

TIMELY INFORMATION

PLANT PATHOLOGY SERIES

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PP-596

JULY PLANT DISEASES FROM THE AUBURN PLANT DIAGNOSTIC LAB

JULY PLANT DISEASES FROM THE BIRMINGHAM PLANT DIAGNOSTIC LAB

JULY INSECT SAMPLES AT THE AUBURN PLANT DIAGNOSTIC LAB

DISEASE POSSIBILITIES FOR AUGUST & LATE SUMMER

LAB NOTES

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Auburn Plant Disease Report-July (J. Mullen)

Many of the 267 July plant samples were ornamentals submitted by the State Department of Agriculture. These plant submission were part of a state and national survey of nurseries to detect *Phytophthora ramorum* (Sudden Oak Death). Forty-eight ornamental samples were submitted from nurseries by State Department of Agriculture Inspectors in July; 198 total samples were submitted from Nurseries (May 9-July 22). These samples were tested using visual study, microscopic study, and ELISA testing for Phytophthora. For all ELISA positive samples (There were none in July, 47 total nursery samples; 51 total samples), the DNA was extracted and sent by overnight mail

ALABAMA A&M AND AUBURN UNIVERSITIES, AND TUSKEGEE UNIVERSITY, COUNTY GOVERNING BODIES AND USDA COOPERATING

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to the USDA Beltsville molecular lab. PCR analyses were performed and results were sent to the Alabama State Plant Health Director (USDA-APHIS). From USDA-APHIS in AL, results were forwarded to the State Plant Regulatory Official and our lab. The State Plant Regulatory Official contacts the Inspectors who communicate with the growers. So far we have results back on 21 nursery samples, and all 21 analyses have been negative. It is too hot right now to sample for *P. ramorum*, but more survey work is planned for this fall.

The above procedure was also followed by Inspectors when homeowner sample testing was requested. In total we tested 41 homeowner samples. Six samples were tested in July and none tested positive for Phytophthora using ELISA. (Four samples in June tested ELISA positive for Phytophthora; PCR results were negative for all four for *P. ramorum*.) This fall we hope more homeowners will request testing when they observe symptoms. If calls come to Extension offices, and appropriate, suspect samples are described, please forward client names and contact information to the State Department of Agriculture at tjohnson@aqi.state.al.us.

Many of the non-ornamental samples were soybeans submitted for disease diagnosis and rust assessment. Forty-eight soybean samples were submitted in July. The first confirmation of rust in Alabama in 2005 was made in Fairhope (Baldwin County) on July 13. As of 3½ weeks into August, rust has been diagnosed in Autauga, Baldwin, Coffee, Elmore, Henry, Houston, Lee, and Talladega counties. A variety of non-rust diseases have been seen on soybean samples sent or brought from around the state. Bacterial leaf spots were the most common diseases. Culture results indicates that both *Xanthomonas* and *Pseudomonas* leaf spots are present. In addition, Cercospora leaf spots and downy mildew diseases have become widespread during August. Stem canker has been seen occasionally.

Rust was confirmed on kudzu in Baldwin County in early August and Conecuh County on 8/24/05.

Other diseases of note in July include bacterial leaf spot on azalea, *Fusarium solani* stem rot and wilt on chrysanthemum, bacterial wilt on pepper, and tomato spotted wilt on zinnia. Tomato spotted wilt (TSWV) on peanut was seen, and A. Hagan reports that TSWV is more damaging this year on peanuts than it has been for the past few years. Anthracnose has been a common leaf spot disease on camellia and some other ornamental shrubs. Bacterial leaf spots have been common on a number of plants including soybean, azalea, cottonwood, lotus, maple, kudzu, and oak. Exact identification will be made shortly by the gas chromatography method.

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

<u>Plant</u>	<u>Disease</u>	<u>County</u>
Ash	Anthracnose (<i>Colletotrichum</i>)	Jefferson

Azalea <u>Plant</u>	Anthracnose (<i>Colletotrichum</i>) <u>Disease</u>	*(2) <u>County</u>
	Bacterial Leaf Spots	*(4)
	Phytophthora Leaf Spots	*
Bermuda	Spring Dead Spot (<i>Gaeumannomyces graminis</i> var. <i>graminis</i>)	Jefferson
Boxwood	Macrophoma Crown Rot	Limestone
	Volutella Blight	Limestone
Camellia	Anthracnose (<i>Colletotrichum</i>)	*(7), Tuscaloosa
	Bacterial Leaf Spot	*
Chrysanthemum	<i>Fusarium solani</i> Stem Rot & Wilt on Mum	*
Corn	Southern Corn Leaf Blight (<i>Bipolaris maydis</i>)	Escambia, Pickens
Cotton	Alternaria Seedling Crown Rot	Lee
	Anthracnose (<i>Colletotrichum</i>)	Dallas
	Cercospora Leaf Spot	Dallas
	Fusarium Seedling Crown Rot	Lee
	Rhizoctonia Stem Rot	Talladega
	Suspect Root-Knot Nematode (<i>Meloidogyne</i>)	Shelby
Cottonwood	Bacterial Leaf Spot	Houston
Crape Myrtle	Botrytis Dieback	Tuscaloosa
Dogwood	Cercospora Leaf Spot	Marengo

