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PP-534

**JULY PLANT DISEASES FROM THE AUBURN
PLANT DIAGNOSTIC LAB**

**JULY PLANT DISEASES FROM THE BIRMINGHAM
PLANT DIAGNOSTIC LAB**

DISEASE POSSIBILITIES FOR AUGUST

LAB NOTES

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Auburn Plant Disease Report-July (J. Mullen)

July was seasonably warm with day temperatures in the 90°F range for most of the state. Moisture was variable across the state with parts of northern and southern Alabama receiving showers frequently and other parts of the state, such as the Auburn area, receiving very little rain. Our plant sample numbers at the Auburn lab were about normal for July with 181 plant samples received.

Helminthosporium-type (*Bipolaris*, *Exserohilum*, and *Drechslera* spp.) leaf spots/blights and crown rots of bermuda were the most commonly-seen problems in July, seen mostly on bermuda samples sent from the central and eastern sections of the state. This disease was also seen on a few zoysia samples and a St. Augustine grass sample. These leaf spots may vary in size and shape, depending upon the genus & species of the Helminthosporium-type fungus and the grass host involved. Weather conditions may also affect the leaf spot appearance. If weather conditions are favorable for disease development and spread (alternating periods of dry and wet conditions), leaf spots may coalesce and whole leaves and crown areas will become blighted. When crowns are infected, whole plants may die. Disease control involves appropriate fertilization. Potassium deficiencies have been shown to cause increased susceptibilities to some Helminthosporium diseases of turf grasses. See ANR-621 and the 2002

Alabama Pest Management Handbook for more information and current fungicide recommendations for this disease.

Pythium crown and root rots were seen in July on aster, Leyland cypress cuttings, Dianthus, Hosta, Liriope, pepper, and salvia. Pythium is well-known to cause root decay of herbaceous plants and sometimes feeder roots of woody plants when conditions are wet for a prolonged period of time. Pythium requires wet conditions in order for the fungus to develop and cause disease. Research has also shown that previously stressed or damaged roots are more susceptible to Pythium when wet conditions arrive. A drought stress or root injury from excess application of fertilizer has been shown to result in increased susceptibility and incidence of Pythium root rot disease when wet conditions follow the injury. Disease control typically involves removal of all damaged plants, reducing water levels in the soil or media, and possibly adjusting water drainage in the soil/media. Fungicide drenches are used in some nursery/greenhouse situations. See the 2002 edition of the Alabama Pest Management Handbook for the specific crop of interest.

Pestalotia needle blight and Phomopsis tip blight were seen on juniper. The Pestalotia needle blight is typically seen as a branch dieback or inner needle blight of lower foliage of juniper. The fruiting bodies of Pestalotia are typically present on the browning needles. These black bodies are often visible without any magnification. Diagnostic spores are usually present and can be detected with microscopic study at 100x. Disease control usually requires the elimination of stress factors. Cleary's 3336 will provide protection against new infections. Phomopsis tip blight is a fungal disease that may occur on healthy vigorous or weakened junipers, deodar cedar, arborvitae, or cypress. Typically twig and branch tips on lower sections of junipers will first show the brown tip symptoms. The browning will gradually spread down the twig. Black fruiting bodies of the fungus may be visible. The diagnostic spores are observed with magnification of 100x. Disease control requires removal of damaged limb sections and protective sprays of Cleary's 3336 or other labelled fungicides. See the Alabama Pest Management Handbook and ANR-1173.

Daylily rust, caused by *Puccinia hemerocallidis*, was diagnosed on some greenhouse/nursery daylily samples. This disease is easily diagnosed if samples are taken as disease is in early stages of development. The yellow-orange (rusty) spore masses may be seen with a visual examination sometimes. The spore masses can be easily seen with a microscopic study if disease is collected as leaf spots are distinct with green leaf color surrounding the leaf spots. Once the leaves are dead, it may not be possible to diagnose the problem. Rust fungi are obligate parasites and so they cannot be cultured in the lab as an aid in diagnosis. Disease control involves sanitation (cutting off diseased plant foliage) or plant removal if disease is severe. The fungicides Banner Maxx or Heritage have given good disease control when applied according to label recommendations.

Tomato spotted wilt virus was seen on tomato and peanut in July. This disease was fairly wide-spread on garden tomatoes and peanuts this past month. On tomato, the plants initially show black blotches and ringspots. Fruit may develop yellow ring patterns. Plants are stunted, wilt, and eventually die. Disease control is difficult. Plant removal as soon as

symptoms are noticed and thrips control with insecticides may help slow the spread of the disease. But, insecticides are often not 100% effective, and thrips spread of the disease still occurs. Peanut symptoms develop as a yellow mottle and sometimes yellow ringspots on leaves. Infected plants do not grow well and the nut crop is reduced. Systemic insecticides may help slow the spread of this disease.

Sclerotium rolfsii was observed on tomato and Hosta in July. This is a common disease in Alabama in the summer when temperatures are warm and moisture is abundant. The fungus typically causes a crown rot at the soil-line. Visible white mold often develops around the soft decay of the lower stem or trunk of the plant. Small brown-black, round, mustard-seed-sized sclerotia (over-wintering bodies) often develop in the white mold. This crown rot disease often develops on herbaceous plants. Tomato and hosta are frequently damaged. But, this fungus has a very wide host range and woody plants, such as apple trees, may also be affected. Infected herbaceous plants usually show a wilt and collapse of the lower stem. Woody plants usually develop a dieback and wilt as the lower trunk decays. Disease control is difficult as is often the case with soil-borne fungal pathogens. Plant removal is required. Soil solarization may be effective. Prostar or Terraclor are labelled for some plants.

Table 1. Plant Diseases Seen In The Auburn Plant Diagnostic Lab in July.

<u>Plant</u>	<u>Disease</u>	<u>County</u>
Aster	Pythium Root Rot	*
Azalea	Colletotrichum Leaf Spot	Lauderdale
Bentgrass	Brown Patch (<i>Rhizoctonia</i>)	Jefferson
	Pythium Blight	Jefferson
Bermuda	Exserohilum Blight & Crown Rot	Russell
	Exserohilum Leaf Spot	Talladega
	Drechslera Crown Rot	Pike
	Pythium Blight	Cullman
Bermuda, Hybrid	Bipolaris Crown Rot & Blight	Elmore
<u>Plant</u>	<u>Disease</u>	<u>County</u>
Bermuda, Tifton	Bipolaris Crown Rot & Blight	Autauga
	Brown Patch (<i>Rhizoctonia</i>)	Autauga

Bougainvillea	Anthrachnose (<i>Colletotrichum</i>)	Limestone
Centipede	Brown Patch (<i>Rhizoctonia</i>)	Elmore, Monroe, Mobile
	Take-All Patch (<i>Gaeumannomyces</i>)	Mobile
Chrysanthemum	Phoma Leaf Spot & Blight	Lee
Corn	Southern Corn Leaf Blight (<i>Bipolaris maydis</i>)	Shelby
Cucumber	Root-Knot Nematode (<i>Meloidogyne</i>)	Dallas
Cypress, Leyland	Pythium Cutting End Rot	*
Dianthus	Fusarium Crown & Root Rot	*
	Pythium Crown & Root Rot	*
Daylily	Anthrachnose (<i>Colletotrichum</i>)	*, Mobile
	Cercospora Leaf Spot	*
	Kabatiella Streak	*
	Daylily Rust (<i>Puccinia hemerocallidis</i>)	*
Fescue	Brown Patch (<i>Rhizoctonia</i>)	Cleburne
Gardenia	Phytophthora Crown & Root Rot	*
Hosta	Pythium Root Rot	*
Juniper	Pestalotia Blight	Lee
	Phomopsis Blight	Montgomery
<u>Plant</u>	<u>Disease</u>	<u>County</u>
Liriope	Anthrachnose (<i>Colletotrichum</i>)	Baldwin
	Pythium & Fusarium Root Rot	Baldwin
Maple	Botryosphaeria Canker	Montgomery

