Leaf Spot | 

Turf  | Brown Patch | Lee
Tumeric  | Yellowstriped Armyworm | Lee
Watermelon  | Gummy Stem Blight | *
Zoysia  | Spring Dead Spot | Jefferson(2)
Brown Patch | Escambia
Fairy Ring | Montgomery
Take-All Patch | Calhoun
Rust | Lee(2)
Chinch Bugs | 

* Counties are not reported for commercial samples.

**Table 2.** June Insect Report (C. Ray)

<table>
<thead>
<tr>
<th>County</th>
<th>Host/Location</th>
<th>Category</th>
<th>Common Name</th>
<th>Scientific Name</th>
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<tr>
<td>Elmore</td>
<td>Miscellaneous</td>
<td>Southern</td>
<td>Vejovis carolinianus</td>
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<td></td>
<td>Stripeless Scorpion</td>
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<tr>
<td>Clay</td>
<td>Home</td>
<td>Household - Structural</td>
<td>Formosan Termites</td>
<td>Coptotermes formosanus</td>
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<tr>
<td></td>
<td></td>
<td>a shieldback bug nymph</td>
<td>Scutellaridae</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>a braconid wasp</td>
<td>poss. Atanycolus</td>
<td></td>
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<tr>
<td>Lee</td>
<td>Miscellaneous</td>
<td>Ornamental</td>
<td>poss. Metcalfia pruinose</td>
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<tr>
<td>Blount</td>
<td>Pasture</td>
<td>Row Crops</td>
<td>Harlequin Bug</td>
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<td></td>
<td></td>
<td>Forage</td>
<td>False Colorado Potato Beetle Larva</td>
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<td></td>
<td></td>
<td>Ornamental</td>
<td>European Hornet</td>
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<tr>
<td>Lee</td>
<td>Home</td>
<td>Miscellaneous</td>
<td>Vespa crabo</td>
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<tr>
<td>New Jersey</td>
<td>Home</td>
<td>Ornamental</td>
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<table>
<thead>
<tr>
<th>Location</th>
<th>Category</th>
<th>Subcategory</th>
<th>Insects</th>
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<tbody>
<tr>
<td>Pike</td>
<td>Home</td>
<td>Household - Miscellaneous</td>
<td>Common Eastern Bumblebee Bombus impatiens</td>
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<td>Home</td>
<td>Household - Stored</td>
<td>Plaster Bagworm Phereoeca dubitatrix.</td>
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<td>Talladega</td>
<td>Persimmon Fruits &amp; Nuts</td>
<td>Persimmon Psylla</td>
<td>Trioza diospyri</td>
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<td>Mobile</td>
<td>Miscellaneous</td>
<td>male Carolina Wolf Spider</td>
<td>Hogna carolinensis</td>
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<td>Macon</td>
<td>Hardwood Saplings</td>
<td>Ornamentals</td>
<td>Glassy-winged Sharpshooter Homalodisca vitripennis</td>
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<tr>
<td>Macon</td>
<td>Hardwood Saplings</td>
<td>Ornamentals</td>
<td>Broad-headed Sharpshooter Oncometopia orbona</td>
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<tr>
<td>Macon</td>
<td>Hardwood Saplings</td>
<td>Ornamentals</td>
<td>Speckled Sharpshooter Paraulacizes irrorata</td>
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<td>Lee</td>
<td>Soybeans</td>
<td>Row Crops</td>
<td>Mexican Bean Leaf Roller Urbanus proteus</td>
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<td>Russell</td>
<td>Egg Plant</td>
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<td>False Chinch Bug Nysius raphanus</td>
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<td>Garden Peas</td>
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<td>Bark Lice Psocoptera</td>
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<td>Elmore</td>
<td>Magnolia</td>
<td>Ornamental</td>
<td>Bald-faced Hornet Nest Dolichovespula maculata</td>
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<td>Lee</td>
<td>Collards</td>
<td>Row Crops</td>
<td>Cross-Striped Cabbage Evergestis rimosalis</td>
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<td>Jefferson</td>
<td>Home</td>
<td>Household - Miscellaneous</td>
<td>Argentine Ant Linephema humile</td>
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<td>Covington</td>
<td>Leyland Cypress</td>
<td>Ornamental</td>
<td>Insect Feeding Damage</td>
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<td>Autauga</td>
<td>Corn</td>
<td>Row Crops</td>
<td>Southern Green Stink Bug nymphs Nezara viridula</td>
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<td>Gonzales,</td>
<td>School</td>
<td>Miscellaneous</td>
<td>Black Crazy Ants Paratrechina longicornis</td>
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<tr>
<td>Ascension</td>
<td>Parish, LA School</td>
<td>Miscellaneous</td>
<td>386 insects of various orders</td>
</tr>
<tr>
<td>Jefferson</td>
<td>Lawn</td>
<td>Miscellaneous</td>
<td>135 insects of various orders</td>
</tr>
<tr>
<td>Jefferson</td>
<td>Lawn</td>
<td>Miscellaneous</td>
<td>447 insects of various orders</td>
</tr>
</tbody>
</table>
Disease Possibilities for August (M. Bloodworth)