<u>Plant</u>	<u>Disease</u>	<u>County</u>
Fig	Botryosphaeria Canker	Houston
Grapes	Black Rot (<i>Guignardia</i>)	Calhoun
Gourd, Apple	Botrytis Fruit Rot	Dale
	Choanephora Fruit Rot	Dale
Holly	Anthracoise (<i>Colletotrichum</i>)	*
Kudzu	Bacterial Leaf Spot	Autauga, Choctaw, Clarke, Marengo, Wilcox
	Septoria Leaf Spot	Choctaw, Henry, Jefferson, Marengo, Tuscaloosa, Wilcox
Leucothoe	Anthracoise (<i>Colletotrichum</i>)	Tuscaloosa
Lotus	Bacterial Leaf Spot	Cullman
Maple	Anthracoise (<i>Colletotrichum</i>)	*(4)
	Bacterial Leaf Spot	*
	Phyllosticta Leaf Spot	*
Oak	Anthracoise (<i>Colletotrichum</i>)	Baldwin, Talladega
	Bacterial Leaf Sptos	Baldwin
	Fusiforme Rust (<i>Cronartium quercuum</i> var. fusiforme)	Baldwin, Jefferson
	Phyllosticta Leaf Spot	*
	Powdery Mildew	*
Oak, Shumard	Bacterial Leaf Spot	*
<u>Plant</u>	<u>Disease</u>	<u>County</u>

	Fungal Canker	*
Peanut	Rhizoctonia Root Rot	Washington
	Tomato Spotted Wilt Virus	Conecuh, Washington
Pepper	Bacterial Wilt (<i>Ralstonia solanacearum</i>)	Cullman
	Tomato Spotted Wilt Virus	Cullman
Pieris	Anthrachnose (<i>Colletotrichum</i>)	*
Soybean	Anthrachnose (<i>Colletotrichum</i>)	DeKalb
	Bacterial Leaf Spots	Autauga, Baldwin, Dallas, DeKalb, Choctaw, Elmore, Escambia, Fayette, Hale, Houston, Lee, Pickens, Talladega, Wilcox
	Cercospora Leaf Spots	Choctaw
	Downy Mildew (<i>Peronospora manshurica</i>)	Fayette
	Root-Knot Nematode (<i>Meloidogyne</i>)	Baldwin
	Septoria Leaf Spot	Choctaw, Wilcox
	Soybean Rust (<i>Phakopsora</i> sp.)	Baldwin
	Stem Canker (<i>Diaporthe phaseolarum</i> var. <i>caulivora</i> [Phomopsis])	DeKalb
Viburnum	Anthrachnose (<i>Colletotrichum</i>)	*(6)
Zinnia	Tomato Spotted Wilt Virus	*
Zoysia Plant	Rust (<i>Puccinia</i> sp.) <u>Disease</u>	Colbert <u>County</u>
	Slime Mold (<i>Physarum</i>)	Lee

Take-All Patch (*Gaeumannomyces* Jefferson
graminis var. *graminis*)

*Counties are not reported for greenhouse, nursery, and golf course samples.

Birmingham Plant Disease Report-July (J. Jacobi)

We received 129 plant samples during July. Problems seen last month included Pythium and Rhizoctonia root rot on ajuga, bacterial leaf spot and Phytophthora root rot on chrysanthemum, downy mildew on coleus, bacterial spot on peach, and late blight on tomato.

Downy mildew on coleus was new disease, not previously reported in Alabama. Foliar symptoms included angular necrotic spots, with a dense covering of gray-brown cotton-like mycelial growth. This fungus also attacks other hosts, including salvia. The following web page has an excellent update on the downy mildews that attack ornamentals

(<http://www.gpnmag.com/gpn/index.cfm/powergrid/rfah=/cfap=/CFID/3583441/CFTOKEN/45713921/fuseaction/showArticle/articleID/6242>).

Late blight (*Phytophthora infestans*) on tomato was somewhat unusual for us during July. Foliage symptoms include irregular bluish-gray water soaked spots on leaves that become brown papery lesions. On fruit, symptoms are typically marbled brown, bumpy spots. On this sample, the white fungal growth was very apparent on the undersides of the leaves. Probably due to the cloudy, moderately cool conditions during early July. For more information, see the following web page (http://vegetablemndonline.ppath.cornell.edu/factsheets/Potato_LateBlt.htm).

Table 2. 2005 July Problems Seen In The Birmingham Plant Diagnostic Lab.

<u>Plant</u>	<u>Problem</u>	<u>County</u>
Ajuga	Pythium Root Rot	Tuscaloosa
	Rhizoctonia Root and Crown Rot	Jefferson
Apple	Fire Blight (<i>Erwinia</i>)	Shelby
Azalea	Azalea Lacebug	Shelby
<u>Plant</u>	<u>Pythium Root Rot Problem</u>	<u>Shelby County</u>
Bentgrass	Anthracoese	*(2)