Maple, Japanese	Phomopsis Canker	Lee
Nectarine	Brown Rot (<i>Monilinia</i>)	Montgomery
Oak	Hypoxylon Canker	Colbert
Peach	Brown Rot (<i>Monilinia</i>)	Montgomery
Pear, Bradford	Botryosphaeria Canker	Houston
	Fireblight (<i>Erwinia amylovora</i>)	Russell
Pecan	Powdery Mildew	Madison
Pepper	Bacterial Leaf Spot (<i>Xanthomonas</i>)	Dallas
	Pythium Root Rot	Geneva
Pumpkin	Root Knot Nematode (<i>Meloidogyne</i>)	Escambia
	Watermelon Mosaic Virus	Cullman
Salvia	Pythium Root Rot	*
Soybean	Anthracnose (<i>Colletotrichum</i>)	Dallas
	Ascochyta Leaf Spot	Dallas
	Downy Mildew (<i>Peronospora manshurica</i>)	Pickens
	Phyllosticta Leaf Spot	Pickens
	Rhizoctonia Crown & Stem Rot	Dallas
<u>Plant</u>	<u>Disease</u>	<u>County</u>
	Root Knot Nematode (<i>Meloidogyne</i>)	Washington
	Target Spot (<i>Corynespora</i>)	Pickens
St. Augustine	Brown Patch (<i>Rhizoctonia</i>)	Mobile & Monroe
	Gray Leaf Spot (<i>Piricularia</i>)	Elmore

	Helminthosporium Leaf Spot	Elmore
	Take-All Patch (<i>Gaeumannomyces</i>)	Mobile
Tomato	Bacterial Spot (<i>Xanthomonas</i>)	Cullman?
	Colletotrichum on Lower Stem Rot	Blount
	Early Blight (<i>Alternaria alternata</i>)	Russell
	Septoria Leaf Spot	Franklin
	Southern Blight (<i>Sclerotium rolfsii</i>)	Colbert, Cullman
	Tomato Spotted Wilt Virus	Lee
Zoysia	Bipolaris Leaf Spot	Colbert
	Brown Patch (<i>Rhizoctonia</i>)	Montgomery
	Dollar Spot (<i>Sclerotinia</i>)	Autauga
	Helminthosporium Leaf Spot	*, Elmore

*Counties are not reported for greenhouse and nursery diseases.

Birmingham Plant Disease Report-July (J. Jacobi)

The lab received 128 samples during the month of July. Most of the disease and pest problems were typical for mid-summer. These included southern blight of cally lily and tomato, dollar spot on turfgrasses, and powdery mildew on various ornamentals. Daylily rust was seen in another large collection of daylilies.

Table 2. 2002 July Problems Seen In the Birmingham Plant Diagnostic Lab.

<u>Plant</u>	<u>Problem</u>	<u>County</u>
Apple	Cedar Apple Rust	Jefferson
	Frog Eye Leaf Spot	Jefferson
Azalea	Lacebugs(2)	Jefferson (2)
	Phomopsis Dieback	Jefferson
	Powdery Mildew	Jefferson
Begonia	Pythium Crown Rot	Jefferson
Bentgrass	Anthracnose (<i>Colletotrichum</i>)	* (2)
	Dollar Spot	*
	Pythium Root Rot	* (2)
Bermudagrass	Black Layer, Poor Drainage	Jefferson (2)
	Chemical Damage	Jefferson
	Dollar Spot	Jefferson (4)
	Melting-out (<i>Curvularia</i>)	Jefferson
Blueberry	Phyllosticta Leaf Spot	Shelby
Boxwood	Volutella Blight	Jefferson
Buckeye	Leaf Blotch (<i>Guignardia</i>)	Jefferson
<u>Plant</u>	<u>Problem</u>	<u>County</u>

Calla Lily	Southern Blight (<i>Sclerotium</i>)	Jefferson
Centipedegrass	Brown Patch	Blount
	Dollar Spot	Coosa (2)
	Drought	Jefferson (2)
Cleome	Rhizoctonia Root Rot	Jefferson
Crape Myrtle	Cercospora Leaf Spot	Jefferson
	Flea Beetle (<i>Altica Foliacca</i>)	Jefferson
	Powdery Mildew	Jefferson
Cypress, Leyland	Cercospora Needle Blight	Jefferson
Daylily	Daylily Rust	Jefferson
Dogwood	Powdery Mildew	Jefferson (2)
	Septoria Leaf Spot	Jefferson (2)
	Spot Anthracnose	Jefferson
Holly, Japanese	Pythium Root Rot	Jefferson
Honeydew Melon	Powdery Mildew	Shelby
Ivy, Algerian	Phytophthora Root Rot	Jefferson
Juniper	Spider Mites	Jefferson
Leucothoe, Florida Jefferson	Drought, Pestalotia	Leaf Spot (secondary)
Maple	Marginal Leaf Scorch	Jefferson
	Suspect Fungal Canker	Jefferson
<u>Plant</u>	<u>Problem</u>	<u>County</u>

Mondograss	Anthracnose	Jefferson
	Web Blight (<i>Rhizoctonia</i>)	Jefferson
Oak, Southern Red	Monochetia Leaf Blotch	Jefferson (2)
Peony	Botrytis Blight	Jefferson
Poplar (Populus)	Marssonina Leaf Spot	Jefferson
Sycamore	Canker (<i>Botrodiploidia</i>)	Jefferson
Tomato	Early Blight	Jefferson
	Fusarium Wilt	Jefferson
	Spider Mites	Jefferson (2)
	Southern Blight	Jefferson
Zoysiagrass	Brown Patch	Jefferson
	Dollar Spot	Jefferson
	Leaf Rust	Jefferson
	Zoysia Mite	Jefferson

*Counties are not reported for greenhouse and nursery samples.

Table 3. Brief Disease Descriptions and Control Recommendations for Diseases Often seen in August.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Ajuga	<i>Sclerotium rolfsii</i> Crown Rot	Stems collapse at soil line; a white mold with brown mustard-seed sized sclerotia present.	Sanitation; Solarization.
Apple	Bitter Rot on Fruit (<i>Colletotrichum</i>)	Small, circular, light-brown spots on the fruit. Spots enlarge and become sunken in the center. Concentric rings of pink pustules may occur. Rotted flesh is watery but not mushy.	Regular fungicide sprays. See the Ala. Pest Management Handbook.
	Black Rot (<i>Botryosphaeria</i>)	<u>Fruit</u> : A brown spot on fruit that enlarges and usually becomes black; rotted flesh is firm. <u>Leaf</u> : Brown or yellowish-brown spots (C -1/4 inch diam.) with purple margins and irregular shape. <u>Canker</u> : Lesions on branches or trunk are slightly sunken, reddish-brown and show concentric rings of cracked bark.	Sanitation; recommend fungicide treatments.
	Fireblight (<i>Erwinia</i>)	During mid to late summer, fireblight bacteria are spread during wet conditions by insects and water droplets from blighted twigs and cankers to the edges of young leaves which develop black V-shaped and circular edge spots which slowly spread downward.	Prune affected areas 14 inches beyond damage. (Streptomycin is only recommended for protection of blossom infections.)