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

**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  Summer Black Stem and Leaf Spot (Cercospora)**: Round or irregular, reddish brown or brown spots up to 6 mm may be surrounded by large yellow area; may become gray in high humidity; defoliation. CONTROL: Regular harvesting.

**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  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  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  Pestalotia Blight**: Areas of brown, dying foliage. CONTROL: Sanitation, reduce stress; Cleary’s 3336.

**Aucuba  Botryodiplodia Leaf and Stem Blotches**: Large, irregular black leaf blotches; black cankers on stems; dieback. CONTROL: Pruning, sanitation; Cleary’s 3336.

**Azalea  Phomopsis Canker**: Sunken, elongate lesions on twigs and limbs; dieback. CONTROL: Prune affected limbs 3 inches beyond canker, dipping shears in 10% bleach between cuts.


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

**Bahia  Bipolaris Leaf Spot and Blight**: Small elongate, brown leaf spots; sometimes associated with low potassium levels in soil. CONTROL: Frequent harvest.
**Bahia Dollar Spot**: Pale, silver-dollar sized spots in turf; individual blades have cream-colored spots with dark edges. **CONTROL**: Sanitation; see Alabama Pest Management Handbook.

**Bahia Drechslera Leaf Spot and Blight**: Leaf spots, blight; may be associated with low potassium levels in soil. **CONTROL**: Frequent harvest.

**Basil Downy Mildew**: Yellowing or stippling of leaves; stunting; leaf distortion and yellowing; premature leaf shed. **CONTROL**: plant in full sunlight with good air movement; maximize plant spacing; use drip irrigation.

**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 irregularly shaped galls. **CONTROL**: Remove plants; use resistant varieties; solarization. See ANR-1024.

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

**Bermuda and Bermudagrass Bipolaris Leaf Spot/Blight**: Small, elongate, brown leaf spots which may coalesce; stem blight; may be associated with low soil potassium. **CONTROL**: See Alabama Pest Management Handbook under Helminthosporium melting-out; submit soil sample.

**Bermudagrass 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.

**Bermudagrass 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 and Bermudagrass Dreschlera or Helminthosporium Leaf Spots (Melting Out)**: Small oval or rectangular brown spots may occur on all plant parts; blight occurs when spotting heavy; may be associated with low potassium in soil. **CONTROL**: See Alabama Pest Management Handbook; submit soil sample.


**Bermudagrass Take-All**: Areas of turf yellow and thin; roots decay in spots. **CONTROL**: See Alabama Pest Management Handbook and ANR-823.

**Birch Anthracnose**: Brown leaf spots or blotches, often following vein. **CONTROL**: Remove and destroy fallen leaves.
Blueberry "Botryosphaeria canker": Elongate, sunken, cracked, lesions. CONTROL: Prune affected stems.

Blueberry "Phomopsis Canker": Elongate, cracked, sunken stem cankers; dieback. CONTROL: Prune affected limbs 3 inches beyond canker edge.

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

Boxwood "Macrophoma Blight": Leaves red to yellow with scattered small black bodies on surface. CONTROL: Remove affected branches 3 inches beyond damage; control plant stress. See Alabama Pest Management Handbook and ANR-222.

Boxwood "Phytophthora Root Rot": Roots become light brown, rotted, water-soaked; the outer cortex of the root is easily separated from its core; dieback. 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.