	Brown Patch (<i>Rhizoctonia zeae</i>)	*
	Pythium Root Dysfunction	*(2)
Boxwood, Common	Boxwood Mites	Jefferson, Shelby
	Leaf Miners	Jefferson(2)
	Macrophoma Leaf Blight	Jefferson(2)
	Volutella Blight	Jefferson
Cantaloupe	Alternaria Leaf Blight	Chilton
Chrysanthemum	Bacterial Leaf Spot	Bibb
	Phytophthora Root Rot	Bibb
Coleus	Downy Mildew (<i>Plasmopara</i>)	Jefferson
Crape Myrtle	Powdery Mildew	Tuscaloosa
Cucumber	Anthracnose	Jefferson
	Powdery Mildew	Jefferson
Cypress, Leyland	Phytophthora Root Rot	Jefferson
Daylilly	Leaf Streak	Jefferson
Dogwood, Flowering	Phyllosticta Leaf Spot	Jefferson
	Powdery Mildew	Tuscaloosa(2)
	Spot Anthracnose	Tuscaloosa
Dogwood, Gray	Dogwood Sawfly	Jefferson
Dogwood, Kousa <u>Plant</u>	Leaf Scorch <u>Problem</u>	Jefferson <u>County</u>
Elm, Winged	Dutch Elm Disease	Shelby
Hawthorne	Quince Rust	Jefferson

Holly, Japanese	Two-Lined Spittlebug Damage	Jefferson
Holly, Lusterleaf	Pythium Root Rot	Jefferson
Holly, Savannah	Two-Lined Spittlebug Damage	Tuscaloosa
Huchera	Anthrachnose (<i>Colletotrichum</i>)	Jefferson
Hydrangea, Bigleaf	Corynespora Leaf Spot	Jefferson, Shelby
Iris	Iris Leaf Spot	Jefferson
Ivy, English	Anthrachnose (<i>Colletotrichum</i>)	Jefferson(2)
Lantana	Bacterial Leaf Spot (<i>Xanthomonas</i>) Lacebugs	Jefferson Tuscaloosa
Maple, Japanese	Phyllosticta Leaf Spot	Jefferson
Maple, Red	Gloomy Scale	Shelby
Oak, Willow	Oak Spider Mites	Jefferson
Okra	Japanese Beetle Damage	Jefferson
Pea, Pinkeye	Aphids	Jefferson
Peach	Bacterial Spot (<i>Xanthomonas</i>)	Autauga
Peach, Flowering	Bacterial Spot (<i>Xanthomonas</i>)	Tuscaloosa
Pear	Fabraea (<i>Entomosporium</i>) Leaf Spot	Jefferson
Periwinkle	Pythium Root Rot	Tuscaloosa
Petunia	Phytophthora Blight	Jefferson
<u>Plant</u>	<u>Problem</u>	<u>County</u>
Pittosporium	Cottony Cushion Scale	Jefferson
Privet, Japanese	Cercospora Leaf Spot	Tuscaloosa
Rose	Black Spot	Jefferson

	Spider Mites	Jefferson
Soybean	Bacterial Leaf Spot	Etowah
	Frogeye Leaf Spot	Autauga, Elmore, Etowah
	Suspect Chemical Damage	Elmore
	Suspect Potassium Deficiency	Shelby
Spruce, Dwarf Alberta	Spider Mites	Jefferson
St. Augustinegrass	Chinch Bugs	Tuscaloosa
	Gray Leaf Spot	Jefferson
Sweetgum	Cercospora Leaf Spot	Jefferson
Tomato	Bacterial Spot (<i>Xanthomonas</i>)	Chilton
	Bacterial Wilt (<i>Ralstonia</i>)	Jefferson
	Blossom End Rot	Jefferson(2)
	Cloudy Spot (Stinkbug Damage)	Jefferson(2)
	Late Blight (<i>Phytophthora</i>)	Jackson
	Pythium Damping-Off	Jackson
	Root-Knot Nematode (<i>Meloidogyne</i>)	Jefferson
Zinnia	Bacterial Leaf Spot (<i>Xanthomonas</i>)	Jefferson
<u>Plant</u>	<u>Problem</u>	<u>County</u>
Zoysiagrass	Leaf Rust	Shelby

*Counties are not reported for greenhouse and nursery samples.

Auburn Entomology Report-July (C. Ray)

County	Crop	Category	Specimen Name
Montgomery	Shrubs	Ornamental	Tiger Beetles
Montgomery	Tomato	Row Crops	Tomato Russet Mites, Spider Mites
Pike	Home	Household-Miscellaneous	Flying Ants
Cleburne	Gladiolus	Ornamental	Suspect Mites, Aphids or Thrips
Cleburne	Lantana	Ornamental	Lantana Lace Bug
Limestone		Miscellaneous	A Ground Beetle
Limestone		Miscellaneous	A Clubionid Spider
Etowah	Human	Medical	American Dog Tick
Covington	Home	Household-Structural	Eastern Subterranean Termite
Pickens	Home	Stored Products	Drugstore Beetle
Calhoun	Beans	Row Crops	Mexican Bean Beetle Pupae
Pickens	Trap	Miscellaneous	Japanese Beetle
Sumter	Trap	Miscellaneous	Japanese Beetle
Sumter	Trap	Miscellaneous	A Flower Chafer
Etowah	Human	Medical	American Dog Tick
		Miscellaneous	A Robber Fly
Tuscaloosa	Oak	Ornamental	Oak Skeletonizer Damage
Tallapoosa	Potato	Row Crops	White Grub Damage
Limestone	Green Beans	Row Crops	Spider Mites
Limestone	Tomato	Row Crops	Spider Mites
Calhoun		Miscellaneous	Carabid Beetle Larva
Jefferson	Tomato	Row Crops	Nymphal Stink Bugs