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Fly Speck (<i>Microthyriella</i>)	Tiny black dots occurring in groups on the surface of the apple skin.	Sanitation; see Ala. Pest Management Handbook or Fruit Spray Guide.
	Sooty Blotch (<i>Gloeodes</i>)	Blotches of gray (sooty appearance) on the apple skin; often associated with fly speck.	Sanitation; see Ala. Pest Management Handbook or Fruit Spray Guide.
	Southern Blight (<i>Sclerotium rolfsii</i>)	Sunken, water-soaked canker at base of the trunk; dieback.	Sanitation; solarization; fumigation; deep plowing to displace sclerotia away from root zone.
Arbor-vitae	Phytophthora Root Rot	Roots show a wet, brown decay	Sanitation. See AL Pest Management Handbook.
Aucuba	Botryosphaeria Canker (Blotch)	Black, large, irregular lesions on leaves and stems; dieback beyond cankers.	Sanitation; Cleary's 3336, Domain, or benomyl labelled for ornamentals.
	Helminthosporium Leaf Spot	Brown, elongate leaf lesion.	Sanitation. Cleary's 3336.
Azalea	Phomopsis Dieback	Elongated sunken lesions on branches and twigs.	Pruning; Cleary's 3336 protective sprays.
	Phytophthora Crown/Root Rot	Crowns/roots become brown and wet or water-soaked.	See the Ala. Pest Management Handbook.
Bahia Grass	Dollar Spot (<i>Sclerotinia</i>)	White spots/ lesions on leaf blades; whole sections of turf - beginning with dollar spot size areas - may become blighted. A problem during dry periods.	Frequent cutting.
Basil	Rhizoctonia Aerial Blight	Blight of foliage, esp., lower foliage.	----
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Beans, Garden	Anthracoze	(<i>Colletotrichum</i>)	Circular and irregular

reddish spots develop on leaves and pods.

See the Ala. Pest Management Handbook or Vegetable Spray Guide.

Fusarium Wilt

Plants wilt easily when water is restricted; yellowing of lower leaves spreads up the plant.

Rotate the area away from beans for 10 years or solarization.

Root-Knot Nematode (*Meloidogyne*)

Plants are yellowed and stunted. Roots are galled.

Homeowners should use pre-plant treatment of solarization or crop rotation.

Beans, Butter

Mosaic Virus

Regular yellow blotches or patterns on foliage.

Remove diseased plants. Do not save seed. Control insects.

Rhizoctonia Lower Stem Rot

Dark brown decay of lower stem.

Sanitation. See Ala. Pest Management Handbook.

Begonia

Pythium Root Rot-Rhizoctonia/Fusarium Lower Stem/Root Rot

Lower stem brown and decayed.

See the Ala. Pest Management Handbook.

Ring Nematode (*Criconemoides*)

Areas of turf yellow and die.

Avoid stressful situations. Commercial turf areas may apply treatment.

Bentgrass

Anthracnose (*Colletotrichum*)

Leaf spot and blight.

Collect grass clippings; apply protective sprays of Cleary's 3336.

Pythium Blight

Grass blades become browned, wet, water-soaked, sometimes greasy-looking.

See the Ala. Pest Management Handbook.

Rhizoctonia Brown Patch

Brown, irregular blotches on leaves; dead patches (1 or more feet diam.) in lawn.

See ANR-492 or the Ala. Pest Management Handbook.

Plant

Disease

Description

Control

Ring Nematode

(*Criconemoides*)

Areas of turf yellow and die.

Avoid stressful situations. Commercial turf areas may be treated with protective nematicides.

Sting Nematode Damage
(*Belonolaimus*)

Areas of turf yellow and die.

Avoid stressful situations. Commercial turf areas may be treated with protective nematicides.

Stunt Nematode
(*Tylenchorynchus*)

High levels of nematode can cause enough root damage to result in yellowing, stunting, and dieback.

Avoid stressful situations. Commercial turf areas may be treated with protective nematicides.

Bermuda

Brown Patch
(*Rhizoctonia*)

Brown, irregular blotches on leaves; dead patches (1 or more feet diam.) in lawn.

See ANR-492 or the Ala. Pest Management Handbook.

Decline
(*Gaeumannomyces*)

Thinning out of grass in patches.

Sanitation; Keep pH at 6.0; do not use nitrate fertilizers.

Dollar Spot
(*Sclerotinia*)

Silver dollar-sized, bleached-out spots appear in lawn. Spots enlarge. Individual grass blades develop white lesions with brown borders.

See the Ala. Pest Management Handbook.

Helminthosporium Blight/Leaf Spot

Leaf lesions are irregular shaped and brownish-green; old lesions become tan or white.

Sanitation; recommend fungicide treatments (at least 3).

Plant

Disease

Description

Control

Ring Nematode

(*Criconemoides*)

Areas of turf yellow and die.	Avoid stressful situations. Commercial turf areas may be treated with protective nematicides.		
	Take-all Patch (<i>Gaeumannomyces</i>)	Yellowing of individual plants followed by dieback; thinning out of grass in patches.	See the Ala. Pest Management Handbook.
Blackberry	Septoria Leaf Spot	New infection spots are greenish black and circular-angular. Older spots are gray-white with well-defined margin, 1-2 mm diameter; some shot-hole, defoliation.	Sanitation of fallen leaves; See AL Pest Management Handbook.
Blueberry	Botryosphaeria Canker	Dark, brown-black lesions on current year's growth. Foliage beyond the canker turns yellow and eventually the branch will die.	Pruning; Benlate sprays.
	Phomopsis Cane Canker	Elongated, cracked, sunken cankers	Prune out cankers, making cuts 3-4 inches beyond the lesion edge.
	Septoria Leaf Spot	Small, circular, white-tan spots with purple borders; stem lesions are sunken with tan or gray centers with red-brown margin.	Follow recommendations for anthracnose on blueberry.
	Summer Stress Chlorosis	Plants become yellowed and sometimes leaves develop small red spots.	Increase irrigation and nitrogen application.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Boxwood	Phytophthora Root Rot	Roots are cream-colored; outer cortex slips readily away from the central core.	Sanitation. Improve water relations. See AL Pest Management Handbook.

