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# TIMELY INFORMATION PLANT PATHOLOGY SERIES

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## AUGUST PLANT PROBLEM REPORT FROM THE AUBURN PLANT DIAGNOSTIC LAB

## AUGUST PLANT PROBLEM REPORT FROM THE BIRMINGHAM PLANT DIAGNOSTIC LAB

## AUGUST INSECT REPORT FROM THE AUBURN PLANT DIAGNOSTIC LAB

### DISEASE POSSIBILITIES FOR SEPTEMBER

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Auburn Plant Disease Report-August (J. Mullen)

August was busy with 229 plant samples received.

Many samples were soybeans, and a variety of diseases were diagnosed on this crop. Bacterial leaf spots (*Xanthomonas* and *Pseudomonas*), *Cercospora* leaf spots, and downy mildews were diseases frequently seen. Soybean rust (*Phakopsora*) was identified on 13 samples (See Table 1 for county locations) in field surveys and then confirmed by lab microscopic viewing of uredispores and pustules of the fungus. One sample was confirmed by PCR in Florida as Asian soybean rust, *Phakopsora pachyrhizi*. Early stages of the above leaf spots can sometimes be confused when viewing them visually. Early bacterial leaf spots may be especially similar to rust spots as viewed visually. Under a 20 x and higher magnification, bacterial spots usually display a watersoaked area around the spot edge. The diagnostic structures for the rust are the pale orange-white spores and the rust pustules that resemble small 'volcano-like' structures with a whole at the top. *Cercospora* and downy mildew are identified by their microscopic spore structures. Mature spots of these 2 pathogens are usually brown, irregular or oval-round and much larger than the rust small, angular, brown spots. Stem canker

was observed in two more counties. Myrothecium and target spots (*Corynespora*) were seen as unusual disease occurrences on soybean.

Asian soybean rust was found on kudzu in Baldwin and Conecuh counties.

All 51 of our Phytophthora genus positive possible sudden oak death DNA samples (where ELISA showed the Phytophthora genus to be present) sent to Beltsville for PCR testing came back to us with negative results. So, thus far this year, we have not identified *P. ramorum* in any of the 239 landscape, and nursery plants tested. As temperatures drop this fall, the disease, if present, could become active so remember to watch for leaf spots and leaf edge scorches on rhododendrons, pieris, viburnums, camellias, mountain laurels, and lilac purchased during the past 3 years. Also, please be aware and notice bleeding cankers on oaks or other trees in the Fagaceae family such as beech, chestnut, and chinquapin. Please go back and review SOD handouts given to you last spring. Sudden oak death (SOD) symptomatic plants should be sampled by State Department of Agriculture Inspectors who will bring or send them to our lab for ELISA testing.

*Sclerotium rolfsii* was seen as a crown rot on ageratum, vinca, and tomato. See page 6 for more comments on this disease.

Chrysanthemum and cotton samples contained a variety of diseases. Abundant rainfall undoubtedly contributed to the increase in disease types seen.

Xylella bacterial scorch was identified on oak and pin oak in August. Refer to comments on page 11.

Also, please remember that early fall is the best time of year to check soils for nematode problems.

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

<u>Plant</u>	<u>Disease</u>	<u>County</u>
Ageratum	<i>Sclerotium rolfsii</i> Crown Rot	Geneva
Arugula	Anthracnose ( <i>Colletotrichum</i> )	*
Azalea	Phytophthora Root Rot & Crown Rot	*(2)
Bermudagrass	Bipolaris Leaf Spot	*
Beans, Bush	Anthracnose ( <i>Colletotrichum</i> )	Baldwin
	Sclerotinia Stem Rot	Limestone
Beans, Butter	Suspect Old Anthracnose	Escambia