County	Crop	Category	Specimen Name
Bullock			Greater Elm Leaf Beetle
Houston	Cottonwood	Ornamental	Cottonwood Petiole Gall
Lee	Home	Household-Miscellaneous	True Katydid
Dallas	Lumber	Timber Products	Black Carpenter Ant
Marengo	Lima Beans	Row Crops	Possible Stink Bug Damage
DeKalb		Miscellaneous	Male Flying Ants
DeKalb		Miscellaneous	Giant Resin Bee
Cullman	Apartment	Household-Miscellaneous	German Cockroach
Elmore	Home	Household-Miscellaneous	A Broadnosed Weevil
Houston	Hickory	Ornamental	Ambrosia Beetle
Houston	Hickory	Ornamental	Round-Headed Wood Borer
Coffee	Lawn/Home	Household-Miscellaneous	Argentine Ants
Marion	Green Beans	Row Crops	Cowpea Curculio
Madison	Hickory	Ornamental	Walnut Caterpillar
Madison	Elm	Ornamental	Larger Elm Leaf Beetle Larvae
Blount		Miscellaneous	Male Trap Door Spider
Choctaw		Miscellaneous	Giant Water Bug
Cherokee	Hosta	Ornamental	Fungus Gnat Larvae
Jefferson	Azalea	Ornamental	Azalea Lace Bug Damage
Jefferson	Home	Household-Miscellaneous	Asiatic Oak Weevil
Tuscaloosa	<i>Ilex compacta</i>	Ornamental	Lantana Scale
Houston	Amaryllis	Ornamental	Convict Caterpillar

County	Crop	Category	Specimen Name
	Bulbs		
Clay	Camellia	Ornamental	Camellia Scale
Pike	Bermuda Grass	Turfgrass	Ground Pearls
Marengo	Sycamore	Ornamental	Blotch Leaf Miner and Sycamore Lace Bug

Disease Possibilities For August & Late Summer

August has been hot and humid with day temperatures in the upper 80s and low 90s. Humidity has generally been high and showers have been frequent in most of the state. These conditions are very favorable for fungal and bacterial foliage diseases and fungal root diseases. Late summer is typically a time when we see a large increase of fungal leaf spots on foliage of woody ornamentals.

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

<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 AL Pest Management Handbook.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	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 (¼ inch

diam.) with purple margins and irregular shape.
Canker: Lesions on branches or trunk are slightly sunken, reddish-brown and show concentric rings of cracked bark.

Sanitation; recommend fungicide treatments.

Fireblight (*Erwinia*)

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.)

Fly Speck (*Microthyriella*)

Tiny black dots occurring in groups on the surface of the apple skin.

Sanitation; see AL Pest Management Handbook or Fruit Spray Guide.

Sooty Blotch (*Gloeodes*)

Blotches of gray (sooty appearance) on the apple skin; often associated with fly speck.

Sanitation; see AL Pest Management Handbook or Fruit Spray Guide.

Southern Blight (*Sclerotium rolfsii*)

Sunken, water-soaked canker at base of the trunk; dieback.

Sanitation; solarization; fumigation; deep plowing to displace sclerotia away from root zone.

Plant

Disease

Description

Control

Arbor-vitae

Phomopsis Canker

Small brown, sunken lesions on small branches.

Sanitation. Cleary's 3336 or Halt.

	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	Botryosphaeria Canker	Sunken stem lesions which often have cracking around lesion edges.	Sanitation. Cleary's 3336 or Halt.
	Phomopsis Dieback	Elongated sunken lesions on branches and twigs.	Pruning; Cleary's 3336 protective sprays.
	<i>Phytophthora nicotiana</i> Aerial Blight	Brown blotches develop on leaves. Brown lesions may develop on small twigs.	Sanitation. See the AL Pest Management Handbook under Phytophthora Shoot Blight.
	Phytophthora Crown/Root Rot	Crowns/roots become brown and wet or water-soaked.	See the AL Pest Management Handbook.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
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.	----
Beans, Garden	Anthrachnose (<i>Colletotrichum</i>)	Circular and irregular reddish spots develop on leaves and pods.	See the AL 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 (<i>Meloidogyne</i>)	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 AL Pest Management Handbook.
Begonia	Pythium Root Rot-Rhizoctonia/Fusarium Lower Stem/Root Rot	Lower stem brown and decayed.	See the AL Pest Management Handbook.
	Ring Nematode (<i>Criconemoides</i>)	Areas of turf yellow and die.	Avoid stressful situations. Commercial turf areas may apply treatment.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Bentgrass	Root Knot Nematode (<i>Meloidogyne</i>)	Spherical-irregular galls on roots; stunted, non-vigorous plants.	Sanitation; crop rotation. See ANR-856.
	Anthrachnose (<i>Colletotrichum</i>)		

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 AL 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 AL Pest Management Handbook.

Ring Nematode (*Criconeoides*)

Areas of turf yellow and die.

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

Sting Nematode Damage (*Belonolimus*)

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.

Plant

Disease

Description

Control

Bermuda

Bipolaris Leaf Spot/Blight

Small, brown, elongate lesions. When numerous, lesions cause entire leaf browning.