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 "Glomerella Canker": Sunken, cracked stem lesions; dieback. CONTROL: Prune affected limbs 3 inches beyond canker edge.

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

Cantaloupe "Downy Mildew": Small yellow areas on upper leaf surface which expand and may become brown and necrotic; undersurface may develop a light gray to dark purple downy growth. CONTROL: 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, sulfer. See ANR-974.

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 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, Yoshino 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.

Chrysanthemum Fusarium Wilt or Crown Rot: Leaves yellow and wilt; lower stem brown, wilted; plant death. CONTROL: Damaged plants must be removed and destroyed; sanitation, solarization, reduce irrigation; rotate from mums several years. See Alabama Pest Management Handbook.


Coneflower Fusarium Crown and Root Rot: Decay of stem at soil level, root decay. CONTROL: Plant composites to another location for several years.

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

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.

Cotton Alternaria Leaf Spot: Irregular or round, zonate brown leaf spots up to 1 cm. CONTROL: Usually not a serious problem.
**Cotton Bacterial Blight:** Initially, small water-soaked spots on cotyledons; elongate, black lesions often girdle hypocotyls causing seedling death; angular leaf spots may enlarge and cause defoliation; symptoms on leaves may occur on the main ribs and white, waxy flecks may form on old lesions on leaves, stems, and bolls; elongate, dark sooty lesions extending from leaves to petioles to stems, this “blackarm” being the most serious symptom; round, water-soaked lesions on bolls. **CONTROL:** Resistance, sanitation; use acid-delinted and fungicide-treated seed.

**Cotton Reniform Nematode:** Light green or yellow foliage, mottling; stunted, irregular growth; root necrosis. **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.

**Cotton Stemphylium Leaf Spots:** Leaf spots of small, brown, concentric rings. **CONTROL:** If caught early, foliar potash sprays.

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

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

**Daylily Anthracnose:** Circular brown leaf spots, dieback. **CONTROL:** Remove damaged leaves; see Alabama Pest Management Handbook.

**Daylily Rust:** Orange pustules evident early; elongate yellow-brown leaf spots. **CONTROL:** Sanitation. See TI PP-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.

**Euonymus**  **Rhizoctonia Root Rot**: Dieback, yellowing; roots dry rotted. **CONTROL**: Remove plants and associated soil.

**Fig**  **Anthracnose**: Circular or angular brown leaf spots; fruit rot. **CONTROL**: Sanitation. Do not use overhead irrigation.

**Fig**  **Cercospora Leaf Spot**: Irregular gray-brown leaf spots or blotches. **CONTROL**: Sanitation. Do not use overhead irrigation.

**Fig**  **Rust**: Reddish brown spots on upper leaf surfaces, yellow-orange spots on leaf undersurfaces. **CONTROL**: Sanitation. Do not use overhead irrigation.

**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.


**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.

**Grape**  **Pierce’s Disease (Bacterial Scorch)**: Leaf edge scorch begins with older foliage; dieback. **CONTROL**: Remove damaged plants.

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

**Holly**  **Pythium Root Rot**: Foliage on lower limbs becomes yellowed; roots rotted and discolored. **CONTROL**: Sanitation, improve drainage; see Alabama Pest Management Handbook.

**Hosta**  **Anthracnose (Colletotrichum) Leaf Spot**: Brown leaf spots. **CONTROL**: Sanitation; Cleary’s 3336 protective spray.
**Hosta Southern Blight**: White mold on lower stem; stem soft and limp. **CONTROL**: Sanitation; See Alabama Pest Management Handbook.

**Hydrangea Anthracnose**: Brown circular leaf and blossom spots. **CONTROL**: Sanitation; Cleary’s 3336.

**Hydrangea 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 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 Corynespora Leaf Spot**: Round, brown, often zonate leaf spots. **CONTROL**: Sanitation.

**Hydrangea 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 rotted, deteriorated. **CONTROL**: Remove infected plants. Reduce soil water levels. See Alabama Pest Management Handbook.

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

**Impatiens Downy Mildew**: Yellowing or stippling of leaves, which may eventually curl downward along the leaf margin; stunting along with leaf distortion and yellowing; eventually premature leaf shed. **CONTROL**: purchasing symptom-free bedding or pot-grown plants; immediately remove and disposal of diseased plants; see TI-711.