	Pythium Feeder Root Rot	Roots are cream-colored; outer cortex slips readily away from the central core.	Sanitation. Improve water relations. See AL Pest Management Handbook.
Cactus	Fusarium Crown Rot	Crown area shows brown dried decay.	Sanitation; protective drenches of Cleary's 3336 or Halt.
	Volutella Blight	Sunken elongated lesions on branches or twigs which may be covered by orange fruiting bodies of the fungus.	Improve growing conditions; eliminate any environmental stresses; See Ala. Pest Management Handbook.
Cantaloupe	Alternaria Leaf Spot	Large circular or irregular gray-brown leaf spots.	Sanitation. See the AL Pest Management Handbook.
	Cucumber Mosaic Virus	Plants are stunted with some leaf mottle, curling, puckering.	Sanitation. Aphid control may help.
	Fusarium Crown & Root Rot	Crowns and roots are brown, shrivelled, dry, decayed.	Sanitation. Long crop rotations. Resistant varieties if available.
	Fusarium Wilt	Plants yellow and wilt from base of plant up.	--
	Potato Virus Y	Plants are stunted with some leaf mottle, curling, puckering.	Sanitation. Aphid control may help.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Watermelon Mosaic Virus	Usually a regular mosaic pattern of yellow and green on leaves.	Sanitation. Control of aphids may help some.
	Zucchini Yellow	Mosaic Virus	Usually a regular

mosaic pattern of yellow and green on leaves.	Sanitation. Control of aphids may help some.		
Centipede	Brown Patch (<i>Rhizoctonia</i>)	Dark brown irregular lesions on leaves, generally. Dead patches (1 or more feet diam.) in lawn.	See ANR-492 or Pest Management Handbook.
	Exserohilum Blight	See Bermuda with Helminthosporium Blight.	See Ala. Pest Management Handbook.
	Take-All Patch (<i>Gaeumannomyces graminis</i> pv. <i>graminis</i>)	Patches of grass yellow and die; may be stress-related.	See ANR-823; Bayleton is labelled.
Cherry	Bacterial Canker (<i>Pseudomonas</i>)	Sunken cankers (often with ooze); often a foul smell is associated.	Sanitation.
	Septoria Leaf Spot	Medium brown angular spots (about 1 cm diam.).	Sanitation in the fall.
Cherry, Weeping Higan	Shot Hole (<i>Xanthomonas</i>)	Reddish, water-soaked spots develop; centers of older spots fall out.	Sanitation.
Chrysanthemum	Bacterial Leaf Spot (<i>Pseudomonas</i>)	Dark brown/black, small (2-4 mm diam.), angular spots; sometimes with water-soaked edges.	Sanitation.
	Botrytis Blight	Brown spots, blotches.	See Ala. Pest Management Handbook.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Fusarium Wilt	Yellowing/wilt of leaves, beginning at the bottom of the plant and moving upward.	Sanitation; rotation for 7-10 years or solarization.
	Pythium Root Rot	Roots become brown	and water-soaked.

Sanitation; protective fungicide drenches of Captan, Subdue, or Banol; solarization or crop rotation.

	Watermelon Mosaic Virus	Usually a regular mosaic pattern of yellow and green leaves.	Sanitation. Control of aphids may help some.
	Zucchini Yellow Mosaic Virus	Usually a regular mosaic pattern of yellow and green leaves.	Sanitation. Control of aphids may help some.
Coleus	Phytophthora Crown Rot	Roots become brown & water-soaked.	Sanitation.
Collards	Alternaria Leaf Spot	Dark gray-brown irregular shaped spots.	See Ala. Pest Management Handbook.
	Black Rot (<i>Xanthomonas</i>)	Dark V-shaped lesion at leaf edge; blackening of leaf veins; black vascular ring if stem cut cross-wise.	Rotation for 2-3 years; solarization.
	Cercospora Leaf Spot	Tan or whitish circular-irregular spots.	See Ala. Pest Management Handbook.
Corn	Corn Smut (<i>Ustilago maydis</i>)	White fleshy galls on ears and stalks. Older galls crack open and expose black powdery spores within.	Sanitation. See ANR-601.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Gray Leaf Spot (<i>Cercospora</i>)	Gray, rectangular spots; may be confused with Helminthosporium-type spots.	Sanitation; deep plow; resistant varieties.

	Southern Corn Leaf Blight (<i>Bipolaris maydis</i>)	Brown, elliptical spots, usually less than 3 inches long.	---
	Southern Rust (<i>Puccinia polysora</i>)	Orange pustules develop on upper leaf surfaces. Leaves become blighted.	See the Ala. Pest Management Handbook.
Cotton	Alternaria Leaf Spot	Round brown spots up to ½ inch in diameter. This is usually not a serious problem.	---
	Cercospora Leaf Spot	Brown, somewhat circular spots.	---
	Fusarium Wilt	Plants begin to yellow on lower sections. Gradually, yellowing spreads upwards and plants wilt.	---
	Phomopsis Canker	Elongated, brown, sunken canker.	Prune out cankers, making cuts 3-4 inches away from edge of lesion.
	Reniform Nematode (<i>Rotylenchulus</i>)	Plants stunted, poor growth.	Rotation.
	Root-knot Nematode (<i>Meloidogyne</i>)	Irregular galls present on roots; reduced plant growth.	Sanitation; crop rotation.
	Stemphyllium Leaf Spot	Small, circular, brown spots with concentric rings give a target-like pattern.	---
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Crabapple	Scab (<i>Venturia</i>)	Olive-brown circular, slightly raised spots (4-5 mm diam.) develop on leaves and fruit.	See Ala. Pest Management Handbook.
Cucumber	Anthracnose	(<i>Colletotrichum</i>)	Angular, brown,

water-soaked spots on leaves, stems.	See the Ala. Pest Management Handbook.		
	Watermelon Mosaic Virus I	Yellow-green mosaic pattern; slight reduced growth.	Sanitation.
Cypress, Leyland	Cercospora Blight	Inside and lower limbs become blighted.	Sanitation; See Ala. Pest Management Handbook.
	Seiridium Canker	Elongated, sunken lesions on branches and trunk; sap (resin) oozes onto bark.	Sanitation; See Ala. Pest Management Handbook.
Daisy, Gerbera	Phytophthora Leaf Blight/Crown Rot	Leaves develop brown blotches; lower stem develop brown lesions; plants collapse.	See the Ala. Pest Management Handbook.
Daylily	Rust (<i>Puccinia hemerocallidis</i>)	Yellow-orange small spots on leaves; diseased leaves eventually turn brown and die.	Sanitation. Apply protective sprays of Banner Maxx or Heritage.
	Southern Blight (<i>Sclerotium rolfsii</i>)	A wet rot at soil line; sometimes a white fluffy mat of fungus at soil line.	Sanitation; solarization.
Dogwood	Cercospora Leaf Spot	Leaf spot on lower leaves of tree; angular to irregular leaf spots (2-6 mm) which are light brown or gray in the center and dark brown or purple on borders.	Sanitation.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Powdery Mildew (<i>Phyllactinia</i>)	Powdery white dusting on leaves; foliage distortion and death.	Sanitation in the fall; See Ala. Pest Management Handbook.
	Septoria Leaf Spot	Leaf spots on lower leaves of tree; angular to irregular tan or brown spots (2-6 mm)	sometimes with faint yellow halos.

Sanitation.