See ANR-621.

Brown Patch (*Rhizoctonia*)

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

See ANR-492 or the AL Pest Management Handbook.

Decline (<i>Gaeumannomyces</i>)	Thinning out of grass in patches.	Sanitation; Keep pH at 6.0; do not use nitrate fertilizers.
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 AL Pest Management Handbook.
Exserohilum Crown Rot	Plants turn yellow and dieback. Crowns become decayed.	See ANR-621.
Helminthosporium Blight/Leaf Spot	Leaf lesions are irregular shaped and brownish-green; old lesions become tan or white.	Sanitation; See ANR-621.
Ring Nematode (<i>Criconeoides</i>)	Areas of turf yellow and die.	Avoid stressful situations. Commercial turf areas may be treated with protective nematicides.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Spiral Nematode (<i>Rotylenchus</i>)	Areas of turf yellow and die.	Avoid stressful situations. Commercial turf areas may be treated with protective nematodes.
	Take-all Patch (<i>Gaeumannomyces</i>)	Yellowing of individual plants followed by dieback; thinning out of grass in patches.	See the AL Pest Management Handbook.
Birch, River	Anthracnose	Brown leaf spots and blotches; some times lesions follow along veins.	Sanitation of fallen leaves in the fall.
Blackberry	Cane & Leaf Rust (<i>Kuehneola</i>)	Canes & leaves develop yellow blotches and small yellow-orange powdery spots develop on the yellowed tissue areas.	Sanitation. See ANR-50 or the AL Pest Management Handbook.
	Downy Mildew (<i>Peronospora</i>)	Yellow leaf spots that will become dark gray or brown. When humidity levels are high, a thin, webby, gray mold appears on the lower leaf surface.	See ANR-50 for homeowner blackberries.
	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.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>

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. Follow recommendations for anthracnose on blueberry.
	Septoria Leaf Spot	Small, circular, white-tan spots with purple borders; stem lesions are sunken with tan or gray centers with red-brown margin.	
	Summer Stress Chlorosis	Plants become yellowed and sometimes leaves develop small red spots.	Increase irrigation and nitrogen application.
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. 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.	
Butterfly Bush	Dodder	A yellow, leafless vine on plant; sometimes small yellow-white flowers are present.	Remove vine before it produces flowers.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Cabbage, Ornamental	Fusarium Wilt	Plants leaves turn yellow; oldest leaves become yellow first. Wilt	also occurs.

Remove damaged plants. Do not plant	cabbage and related plants for 10	years.	
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 AL Pest Management Hand-book.
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.
	Watermelon Mosaic Virus	Usually a regular mosaic pattern of yellow and green on leaves.	Sanitation. Control of aphids may help some.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	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 Hand-book.

Exserohilum Blight

See Bermuda with Helminthosporium Blight.

See AL Pest Management Handbook.

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

Patches of grass yellow and die; may be stress-related.

See ANR-823; Bayleton is labelled.

Cherry

Bacterial Canker (*Pseudomonas*)

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 (*Xanthomonas*)

Reddish, water-soaked spots develop; centers of older spots fall out.

Sanitation.

Chrysanthemum

Bacterial Leaf Spot (*Pseudomonas*)

Dark brown/black, small (2-4 mm diam.), angular spots; sometimes with water-soaked edges.

Sanitation.

Botrytis Blight

Brown spots, blotches.

See AL Pest Management Handbook.

Plant

Disease

Description

Control

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 AL 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 AL 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 AL 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 AL Pest Management Handbook.
Cucumber	Anthrachnose (<i>Colletotrichum</i>)	Angular, brown, water-soaked spots on leaves, stems.	See the AL 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 AL Pest Management Handbook.
	Seiridium Canker	Elongated, sunken lesions on branches and trunk; sap (resin) oozes onto bark.	Sanitation; See AL Pest Management Handbook.
Daisy, Gerbera	Phytophthora Leaf Blight/Crown Rot	Leaves develop brown blotches; lower stem develop brown lesions; plants collapse.	See the AL Pest Management Handbook.
Daylily	Kabatiella Leaf Spot	Yellow leaf spots and streaks on leaves. Leaf blight will follow.	Sanitation. Remove damaged foliage. Protective sprays of Cleary's 3336 or Halt will help.
	Phytophthora Root Rot	Plants become non-vigorous and stunted; dieback.	Sanitation. Remove damaged plants and root associated soil. Keep area well drained. Replant with different daylily variety or different plant type.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	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.

Powdery Mildew
(*Phyllactinia*)

Powdery white dusting on leaves; foliage distortion and death.

Sanitation in the fall; See AL. 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
(*Elsinoe*)

Tiny red spots on flowers, leaves.

Sanitation in fall; See AL Pest Management Handbook.

Eggplant

Early Blight
(*Alternaria*)

Brown oval spots on leaves & stems. Sometimes spots have target patterns.

Sanitation. See the AL Pest Management Handbook.

Elm

Bacterial Leaf Scorch
(*Xylella*)

Dieback of branches; leaf scorch.

Tree removal.

Plant

Disease

Description

Control

Cristulariella Zonate Leaf Spot

Large (¼-½ inch diam) oval, zonate spots.

Sanitation of leaves in the fall.

Euonymus

Anthracnose
(*Colletotrichum*)

Small, whitish spots (1/16 in. diam.) on foliage.