**Impatiens Phytophthora Root and Crown Rots**: Wet, brown lesions on crown and roots. **CONTROL**: Sanitation; see Alabama Pest Management Handbook; see ANR-571.

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

**Iris Bacterial Soft Rot**: Foul-smelling decay of rhizomes. **CONTROL**: Eliminate iris borers; dig bulbs, remove all rotted tissue, allow to dry before replanting.
**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**  *Phylllosticta Leaf Spot*: Round to oval, brown leaf spots. **CONTROL**: Sanitation.

**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.

**Jasmine**  *Phytophthora Root Rot*: Dieback; roots brown and soft rotted. **CONTROL**: Sanitation, improve soil drainage; may require replacing with *Phytophthora*-resistant ground cover. See ANR-571.

**Juniper**: See Cedar, Red.

**Liriope**  *Colletotrichum Rot (Anthracnose)*: Irregular brown leaf blotches; dieback, brown rot of lower stem. **CONTROL**: Cut back plants, sanitation; eliminate stress factors. Protective sprays such as Heritage, Cleary’s 3336, Duosan, Zyban, or Sys Star WDG in commercial settings.


**Liriope**  *Phytophthora Crown Rot*: Crowns brown, wet-rotted; plants wilt, yellow, die. **CONTROL**: Remove plants and associated soil; improve drainage. Fungicides not recommended in landscapes.


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

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

**Maple**  *Phylllosticta 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**  *Phytophthora Root Rot*: Roots brown to reddish-brown and brittle. Leaf yellowing and drop. The fungus may girdle stem near soil line. Symptoms often show on one plant then spread to nearby plants. **CONTROL**: See ANR-571.
**Maple, Japanese**  Armillaria Root Rot:  Dieback; sunken, semicircular lesions at base of tree may be seen; black, threadlike rhizomorphs may be present on roots and surrounding soil; white mycelial mat under bark.  CONTROL:  Removing dead bark to expose mycelia may be effective if caught early; otherwise remove affected trees, including roots.  See ANR-907.

**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.

**Millet**  Gray Leaf Spot:  Irregular, gray to brown, leaf spots up to 6 mm.  CONTROL:  Crop rotation.

**Morning Glory**  Rust:  Yellow leaf spots; powdery orange masses on leaf surfaces.  CONTROL:  Sanitation.

**Muscadine**  See Grape.

**Oak**  Anthracnose:  Small or large leaf blotches often follow vein or leaf edge.  CONTROL:  See Alabama Pest Management Handbook.

**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**  Bacterial Leaf Scorch:  Scattered leaves with brown edges; dieback over 2-3 years.  CONTROL:  Remove tree to prevent spread.

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

**Oak**  Hypoxylon Canker:  Dieback; bark falls off when severe revealing brown, black, or gray fungal mats.  CONTROL:  Prune affected branches 3 inches beyond canker edge, dipping shears in alcohol or 10% bleach between cuts.

**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**  Phomopsis Canker:  Woody twig and branch galls.  CONTROL:  Sanitation.

**Oak**  Powdery Mildew:  Light colored dusting on leaves; some yellowing and leaf distortion.  CONTROL:  Sanitation.

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

**Okra**  Fusarium Wilt:  Whole plant yellowed, stunted, wilted; darkened vascular system.  CONTROL:  Rotate from okra 6-10 years.
**Okra  Root Knot Nematode:** Large, irregular root swellings; poor development. **CONTROL:** Rotation, sanitation; see ANR-856.

**Peanut  Cylindrocladium Black Rot:** Lower stems with black decay. **CONTROL:** Contact Austin Hagan.

**Peanut  Diplodia Collar Rot:** Wilt, dieback; root and crown rot; roots become gray to black and shredded. **CONTROL:** See Austin Hagan.

**Peanut  Late Leaf Spot:** Initially, small yellow to brown spots become dark brown to black, 7-8 mm round spots with feathery edges. **CONTROL:** 3-4 year rotations, resistance, deep turning. See ANR-369.

**Peanut  Rhizoctonia Limb Rot:** Oval, brown stem spots; whole limbs may be blighted. **CONTROL:** See Alabama Pest Management Handbook and ANR-350.

**Peanut  Root Knot Nematode:** Plants stunted, poor growth; galls on roots. **CONTROL:** Rotation; see Timely Information PP-695.