	Spot Anthracnose (<i>Elsinoe</i>)	Tiny red spots on flowers, leaves.	Sanitation in fall; See Ala. Pest Management Handbook.
Euonymus	Anthracnose (<i>Colletotrichum</i>)	Small, whitish spots (1/16 in. diam.) on foliage.	Recommend fungicide sprays. See Ala. Pest Management Handbook.
Fatsia	Phytophthora Root Rot	Roots become brown, water-soaked, decayed; outer cortex slips easily away from the central core of the root.	Sanitation; improve moisture levels in the soil.
Fern	Rhizoctonia Root Rot	Dark brown, dried, decayed roots.	Sanitation; See Ala. Pest Management Handbook.
Fescue	Anthracnose (<i>Colletotrichum</i>)	Brown spots and blotches develop on grass blades.	See Ala. Pest Management Handbook for brown patch recommendations.
	Bipolaris (<i>Helminthosporium</i>) Crown Rot	Stolons/crowns become browned and dry rotted. Leaf blades become yellowed and then brown.	See the Ala. Pest Management Handbook.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Brown Patch (<i>Rhizoctonia</i>)	Brown, irregular blotches on leaves; dead patches appear in lawn; patch size after 1-2 ft. diam.	See ANR-492 and the Alabama Pest Management Handbook.
Fig	Rhizoctonia Aerial Blight	Leaves develop irregular brown lesions that become	torn and tattered.

Sanitation.

	Phytophthora Root Rot	Recently infected roots are brown & water-soaked; older infection areas are dried and brown. Foliage shows wilt, dieback.	---
	<i>Sclerotium rolfsii</i> Crown Rot	Necrosis at crown with white mycelial mat and mustard sized sclerotia.	Sanitation; See Ala. Pest Management Handbook.
Floamflower	Anthracnose (<i>Colletotrichum</i>)	Brown, circular-irregularly-shaped spots on leaves & stems.	Sanitation. Protective sprays of Cleary's or Halt would help.
Forsythia	Anthracnose	Brown, leaf spots/blotches.	Sanitation. See Ala. Pest Management Handbook.
<i>Gomphrena glabosa</i>	Fusarium Crown Rot	Brown, dried, decayed lower stem.	Sanitation; Crop rotation.
Grape	Anthracnose (<i>Colletotrichum</i>)	Circular (1-5 mm diam.) - angular lesions have brown-black edges and gray-white centers; lesions may be numerous and coalesce; lesions on shoots may cause cracking. Disease most severe on new growth. Lesions on fruit have a dark brown-black margin	Sanitation; recommend fungicide sprays.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Black Rot (<i>Guignardia</i>)	and gray center, fruit rot follows. <u>Leaves:</u> Reddish-brown spots with black margins (2-5 mm diam.); spots circular or slightly lobed. <u>Shoots, Cane:</u>	Purple or black, elongated, elliptical lesions; bark splits along lesion length. <u>Fruit:</u> White spots (2-3 mm diam.) with

brown edges; spots enlarge and fruit becomes wrinkled, black, rotted.	Sanitation; recommend fungicide sprays.		
Holly, Japanese	Botryosphaeria Canker	Elongated, sunken, cracked cankers.	Sanitation.
	Phytophthora Root Rot	Roots become brown and water-soaked; plants become yellowed with dieback.	See the Ala. Pest Management Handbook.
Holly, Hybrid	Phytophthora Root Rot	Roots become brown, water-soaked, pull apart easily.	Sanitation; reduce water levels in the area; See AL Pest Management Handbook.
Hosta	Impatiens Necrotic Spot Virus	Yellow ring spots on leaves; plants become stunted.	Sanitation. Control thrips.
	White Mold (<i>Sclerotium rolfsii</i>)	Lower trunk or stem is rotted and generally soft and limp.	Sanitation; possibly solarization.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Hydrangea	Armillaria Root Rot	Hydrangea dies suddenly. Thin white fungal mat may be seen under the bark; black thread-like rhizomorphs may be seen on or under bark; honey-colored mushrooms may develop.	Sanitation; See ANR-907.
	Cercospora Leaf Spot	Brown, circular or angular leaf spots.	Sanitation. See Ala. Pest Management Handbook.
	Colletotrichum Blossom Blight	Blossoms become covered with brown spots.	Sanitation. Cleary's 3336 may be applied for protective disease control.

	Phytophthora Root Rot	Roots become brown water-soaked and pull apart easily.	Sanitation. See the AL Pest Management Handbook.
	Powdery Mildew	White powdery dusting on leaf & stem surfaces.	Sanitation. See AL Pest Management Handbook.
	Pythium Crown/Root Rot	Wet, water-soaked brown lesions on crowns and roots.	See the Ala. Pest Management Handbook.
Impatiens	Phytophthora Root Rot	Wet, water-soaked brown lesions on roots.	See the Ala. Pest Management Handbook.
	Rhizoctonia Crown and Root Rot	Crowns and roots become brown and dry rotted.	Sanitation; solarization may help.
Ivy, English	Anthracnose	Irregular or circular dark brown or black leaf spots.	Sanitation; See AL Pest Management Handbook.
	Bacterial Leaf Spot	Dark brown-black angular leaf spots.	Sanitation. Do not water over-head. See AL Pest Management Handbook.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Colletotrichum Leaf Spot	Brown leaf spots that are circular or irregular.	See the Ala. Pest Management Handbook.
	Dodder (<i>Cuscuta</i> sp.)	A yellow vine with small white flowers; vine attaches to stems of ivy.	Sanitation.
	Edema	Yellow spots with indistinct borders develop on leaves; corresponding spots on lower leaf surfaces contain light brown corky lesions.	Reduce water levels.
	Phomopsis Canker	Brown, gray lesions on stems; dieback.	Sanitation; Cleary's or benomyl protective sprays.

	Phytophthora Root Rot	Roots become brown and water-soaked.	See the Ala. Pest Management Handbook.
Juniper	Pestalotiopsis Needle Blight	Needles turn brown in patchy areas on branches.	Sanitation; see Ala. Pest Management Handbook; avoid stress.
	Phomopsis Tip Blight	Tips of lower branches dieback.	See the Ala. Pest Management Handbook.
	Phytophthora Root Rot	See Holly, Japanese.	See Holly, Japanese.
Kiwi	Phytophthora Root Rot	Roots become brown and water-soaked; foliage shows yellowing and dieback.	Sanitation.
Liatris (Blazing Star)	Southern Blight (<i>Sclerotium rolfsii</i>)	Crown rot develops & causes plant to dieback.	Sanitation; Solarization; root-associated soil removal.
			<u>Plant</u>
<u>Disease</u>	<u>Description</u>	<u>Control</u>	
Maple	Anthracoise (<i>Kabatella</i>)	Small-large brown blotches develop on leaves, often following along veins +/- leaf edges.	See the Ala. Pest Management Handbook.
	Phyllosticta Leaf Spot	Small (4-8 mm diam.) leaf spots develop with brown-purple borders and brown-cream centers.	See the Ala. Pest Management Handbook, under 'Leaf Spot'.
Maple, Japanese	Botryosphaeria Canker	Sunken, cracked lesions on branches.	Sanitation.
Maple, Red	Anthracoise (<i>Colletotrichum</i>)	Irregular brown spots/blotches on leaves which may follow along veins.	Sanitation. Gather & remove all leaves this autumn.
Maple, Sugar	<i>Monastichella</i>	<i>hysterioidea</i> Leaf Spot	Brown irregular spots.

Sanitation.