Recommend fungicide sprays. See AL Pest Management Handbook.

Fatsia

Anthracnose

Brown leaf spots and blight.

Collect all fallen leaves; apply protective sprays of Cleary's 3336 or

Halt. See label		directions.	
	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 AL Pest Management Handbook.
Fescue	Anthracnose (<i>Colletotrichum</i>)	Brown spots and blotches develop on grass blades.	See AL 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 AL Pest Management Handbook.
	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.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
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 AL	Pest Management	Handbook.	
Floamflower	Anthrachnose (<i>Colletotrichum</i>)	Brown, circular-irregularly-shaped spots on leaves & stems.	Sanitation. Protective sprays of Cleary's or Halt would help.
Forsythia	Anthrachnose	Brown, leaf spots/blotches.	Sanitation. See AL Pest Management Handbook.
<i>Gomphrena glabosa</i>	Fusarium Crown Rot	Brown, dried, decayed lower stem.	Sanitation; Crop rotation.
Grape	Anthrachnose (<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 and gray center, fruit rot follows.	Sanitation; recommend fungicide sprays.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Black Rot (<i>Guignardia</i>)	<u>Leaves:</u> Reddish-brown spots with black margins (2-5 mm diam.); spots circular or slightly lobed. <u>Shoots,</u> <u>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	Black Root Rot	Poor growth; dieback; plants stunted; lower foliage yellowing; root segments are black.	Sanitation. Remove damaged plants. Do not replant holly for approximately 3-5 years.
	Botryosphaeria Canker	Elongated, sunken, cracked cankers.	Sanitation.
	Phytophthora Root Rot	Roots become brown and water-soaked; plants become yellowed with dieback.	See the AL 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	Foliar Nematode (<i>Aphelenoides</i>)	Angular yellow leaf spots that become black.	Sanitation.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	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.
Hydrangea	Anthracnose (<i>Colletotrichum</i>)	Brown, irregular leaf spots and sometimes cankers. Leaf spots may follow along leaf veins.	Sanitation. See the AL Pest Management Handbook.
	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.

Bacterial Leaf Spot

Water-soaked, dark, angular leaf spots.

Damaged leaves should be removed. Do not water overhead.

Cercospora Leaf Spot

Brown, circular or angular leaf spots.

Sanitation. See AL Pest Management Handbook.

Colletotrichum Blossom Blight

Blossoms become covered with brown spots.

Sanitation. Cleary's 3336 may be applied for protective disease control.

Corynespora Leaf Spot

Brown, oval, zonate leaf spots.

Sanitation.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	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 AL Pest Management Handbook.
Impatiens	Phytophthora Root Rot	Wet, water-soaked brown lesions on roots.	See the AL Pest Management Handbook.
	Rhizoctonia Crown and Root Rot	Crowns and roots become brown and dry rotted.	Sanitation; solarization may help.
Ivy, English	Anthrachnose	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.
	Colletotrichum Leaf Spot	Brown leaf spots that are circular or irregular.	See the AL 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.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	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 AL Pest Management Handbook.
Juniper	Pestalotiopsis Needle Blight	Needles turn brown in patchy areas on branches.	Sanitation; see AL Pest Management Handbook; avoid stress.
	Phomopsis Tip Blight	Tips of lower branches dieback.	See the AL 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.
Laurel, Cherry	Blumeriella Leaf Spot	Brown, roundish leaf spots that often fall out.	Sanitation. Remove all fallen leaves.
Lantana	Foliar Nematode Blight (<i>Aphelenchoides</i>)	Angular, yellow to brown leaf spots.	Remove the damaged plants. Replace soil in the area if possible.
Leyland Cypress	Botryosphaeria Canker	Elongated, sunken lesions with cracked bark around leaf edges.	Sanitation. Cleary's 3336 or Halt sprays may help.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Cercosporidium Blight (Formerly Cercospora)	Needles of lower branches become brown. Disease may gradually spread through higher branches.	Sanitation. See the AL Pest Management Handbook.

Liatris (Blazing Star)	Southern Blight (<i>Sclerotium rolfsii</i>)	Crown rot develops & causes plant to dieback.	Sanitation; Solarization; root-associated soil removal.
Ligustrum, Japanese	Cercospora Leaf Spot	Brown, slightly angular leaf spots.	Collect all fallen leaves this fall. See the AL Pest Management Handbook under leaf spot.
Liriope	Phytophthora Crown Rot	Crowns become brown and wet rotted. Plants wilt, turn yellow, die.	Remove plants. Remove soil associated with roots. Improve soil drainage.
Magnolia	Algal Leaf Spot	Brown-red, circular, slightly raised leaf spots.	Sanitation. Prune to reduce humidity. See the AL Pest Management Handbook.
Maple	Anthracnose (<i>Kabatiella</i>)	Small-large brown blotches develop on leaves, often following along veins +/- leaf edges.	See the AL Pest Management Handbook.
	Phyllosticta Leaf Spot	Small (4-8 mm diam.) leaf spots develop with brown-purple borders and brown-cream centers.	See the AL Pest Management Handbook, under 'Leaf Spot'.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Maple, Japanese	Anthracnose (<i>Kabatiella</i>)	Small-large brown blotches develop on leaves, often following along veins +/- leaf edges.	See the AL Pest Management Handbook.
	Botryosphaeria Canker	Sunken, cracked lesions on branches.	Sanitation.