**Peanut  Southern Blight (White Mold):** Soft, brown decay of stem near soil line; white fan-shaped mold with small, round black spores on soil. **CONTROL:** See Alabama Pest Management Handbook.

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

**Pear:** See also under Apple.

**Pecan  Scab:** Olive green to black, rough, slightly raised spots on leaves, petioles, and nut shucks. **CONTROL:** Sanitation; see Alabama Pest Management Handbook or, for homeowners, ANR-50.

**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  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** See Vinca.
**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.

**Plum**  **Bacterial Scorch**: Leaf edges appear scorched; leaves die and remain attached; dieback, eventual tree death. **CONTROL**: Remove affected trees.

**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**  **Fusarium Fruit Rot**: Soft, brown, sunken rot with white to orange fluffy mycelia. **CONTROL**: Sanitation; rotate away from pumpkin.

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

**Pumpkin**  **Watermelon Mosaic Virus**: Yellow and green mosaic pattern on leaves and fruit; stunting. **CONTROL**: Sanitation; control insects and weeds. Do not save seeds.

**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. **CONTROL**: See ANR-505 and Alabama Pest Management Handbook.

**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**  **Cercospora Leaf Spot**: Circular brown leaf spots. **CONTROL**: See Alabama Pest Management Handbook 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**  **Phytophthora Root Rot**: Dieback; roots brown and wet-rotted, later dried out. **CONTROL**: Remove and destroy all plants with dieback; improve soil drainage, water levels. Protective drenches may prevent spread to nearby healthy plants. See Alabama Pest Management Handbook.

**Rose**  **Powdery Mildew**: White powdery coating on leaves and stems. **CONTROL**: See Alabama Pest Management Handbook and ANR-407.
**Sage  Phytophthora Root and Crown Rot:** Lower stem and roots brown and wet-rotted; plant wilts. CONTROL: Remove diseased plants; reduce irrigation.

**Sorghum Anthracnose:** Yellowish round leaf spots with red, brown, or black edges; spots may coalesce; bleached lesions with reddish edges on stalks; head rot may occur. CONTROL: Rotation; plow under crop residues.

**Sorghum Gray Leaf Spot:** Small red leaf spots enlarge to angular red to purple spots; these may coalesce into elongate stripes. Under moist conditions sporulation gives spots a gray cast. CONTROL: This is a common disease but rarely causes significant damage.

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

**Sorghum Rust:** Red, purple, or tan flecks on both leaf surfaces; may become dark reddish brown blisters. CONTROL: Resistance.

**Sorghum Target Spot:** Round or oval leaf and stem spots. CONTROL: 2-year rotation; contact Austin Hagan.

**Sorghum Zonate Leaf Spot:** Zonate leaf spots of red-purple and yellow bands. CONTROL: Sanitation.

**Soybean Aerial Blight:** Small or large dark brown, water-soaked lesions on leaves, stems, pods; older blight becomes tan to black and dry; leaf fall. CONTROL: See Alabama Pest Management Handbook or Soybean Pest Management, ANR-413.

**Soybean Anthracnose:** Irregular brown lesions on stems, pods, and petioles; lesions may develop minute black spines in later stages. CONTROL: Rotation; plow under crop residues.

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

**Soybean Bacterial Pustule:** Dark brown or black, slightly raised leaf spot; edges may be water-soaked. CONTROL: None.

**Soybean Charcoal Rot:** Lower stem becomes weak and shredded; pith may develop salt-and-pepper appearance. CONTROL: Rotation; deep plow.

**Soybean Downy Mildew:** Yellow leaf spots with corresponding gray to purple spots on undersurface. CONTROL: See Alabama Pest Management Handbook or Soybean Pest Management, ANR-413.

**Soybean Frogeye Leaf Spot (Cercospora Leaf Spot):** Gray spots with dark red borders on leaves, stems, and pods; coalesced spots may lead to leaf drop. CONTROL: Healthy seed; 2-year rotation; see Alabama Pest Management Handbook, ANR-413.
**Soybean Pod and Stem Blight**: Slight discoloration of pods, stems, petioles, and seeds; lines of black dots appear in wet weather. **CONTROL**: See Soybean Spray Guide.