Marigold	Alternaria Leaf Spot	Black irregular spots 0.5-2 mm diameter. When spots numerous, plant death may result.	See Ala. Pest Management Handbook, under 'Leaf Spot'.
Mondograss	Anthracnose (<i>Colletotrichum</i>)	Gray, brown spots on leaves.	Sanitation; See Ala. Pest Management Handbook.
Muscadine	Black Rot	Reddish-brown leaf spots, irregular circular with tiny black specks on spots, bordering the outer edge of the spots.	Sanitation; See the AL Pest Management Handbook.
Oak	Anthracnose (<i>Apiognomonina</i>)	Small to large brown blotches develop on leaves, often following along veins +/or leaf edges.	See the Ala. Pest Management Handbook.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Bacterial Scorch Disease (<i>Xylella</i>)	Leaf edge turn brown in scattered locations in tree; gradual dieback over 2-3 years.	Remove tree.
	Hypoxyylon Canker	Dark gray to black, hard fungal layer develops under and at level of the bark on tree; dieback.	Pruning; improve tree vigor.
	Monochaetia Leaf Spot	Light cream-colored, flat, irregular blotches & spots.	Sanitation of fallen leaves this fall.
	Oak Leaf Blister (<i>Taphrina</i>)	Light brown leaf spots that are circular and concave-convex.	Sanitation; See Ala. Pest Management Handbook.

	Powdery Mildew	White powdery areas on leaves; areas eventually become necrotic.	Sanitation.
Oak, Black	Hypoxylon Canker	Gray-black hard stroma develops under the bark and causes the bark to crack and fall off.	Sanitation.
Okra	Root Knot Nematode (<i>Meloidogyne sp.</i>)	Irregular galls on roots.	Sanitation; grow nematode resistant vegetable variety; crop rotation to some grasses, marigolds, etc. See ANR-856.
Pansy	Pythium Root Rot	Roots become brown and water-soaked; plants become yellowed and finally die.	See the Ala. Pest Management Handbook.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Bacterial Spot	Shot hole spots on leaves, often with a reddish border; sunken dark brown spots on fruit.	Sanitation. See AL Pest Management Handbook.
Pea, Field	Mosaic Virus	Yellow spots & blotches (mosaic pattern) on puckered and sometimes distorted leaves.	Sanitation; Control insects.
	Charcoal Root Rot (<i>Macrophomina</i>)	The major tap root at and just below the soil-line becomes dry, shredded and sprinkled with tiny black pepper-sized spots. These bodies of the fungus are a diagnostic sign. The "pepper spots" are present on the root surface and scattered	throughout the inner tissues. Spots are usually very numerous and give the root a gray-black appearance. This is a problem during dry periods.

Sanitation. Rotation.

	Fusarium Root Rot	Red-brown lesions on lower stems, upper root areas; dieback wilt.	Rotation for 10-15 years.
Peanut	Cylindrocladium Root Rot	Stems near the soil-line are black; orange minute dots may be evident on decay area.	Crop rotation; See A. Hagan.
	Early Leaf Spot (<i>Cercospora</i>)	Brown spots, often with a yellow halo; spores are produced on the upper leaf surfaces of spots.	See Ala. Pest Management Handbook; also Folicur.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Late Leaf Spot (<i>Cercosporidium</i>)	Brown to dark-brown spots; spores are produced on the lower leaf surface.	See Alabama Pest Management Handbook; also Folicur.
	Rhizoctonia Stem Rot and Pod Rot	Dark brown, sunken, dried lesions on stems and pods.	Folicur.
	Root Knot Nematode	Irregular swellings of pods & roots.	See ANR-393.
	Southern Blight (<i>Sclerotium</i>)	Stems at the soil line become brown-decayed and soft. A white, fan-shaped mycelial growth may develop at the soil line.	See the Ala. Pest Management Handbook; also Folicur.
	Tomato Spotted Wilt Virus	Stunted plants; leaves show ring spot patterns; new leaves small; internodes abnormally shortened.	Control thrips.
Pear	Entomosporium Leaf Spot (<i>Fabraea</i> Leaf Spot)	Black circular spots (4-6 mm diam.) develop on leaves, fruit and shoots. A small black pustule often develops in the spot centers.	Sanitation of leaves/fruit in the fall. Follow spray guide recommendations in ANR-50.

	Fireblight (<i>Erwinia</i>)	Prune out dieback; make cuts 14 inches beyond damage.	Blossom blight; dieback, cankers.
Pecan	Fungal Leaf Scorch	Brown or gray-brown lesions begin at the base of the leaflet and spread toward the leaflet midrib. Early leaf drop follows.	See fungicides recommended for scab control.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Scab (<i>Cladosporium</i>)	<u>Leaves:</u> Slightly elevated, olive-brown, circular spots. <u>Nuts:</u> Slightly elevated, olive-brown, circular to irregular spots.	Sanitation; recommend fungicide sprays.
Pepper	Anthracoze	Fruit develops watersoaked, sunken areas; black dots (fruiting bodies of the fungus) may develop in sunken area.	Sanitation; see the AL Pest Management Handbook.
	Bacterial Leaf Spot (<i>Xanthomonas</i>)	Dark, angular spots with water soaked edges; spot centers may dry out; leaf drop.	Sanitation.
	Cucumber Mosaic Virus	Foliage mottled; new growth stunted.	Sanitation. Control aphids.
	Pythium Root Rot	Roots become brown and watersoaked.	Rotation; improve water drainage.
	Tomato Spotted Wilt Virus	Foliage mottled; new growth stunted.	Sanitation; control thrips.
Periwinkle	Anthracoze (<i>Colletotrichum</i>)	Brown, sunken cankers on stem sections.	Sanitation; Cleary's 3336, Domain, or a benomyl WP labelled for ornamentals.
	Phytophthora Aerial	Blight	Dark brown lesions

appear on stems;
dieback.

Sanitation; Aliette.

Phytophthora Root
Rot

Roots become dark
brown decayed and
water-soaked; foliage
shows yellowing/
dieback.

Sanitation; solari-
zation.

Plant

Disease

Description

Control

Pythium Root Rot

Roots become light
brown and water-
soaked, decayed, pull
apart easily.

Sanitation. Reduce
water levels.
Protective treatments
of Subdue may be
used in commercial
situations.

Rhizoctonia Aerial
Blight

Lower stems and
leaves become
browned and dry-
rotted. Some
mycelial webbing
may occur. Whole
plants will eventually
die.

Sanitation. Protective
sprays of Cleary's
3336, Domain, or a
benomyl WP labelled
for ornamentals.

Rhizoctonia/Fusarium
Crown Root Rot

Dried, brown lesions
on lower stem and
roots.

Cleary's drenches will
help provide some
protection.

Tomato Spotted Wilt
virus

Plants are stunted;
yellow mottle may be
present.

Sanitation. Control
thrips.

Petunia

Phytophthora &
Pythium Root Rot

Roots brown and
water-soaked, rotted.

Sanitation. See AL
Pest Management
Handbook.

Pine, Virginia

Fusarium Pitch
Canker

Sunken lesions that
ooze sap.

Sanitation.

Lophodermium
(Ploio~~derma~~) Needle
Cast

Last year's needles
become spotted and
browned; eventually
they drop. Needles
have tiny football-
shaped, hard black
bodies scattered over

their surfaces.

See the Ala. Pest Management Handbook.

Rhizosphaeria
Needle, Twig Blight
(Suspect Stress
Related)

Needles and twigs
become brown and
dead.

Apply Bravo 720 at
rate of 5½ pints per
100 gallons or Bravo
500 at 8 pts. per 100
gallons after shearing
when growth is ½
inch and again when
new growth is 2
inches long.