Maple, Red	Anthracnose (<i>Colletotrichum</i>)	Irregular brown spots/ blotches on leaves which may follow along veins.	Sanitation. Gather & remove all leaves this autumn.
	Cristulariella Zonate Leaf Spot	Brown, oval, zonate leaf spots.	Sanitation of leaves in the fall.
Maple, Sugar	<i>Monastichella hysteroidea</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 AL Pest Management Handbook, under 'Leaf Spot'.
Mondograss	Anthracnose (<i>Colletotrichum</i>)	Gray, brown spots on leaves.	Sanitation; See AL Pest Management Handbook.
Muscadine	Black Rot (<i>Guignardia</i>)	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 +/- leaf edges.	See the AL 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.
	Hypoxylon 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 AL Pest Management Handbook.
	Powdery Mildew	White powdery areas on leaves; areas eventually become necrotic.	Sanitation.
Oak, Black	Hypoxyylon Canker	Gray-black hard stroma develops under the bark and causes the bark to crack and fall off.	Sanitation.
Oak, Chestnut	Slime Flux	Slightly sunken areas on trunks with sap oozing.	No remedy. Maintain healthy trees. Installation of drain pipe.
Oak, Pin	Bacterial Leaf Scorch	See under "Oak".	
Oak, Post	Tubakia Leaf Spot	Black, irregularly shaped, hard, slightly raised leaf spots.	Collect and remove all fallen leaves this fall.
Oak, Red	Bacterial Leaf Scorch	See Under "Oak".	
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Monochaetia Leaf Spot	Brown, roughly circular, flat leaf spots.	Collect and remove all fallen leaves this fall.
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 AL Pest	Management Hand-	book.	
	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	Sanitation. Rotation.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
		gray-black appearance. This is a problem during dry periods.	
	Fusarium Root Rot	Red-brown lesions on lower stems, upper root areas; dieback wilt.	Rotation for 10-15 years.
Peach	Phony (<i>Xylella</i>)	Trees are stunted with bunched growth.	Tree removal.
	Scab	Dark brown, small, round, slightly	raised and soft leaf spots.

See the AL Pest	Management	Handbook.	
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.
	Diplodia Collar Rot	Wilt, dieback, crown and root rot.	See Austin 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 AL Pest Management Handbook; also Folicur.
	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.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	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 AL 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.
Pear, Bradford	Alternaria Leaf Spot	Brown, roughly circular or oval leaf spots.	Collect and remove all fallen leaves this fall.
	Fabraea Leaf Spot	Dark brown circular leaf spots.	Collect and remove all fallen leaves this fall. See ANR-50.
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.
Peony	Cladosporium Leaf Blotch	Irregular brown leaf spots/blotches.	Sanitation.
Pepper	Anthracnose (<i>Colletotrichum</i>)	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 water-soaked.

Rotation; improve water drainage.

Tomato Spotted Wilt Virus

Foliage mottled; new growth stunted.

Sanitation; control thrips.

Periwinkle

Anthracnose (*Colletotrichum*)

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.

Plant

Disease

Description

Control

Phytophthora Root Rot

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

Sanitation; solarization.

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.
Petunia	Tomato Spotted Wilt virus	Plants are stunted; yellow mottle may be present.	Sanitation. Control thrips.
	Phytophthora & Pythium Root Rot	Roots brown and water-soaked, rotted.	Sanitation. See AL Pest Management Handbook.
Pine, Seedlings	Pythium Root Rot	Plants are stunted, yellowed, die; roots are light brown and wet decayed.	Sanitation. See the AL Pest Management Handbook.
Pine, Virginia	Fusarium Pitch Canker	Sunken lesions that ooze sap.	Sanitation.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Lophodermium (<i>Ploioderma</i>) 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 AL 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.
Plum	Bacterial Scorch (<i>Xylella</i>)	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 (<i>Erwinia</i>)	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 AL Pest Management Handbook.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
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 (<i>Meloidogyne</i>)	Irregular galls on roots and on tuber surfaces.	Sanitation; crop rotation to nematode suppressive crops; resistant varieties; See ANR-856.
	Scab (<i>Streptomyces scabies</i>)	Rough, circular, irregular lesions on tubers.	See the AL Pest Management Handbook.
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 AL Pest Management Handbook.

	Plectosporium Blight	Raised, corky, brown, irregularly shaped lesions on stem, petioles, leaves, and fruit surfaces.	Sanitation. See Ed Sikora.
	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 AL Pest Management Handbook.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
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 AL Pest Management Handbook.
Rosemary	Fusarium & Pythium Root Rot	Dried, decayed roots.	Sanitation; avoid environmental stresses.
	Phytophthora Root Rot	Brown, water-soaked roots become dried.	Sanitation. Reduce irrigation.
Sesame	Fusarium, Pythium Wilt/Root Rot	Brown water-soaked rots.	---
	Fusarium Associated With Stem Cankers	Brown dried, elongated cankers.	---
	Leaf/Pod Blotch (<i>Colletotrichum, 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	Anthrachnose (<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.
	Charcoal Rot (<i>Macrophomina</i>)	See comments for field pea. This is usually a dry weather problem.	Rotation. Plow under crop residue.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Rhizoctonia Crown & Root Rot	Lower stems and roots develop a dry, brown decay.	Rotation. Plow under crop residue.
Soybean	Aerial Blight Root Rot (<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 AL Pest Management Handbook or Soybean Pest Management Circular ANR-413.
	Anthrachnose (<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 (*Macrophomina*)

See comments for field pea. This may be a problem when conditions are dry.