<u>Plant</u>	<u>Disease</u>	<u>County</u>
Bentgrass	Nematode-Ring ( <i>Criconemoides</i> )	*
	Pythium Blight	*(2)
Boxwood	Macrophoma Blight	Calhoun
	Volutella Blight	Calhoun
Caladium	Pseudomonas Leaf Spot	Baldwin
Centipedegrass	Fairy Ring	Houston
	Take-All Patch ( <i>Gaeumannomyces</i> )	Montgomery
Chrysanthemum	Ascochyta Blight	*
	Curvularia Leaf Spots	*
	Fusarium Stem Rot & Wilt	*
	Phytophthora Root Rot	*
	Pythium Root Rot	*
Cotton	Anthracnose Boll Rot	Tallapoosa
	Anthracnose Foliage Blight	Henry
	Cercospora Leaf Spot	Henry, Tuscaloosa
	Fusarium Wilt	Geneva
	Phomopsis Leaf Spots	Tuscaloosa
	Stemphyllium Leaf Spots	Tallapoosa, Tuscaloosa
Cottonwood	Septoria Leaf Spot	Houston
Cowpea	Bacterial Leaf Spot	Baldwin, Escambia
	Cercospora Leaf Spot	Baldwin
Dogwood	Cercospora Leaf Spot	Baldwin

<u>Plant</u>	<u>Disease</u>	<u>County</u>
Holly, Helli	Macrophoma Blight	Barbour
	Volutella Blight	Baldwin
Hydrangea	Pythium Root Rot	Calhoun
Ivy, English	Anthracnose ( <i>Colletotrichum</i> )	Cullman, Lee
Kudzu	Asian Soybean Rust	Baldwin(2), Conecuh
Maple	Suspect Septoria Leaf Spot	Baldwin
Nandina	Anthracnose ( <i>Colletotrichum</i> )	Calhoun
	Suspect Virus	Calhoun
Oak, Pin	Xylella Bacterial Scorch ( <i>Xylella fastidiosa</i> )	Calhoun
Pea, Field	Fusarium Stem & Root Rot	Geneva
Peach	Phony ( <i>Xylella fastidiosa</i> )	Baldwin
Pecan	Powdery Mildew	Calhoun
	Scab ( <i>Cladosporium caryigenum</i> )	Calhoun
Pepper, Bell	Fusarium Vascular Wilt	Autauga
	Pythium Root Decay	Autauga
Photinia	Entomosporium Leaf Spot	Lee
Plum	Botryosphaeria Canker	Montgomery
Soybean	Aerial Blight ( <i>Rhizoctonia solani</i> )	Covington, Dallas, Fayette, Jackson
	Anthracnose ( <i>Colletotrichum</i> )	Autauga

<u>Plant</u>	<u>Disease</u>	<u>County</u>
	Bacterial Leaf Spots	Autauga(2), Bullock(2), Colbert(3), Dallas, Elmore(4), Fayette, Hale, Henry(3), Lawrence(2), Marshall, Marion(2), Perry, Talladega
	Cercospora Leaf Spot	Autauga, Blount(5), Colbert, DeKalb, Fayette, Hale, Henry, Lauderdale, Lawrence, Talladega(2)
	Downy Mildew ( <i>Peronospora manshurica</i> )	Autauga(2), Blount(5), Colbert(2), Dallas, DeKalb, Elmore(4), Fayette(2), Franklin(2), Hale, Houston, Lauderdale(5), Lawrence(3), Perry, Randolph
	<i>Fusarium solani</i> Root Rot (Sudden Death Syndrome)	DeKalb
	Myrothecium Leaf Spot	Autauga
	Phomopsis Stem Blight	Lowndes
	Soybean Rust ( <i>Phakopsora</i> sp.)	Autauga, Baldwin(3), Coffee, Conecuh, Elmore(2), Escambia, Henry, Houston, Lee, Talladega(2)
	Stem Canker ( <i>Diaporthe phaseolarum</i> var. <i>caulivora</i> )	Jackson, Perry
	Target Spot ( <i>Corynespora cassiicola</i> )	Fayette
Spathiphyllum	Pythium Root Rot	Lee
St. Augustinegrass	Gray Leaf Spot ( <i>Piricularia grisea</i> )	Calhoun
	Take-All Patch	Calhoun, Colbert, Elmore, Mobile, Washington
Sweet Potato	Pythium Root Rot	Cullman

<u>Plant</u>	<u>Disease</u>	<u>County</u>
Tomato	Pythium Root Rot	Marshall
Vinca	<i>Sclerotium rolfsii</i> Crown Rot	Geneva
Zoysia	Rust ( <i>Puccinia zoysia</i> )	Houston
	Take-All Patch	Autauga

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

### Monthly Plant Problem Report From The Birmingham Lab (J. Jacobi)

We received 109 samples in August. Some of the problem diseases last month included sooty blotch and fly speck on apple, southern blight on begonia, web blight on rosemary, Phytophthora crown rot on daphne, anthracnose and black rot on grape, and various leaf spot diseases on a wide range of woody shrubs and trees especially ornamental cherry and hydrangea.