Plant

Disease

Description

Control

Plum

Bacterial Scorch
(*Xylella*)

Leaf edges of (often)
older leaves become
scorched. Leaves die
and remain on the
tree; branches
dieback; eventual tree
death.

Infected trees should
be removed.

Poinsettia

Bacterial Stem Rot
(*Erwinia*)

Lower stem becomes
blackened and rotted;
usually occurs on
small plants.

Sanitation.

Fusarium Root Rot

Roots become dry and
decayed. Symptoms
may be confused with
Rhizoctonia.

Sanitation; Cleary's
3336 protective
sprays/drench.

Pythium Root and
Crown Rot

Roots water-soaked,
decayed.

Sanitation; protective
drenches fungicide;
See Ala. Pest
Management
Handbook.

Poplar

Alternaria Leaf Spot

Brown, irregular spots
(8-15 mm diam.)
develop on leaves.

Sanitation. Chemical
treatment not usually
recommended.

Potato, Irish

Root-knot Nematode
(*Meloidogyne*)

Irregular galls on
roots and on tuber
surfaces.

Sanitation; crop
rotation to nematode
suppressive crops;
resistant varieties; See
ANR-856.

Scab (*Streptomyces
scabies*)

Rough, circular,
irregular lesions on
tubers.

See the Ala. Pest
Management Hand-
book.

Pumpkin	Cucumber Mosaic Virus	Leaves may develop a mosaic, mottle, puckering, distorted shapes, curling.	Sanitation. Weed control; Insect Control; See ANR-809.
	Downy Mildew (<i>Pseudoperonospora</i>)	Yellow diffuse spots on upper leaf surface; gray mold on corresponding lower leaf surface.	See Ala. Pest Management Handbook.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Watermelon Mosaic Virus I	Leaves and fruit show a yellow-green mosaic pattern; new growth is stunted.	Sanitation; control insects and weeds.
Red Cedar	Phomopsis Blight	Tips of branches become brown with damage spreading into the lower sections of the branches.	See the Ala. Pest Management Handbook.
Rose	Aerial Blight (<i>Rhizoctonia</i>)	Brown, irregular blotches on leaves.	Sanitation; Cleary's 3336 would give protective control.
	Black Spot (<i>Diplocarpon rosa</i>)	Black feathery-edged leaf spots	See Ala. Pest Management Handbook.
Rosemary	Fusarium & Pythium Root Rot	Dried, decayed roots.	Sanitation; avoid environmental stresses.
Sesame	Fusarium, Pythium Wilt/Root Rot	Brown water-soaked rots.	---
	Fusarium Associated With Stem Cankers	Brown dried, elongated cankers.	---
	Leaf/Pod Blotch (<i>Colletotrichum</i> , <i>Fusarium</i>)	Brown circular, oval spots.	Sanitation.
Smoketree	Powdery Mildew	White powdery dusting on leaves; leaf blight.	Sanitation; Cleary's 3336 protective sprays if desired.

Sorghum	Anthracnose (<i>Colletotrichum</i>)	Small to large circular lesions with yellowish centers and red, black or brown edges. Spots may coalesce. Stalk rot shows bleached surface lesions with reddish edges; head rot may also occur.	Rotation. Plow under crop residues.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Charcoal Rot (<i>Macrophomina</i>)	See comments for field pea. This is usually a dry weather problem.	Rotation. Plow under crop residue.
Soybean	Aerial Blight (<i>Rhizoctonia</i>)	Lesions may appear on leaves, stems and pods usually beginning on the lower or middle sections of the plant. At first the spots or blotches appear water-soaked and black. Soon the spots appear greenish-brown or reddish-brown. Older spots and blighted areas become tan, brown or black. Older lesions often become dried and fall apart.	See Ala. Pest Management Handbook or Soybean Pest Management Circular ANR-413.
	Anthracnose (<i>Colletotrichum</i>)	Irregularly shaped brown lesions on stems, pods, petioles. In later stages of disease black fruiting bodies with minute black spines may be seen covering the lesions. (Usually a hand lens is needed to view the fruiting bodies.)	Rotation. Plow under crop residues.
	Charcoal Root Rot (<i>Macrophomina</i>)	See comments for field pea. This may be a problem when conditions are dry.	See Bill Gazaway. Rotation.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Cyst Nematode (<i>Heterodera</i>)	Plants are stunted and yellow. Root systems are reduced and show a low incidence of Rhizobium nodules. White-yellow and brown cysts about the size of a small pin head may be seen on roots with the aid of a hand lens.	Rotation; resistant cultivars; See Soybean Pest Management, Circular ANR-413.
	Downy Mildew (<i>Peronospora</i>)	Yellow spots develop on upper leaf surfaces. On corresponding areas of lower leaf surfaces, gray-purple tufts of mycelium/ spores develop.	See the Ala. Pest Management Handbook or Soybean Pest Management Circular ANR-413.
	Frogeye Leaf Spot (<i>Cercospora</i>)	<u>Leaves:</u> Circular-angular spots with a dark red-brown border. <u>Stems:</u> Elongated gray lesions with red-brown margins. <u>Pod:</u> Circular to irregular, slightly sunken gray spots with dark red-brown borders.	See Ala. Pest Management Handbook and Bill Gazaway or ANR-413.
	<i>Fusarium solani</i> Root Rot	Tap root becomes brown and dried.	Crop rotation for 10-15 years.
	Nematode, Sting (<i>Belonolaimus</i>)	Plants become yellowed and stunted. Roots first develop dark sunken lesions at root tips or on young roots. Lesions often cause root breakage which gives root ball a stubby appearance.	See Ala. Pest Management Handbook or ANR-413.
	Nematode, Stunt (<i>Tylenchorhynchus</i>)	Plants are yellowed, stunted, unthrifty; roots are abnormally	shortened.

See Ala. Pest
Management
Handbook.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Root-Knot Nematode (<i>Meloidogyne</i>)	Plants are stunted and yellowed. Roots develop knots or galls of variable shape and size.	Crop rotation; Use resistant cultivars. See Ala. Pest Management Handbook.
	Stem Canker (<i>Diaporthe</i>)	Small, red-brown lesions at nodes develop into large longitudinal gray-brown cankers with red-brown margins. Leaves develop inter-veinal browning.	Rotation. Crop rotation.
	Sudden Death Syndrome (<i>Fusarium solani</i>)	The tap root becomes brown and dry-rotted. Small feeder roots may also become decayed. Foliage develops inter-veinal browning.	Rotation.
Squash	Mosaic Virus	Leaves develop a mottled green-yellow or dark green-light green mosaic or regular patterned coloration; new growth is stunted.	Remove affected plants; Control insects and weeds.
	Powdery Mildew	White dusting evident on foliage.	See Ala. Pest Management Handbook.
	Pythium Crown Rot	Lower stems become soft and water-soaked, rotted.	Sanitation. Reduce irrigation if appropriate, avoid low, wet areas.
St. Augustine	Brown Patch (<i>Rhizoctonia</i>)	See Centipede.	--
	Dagger Nematode (<i>Xiphenema sp.</i>)	Plants stunted; roots poorly developed, stunted.	Solarization or crop rotation.
	Gray Leaf Spot (<i>Piricularia</i>)		Gray spots and