Rotation. Deep plow.

Plant

Disease

Description

Control

Cyst Nematode (*Heterodera*)

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 (*Peronospora*)

Yellow spots develop on upper leaf surfaces. On corresponding areas of lower leaf surfaces, gray-purple tufts of mycelium/ spores develop.

See the AL Pest Management Handbook or Soybean Pest Management Circular ANR-413.

Frogeye Leaf Spot (*Cercospora*)

Leaves: Circular-angular spots with a dark red-brown border. Stems: Elongated gray lesions with red-brown margins. Pod: Circular to irregular, slightly sunken gray spots with dark red-brown

borders.

See AL Pest	Management	Handbook and	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 AL Pest Management Handbook or ANR-413.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Nematode, Stunt (<i>Tylenchorhynchus</i>)	Plants are yellowed, stunted, unthrifty; roots are abnormally shortened.	See AL Pest Management Handbook.
	Pod & Stem Blight (<i>Diaporthe</i>)	Pods and stems develop blight areas. Black fruiting bodies of the fungus develop in straight lines on the infected tissue areas.	Rotation. See the AL Pest Management Handbook.
	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 AL 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.	Crop rotation.

	Southern Blight (<i>Sclerotium rolfsii</i>)	A wet rot of the crown area. Tissues become brown and wet rotted. A white mold may develop at the soil line.	Deep plow.
	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.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Squash	<i>Microdochium</i> (<i>Plectosporium</i>) Blight	Cream-colored, slightly raised, corky spots on fruit and stems mostly.	Sanitation. See Ed Sikora.
	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 AL 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 AL Pest Management Handbook.
	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.
<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Strawberry	Common Leaf Spot (<i>Mycosphaerella</i>)	Reddish-bordered spots with gray centers.	Sanitation. See the AL Pest Management Handbook.
	Phomopsis Leaf Spot	Brown blotches that often develop along leaf edges. Spots usually have purple-red edges.	Sanitation. See the AL Pest Management Handbook.
Sweet Gum	Cercospora Leaf Spot	Oval, irregular brown leaf spots.	Sanitation.
	Phyllosticta Leaf Spot	Circular leaf spots with dark borders.	Sanitation of leaves this fall.
Sycamore	Anthrachnose (<i>Discula</i>)	Brown irregular blotches develop along leaf veins and/or along leaf edges. Defoliation may follow.	See the AL 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.

Tomato

Anthrachnose
(*Colletotrichum*)

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 AL Pest Management Handbook or Vegetable Spray Guide.

Plant

Disease

Description

Control

Bacterial Canker
(*Clavibacter*)

Elongate, brown, wet-looking lesions or cankers on stems; center of cankers dry and look white.

Protective sprays; Sanitation.

Bacterial Leaf Spot
(*Xanthomonas axonopodis* pv. *campestris*)

Very small, brown or black angular leaf spots; outer edges of spots may appear wet or water-soaked.

Sanitation; See the AL Pest Management Handbook.

Bacterial Wilt
(*Pseudomonas solanacearum*
Ralstonia solanacearum)

Green healthy plants wilt and collapse rapidly.

Sanitation.

Cristulariella Zonate Leaf Spot

Relatively large (¼ inch diameter and larger), light brown zonate spots.

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
(*Alternaria*)

Black or brown spots (¼-½ 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. Vascular system is brown.

Resistant varieties;
Rotation.

Plant

Disease

Description

Control

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.

Viburnum

Southern Blight
(*Sclerotium rolfsii*)

Plants wilt, dieback.
A white mold may
develop at the soil
line.

Sanitation. Deep
plow.

Plant

Disease

Description

Control

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.

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

Anthrachnose

Black circular spots
on leaves, stems;
dieback.

Sanitation; See AL
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.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Gummy Stem (<i>Mycosphaerella</i>)	Elongate, brown, wet and sometimes 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.
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.
Willow, Curly	Cercospora Leaf Spot	Oval-irregular brown leaf spots.	Sanitation.
Wisteria	Phomopsis Stem Blight	Dieback and brown, dried sunken lesions.	Sanitation; Cleary's 3336.
Zelcova, Japanese	Cercospora Leaf Spot	Oval-irregular brown spots.	Sanitation.

Zoysia	Bipolaris Leaf Spot and Crown Rot	Brown, small elongated leaf spots; yellowing and dieback.	See ANR-621 and the AL Pest Management Handbook.
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<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Curvularia Blight	Foliage develops brown leaf spots and blight.	See Austin Hagan.
	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 AL Pest Management Handbook.
	Exserohilum Crown Rot	Yellowing and dieback. Crown areas become brown and dry decayed.	See ANR-621 and the AL 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.
	Take-All Patch (<i>Gaeumannomyces graminis</i> pv <i>graminis</i>)	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. Remember to enclose the soil in a plastic bag. Remember to tell us what crop is to be grown!