**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.

**Soybean Southern Blight**: Crown becomes wet and rotted; white mold may develop at soil line. **CONTROL**: Deep plow.

**Soybean Stem Canker**: Small reddish brown stem lesions, usually near leaf node; lesions grow, become black, sunken; plant death; interveinal yellowing or necrosis in leaves. **CONTROL**: Contact Ed Sikora.

**Soybean Sudden Death Syndrome (Fusarium Root Rot)**: Generally affects small plants only. Tap and lateral roots rotted; leaves develop interveinal browning; plants wilt and die. **CONTROL**: Rotation; plant when soil is moist; promote adventitious root development by ridging soil around plant base.

**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.

**Sunflower Alternaria Leaf Spot**: Circular to oval leaf spots. **CONTROL**: Rotation.

**Sweet Potato Fusarium Surface Rot on Roots**: Firm, dry, round, brown lesions on roots; roots may become shrunked and hard in storage. May lead to the more aggressive **Fusarium Root Rot** in which lesions may be concentric dark and light brown rings and rotting extends to internal tissue. **CONTROL**: Avoid wounding at harvest; see ANR-917.

**Sweet Potato Scurf**: Brown to black superficial spots at harvest which may merge to encompass whole potato surface. **CONTROL**: Rotation; 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 Cucumber Mosaic Virus:** Leaves mottled, curled, narrowed; plants stunted, bushy. CONTROL: Sanitation; control aphids and weeds.

**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 Pith Necrosis:** Severe problems are isolated. Initially, chlorosis of young leaves; if severe, chlorosis, wilting, and necrosis of lower stem. Affected stem may appear firm but when cut it is dark, hollow, or chambered. CONTROL: Avoid excess nitrogen and high humidity.

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

**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 Target Spot:** Yellow or brown, often target-shaped, leaf spots. CONTROL: Sanitation; see Alabama Pest Management Handbook.
**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.

**Tomato** Yellow Curl Leaf Virus: Plants stunted; leaves curled, yellowed, or reduced in size. CONTROL: Sanitation; control whiteflies.

**Turnip** Cercospora Leaf Spot: Irregular white to tan leaf spots with brown borders. CONTROL: Sanitation, rotation; see Alabama Pest Management Handbook.

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

**Vinca, Annual** Phytophthora Stem, Crown, and Root Rots: Stems or roots brown, water-soaked. CONTROL: Sanitation; improve soil drainage.

**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; brown, sunken stem lesions. CONTROL: Sanitation; Cleary’s 3336, Benomyl WP, Domain.

**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.

**Wax Myrtle** Phytophthora Root Rot: Wilt, dieback; roots become brown, soft rotted. CONTROL: Sanitation; eliminate excess soil moisture.

**Willow** Cercospora Leaf Spot: Small brown leaf spots. CONTROL: Sanitation.

**Zinnia** Alternaria Leaf Spot: Dark gray, round or irregular leaf spots; may also affect blossoms. CONTROL: Sanitation; see Alabama Pest Management Handbook.

**Zinnia** Rhizoctonia solani Stem Blight: Dark brown rotted areas on stem and perhaps leaves. CONTROL: Sanitation.

**Zoysia** Bipolaris Leaf Blight: Small, brown leaf spots may become large blighted areas. CONTROL: See Alabama Pest Management Handbook under Helminthosporium.
**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 Curvularia Blight:** An uncommon disease but occurs during hot, dry conditions; leaf spot, blight; blades may appear gray to black. **CONTROL:** See Alabama Pest Management Handbook under Helminthosporium.

**Zoysia Dollar Spot:** Silver dollar-sized bleached spots in turf; individual blades with irregular water-soaked spots that are white with dark borders. **CONTROL:** See Alabama Pest Management Handbook and ANR-493.

**Zoysia Fairy Ring:** Yellow then brown circular or semi-circular areas in the turf. **CONTROL:** See Alabama Pest Management Handbook and ANR-372.

**Zoysia Ring Nematode:** Poor growth and root development, dieback. **CONTROL:** See ANR-523.

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

**Zoysia Take-All:** Circular light to reddish-brown patches of turf; individual plants yellow and die; black lesions on stolons and roots. **CONTROL:** Maintain soil pH between 5.5-6.0; use ammonium forms of nitrogen.