blotches on grass blades.
See the Ala. Pest Management Handbook.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Root Knot Nematode (<i>Meloidogyne</i>)	Areas grow poorly and become stressed easily.	Avoid stressful situations. Commercial turf situations may apply protective treatment.
	Take-All Patch <i>Gaeumannomyces</i>	Patch areas thin and individual plants turn yellow and die; affected plants show dark brown/black lesions on roots/stolons.	Adjust soil pH to 5.5-6.0; Use only ammonium-based nitrogen in fertilizers.
Strawberry	Common Leaf Spot (<i>Mycosphaerella</i>)	Reddish-bordered spots with gray centers.	Sanitation. See the Ala. Pest Management Handbook.
	Phomopsis Leaf Spot	Brown blotches that often develop along leaf edges. Spots usually have purple-red edges.	Sanitation. See the Ala. Pest Management Handbook.
Sweet Gum	Phyllosticta Leaf Spot	Circular leaf spots with dark borders.	Sanitation of leaves this fall.
Sycamore	Anthracnose (<i>Discula</i>)	Brown irregular blotches develop along leaf veins and/or along leaf edges. Defoliation may follow.	See the Ala. Pest Management Handbook.
	Scorch (<i>Xylella</i>)	Leaf edges become browned. Foliage dies but usually remains on the tree.	The following year leaves may be smaller than normal, some die-back may occur.

Leaf edge browning occurs mid-late summer.

Remove diseased trees.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Tomato	Anthracnose (<i>Colletotrichum</i>)	Fruit spots begin as small sunken colorless spots but they develop into larger sunken areas with blackish centers where fungal spores (orange) develop.	See the Ala. Pest Management Handbook or Vegetable Spray Guide.
	Bacterial Canker (<i>Clavibacter</i>)	Elongate, brown, wet-looking lesions or cankers on stems; center of cankers dry and look white.	Protective sprays; Sanitation.
	Bacterial Leaf Spot (<i>Xanthomonas axonopodis</i> pv. <i>campestris</i>)	Very small, brown or black angular leaf spots; outer edges of spots may appear wet or water-soaked.	Sanitation; See the Ala. Pest Management Handbook.
	Bacterial Wilt (<i>Pseudomonas solanacearum</i> <i>Ralstonia solanacearum</i>)	Green healthy plants wilt and collapse rapidly.	Sanitation.
	Cucumber Mosaic Virus Complex	Plants become stunted; new growth becomes stunted; foliage shows mosaic, twisting, curling, shoe-string deformity on leaves.	See Ed Sikora. Control aphids and weeds.
	Early Blight (<i>Alternaria</i>)	Black or brown spots (1/4-1/2 inch diam.) on leaves, stems, fruit. Spots often have a concentric pattern.	Fungicide sprays; Sanitation.
	Fusarium Wilt	Plant foliage turns yellow and dies. Often yellowing begins at lower	sections of the plant or on one side of the plant. Gradually the whole plant dies.

Resistant varieties;
Rotation.
Plant

Disease

Description

Control

Vascular system is brown.

Pith Necrosis
(*Pseudomonas*)

Sometimes brown cankers are evident and sometimes they are not present. Dieback. When stem cut longitudinally, pith is hollow with step like strands present.

Sanitation.

Potato Virus Y

Foliage mottled, distorted; new growth stunted.

Sanitation; control aphids.

Septoria Leaf Spot

Small (2-3 mm) gray, circular leaf spots with dark borders. Wet weather and moderate temperatures favor disease.

Apply protective fungicide sprays. Rotation.

Southern Blight
(*Sclerotium*)

White fungal mat occurs at soil line; plants die due to death of lower stem.

Solarization or fumigation.

Tomato Spotted Wilt Virus

New growth becomes abnormally small; yellow spots appear. Young leaves become bronzed in spots, patches or whole leaf area involved. Fruit spotted or with ring spots. Plant wilt and die.

Sanitation; Control thrips.

Vinca minor

Alternaria Leaf Spot

Dark brown angular leaf spots; leaf blight.

Sanitation; Chipco 26019.

Rhizoctonia Aerial Blight

Leaves or stems become blighted, spotted.

Sanitation; Cleary's or benomyl protective treatments.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Violet, African	Phytophthora Crown & Root Rot	Crowns and roots develop brown, wet, rotted tissues.	Sanitation. Reduce water levels. See the AL Pest Management Handbook.
Watermelon	Anthracnose	Black circular spots on leaves, stems; dieback.	Sanitation; See Ala. Pest Management Handbook.
	Blossom End Rot	Blossom ends of fruit develop black, hard, sunken areas.	Apply irrigation to keep the soil evenly moist. Apply calcium chloride sprays.
	Cercospora Leaf Spot	Circular-irregular pale brown leaf spots with black margins (2-10 mm diam.).	Sanitation; fungicide sprays.
	Cucumber Mosaic Virus	Leaves become mottled green-yellow, distorted, wrinkled with curled edges; abnormally shortened internodes.	Control weeds; control aphids and cucumber beetles; do not save seed.
	Fusarium Wilt	Lower leaves turn yellow; whole plant wilts; lower stem vascular system is brown.	Rotate 7-12 years and then plant a resistant variety such as Crimson Sweet or Jubilee.
	Gummy Stem (<i>Mycosphaerella</i>)	Elongate, brown, wet and some- times cracked lesions; black leaf spots may develop on leaf edges; plant sections beyond cankers dieback.	Protective fungicide sprays; Sanitation in the fall.
	Watermelon Mosaic Virus I (Papaya Ringspot Virus)	See comments for Cucumber Mosaic Virus (CMV).	Sanitation.
Watermelon Mosaic Virus II	See comments for CMV.	Sanitation.	
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>

Weeping Mulberry	Anthrachnose (<i>Colletotrichum</i>)	Brown spots and blotches on leaves; often blotches develop along leaf veins.	Sanitation of fallen leaves.
Weeping Willow	Crown Gall (<i>Agrobacterium tumefaciens</i>)	Rounded, woody gall on lower trunk and possibly large roots.	Sanitation; solarization. Root zone soil replacement; control soil insects.
Wisteria	Phomopsis Stem Blight	Dieback and brown, dried sunken lesions.	Sanitation; Cleary's 3336.
Zoysia	Dollar Spot (<i>Sclerotinia</i>)	Silver dollar-sized, bleached-out spots appear in lawn. Spots enlarge. Individual grass blades develop white lesions with brown borders.	See the Ala. Pest Management Handbook.
	Helminthosporium Leaf Spot and Crown Rot	Brown, small elongated leaf spots; yellowing and dieback.	See ANR-621 and the Ala. Pest Management Handbook.
	Rhizoctonia Brown Patch	Brown blotches on leaves; roughly circular patches (1 or more feet diam.) turn brown in lawn.	See ANR-492.
	Ring Nematode Damage (<i>Criconemoides</i>)	Poor root system; poor top growth; dieback.	See ANR-523.
	Rust (<i>Puccinia</i>)	Grass blades show chlorotic areas on one side of leaf and orange, rusty powder (spores) on the other side.	Sanitation; recommend fungicide sprays in some situations.

Plant

Disease

Description

Control

Take-All Patch
(*Gaeumannomyces*
graminis pv *graminis*)

See St. Augustine
grass.

Cultural practices;
fungicides including
Bayleton.

Lab Notes

Remember that August-early October is the best time to sample for soil nematode analysis. The charge for nematode analysis is \$10 per sample.