Although the water mold fungi Pythium and Phytophthora, are typically more common problems on begonia, southern blight (*Sclerotium rolfsii*) can also cause a crown and root rot of this plant. Sclerotium initially attacks the root system or stem at the soil line. The rapid decay of the roots and stems causes wilting and death of the plant. This fungus forms yellow or tan pellets (sclerotia) that resemble mustard seeds. The sclerotia can survive in soil or plant debris for many years. Control of this disease usually requires a combination of cultural and chemical control measures. Remove and destroy infected plants and soil within 6 inches around them to reduce the number of overwintering sclerotia. Do not plant susceptible plants in landscape beds contaminated by this fungus. For a list of plants susceptible to Sclerotium, see the attached publication. Products that contain flutolanil (Prostar and Contrast) or azoxystrobin (Heritage) are labeled for control of southern blight and provide good control under most conditions. Always make sure that the plant you intend to spray is listed on the label. See ANR-1157, Southern Blight on Flowers, Shrubs and Trees ([www.aces.edu/departments/extcomm/publications/anr/anr-1157/anr-1157.html](http://www.aces.edu/departments/extcomm/publications/anr/anr-1157/anr-1157.html)) for more information.

Web blight or Rhizoctonia blight on Rosemary is caused by the fungus *Rhizoctonia solani*. Brown spider web-like hyphae of Rhizoctonia growing in the canopy of infected plants is a common sign of web blight. The disease is more common during extended periods of warm, humid weather. One research report indicated that this disease might kill prostrate forms of rosemary, whereas upright forms generally have less damage. The fungicides thiophanate-methyl and mancozeb provide good control of web blight under most conditions.

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

<u>Plant</u>	<u>Problem</u>	<u>County</u>
Apple	Fly Speck	Jefferson
	Sooty Blotch	Jefferson
Azalea	Azalea Caterpillar	Jefferson
	Gall Midge ( <i>Clinodiplosis</i> )	Jefferson/Shelby
	Powdery Mildew	Tuscaloosa
Begonia	Southern Blight ( <i>Sclerotium</i> )	Jefferson
Bentgrass	Algae	*
	Anthracnose	*(3)
	Black Layer	*
	Heat Stress	*(2)
	Pythium Root Dysfunction	*(3)
Bermudagrass	Dollar Spot ( <i>Sclerotinia</i> )	Shelby
Boxwood, Common	Macrophoma Blight	Jefferson
	Water Stress	Jefferson
Cherrylaurel	Shot Hole	Shelby
Collards	Harlequin Bug	Jefferson
Crape Myrtle	Black Lice	Jefferson
	Crape Myrtle Aphid	Jefferson
	Sooty Mold	Jefferson
Cypress, Leyland	Cercosporidium Needle Blight	Jefferson
Cherry, Flowering	Cercospora Leaf Spot	Jefferson/Shelby

<u>Plant</u>	<u>Problem</u>	<u>County</u>
	Coccomyces Leaf Spot	Jefferson
	San Jose Scale	Shelby
Daphne	Phytophthora Crown Rot	Jefferson
Forsythia	Phomopsis Gall	Jefferson
Ginkgo	Marginal Leaf Scorch	Jefferson
Grape, Bunch	Anthracnose	Tuscaloosa
	Black Rot	Chilton
Hydrangea, Bigleaf	Cercospora Leaf Spot	Jefferson
	Corynespora Leaf Spot	Jefferson
Impatiens	Spider Mite Damage	Jefferson
Indian Hawthorn	Entomosporium Leaf Spot	Tuscaloosa
Ivy, English	Phytophthora Root Rot	Jefferson
Juniper, Blue Pacific	Phytophthora Root Rot	Jefferson
Juniper, Blue Rug	Armillaria Root Rot	Shelby
Leucothoe, Florida	Ambrosia Beetle	Tuscaloosa
Maple, Japanese	Phyllosticta Leaf Spot	Jefferson
Maple, Red	Marginal Leaf Scorch	Jefferson
Maple, Sugar	Armillaria Root Rot	Jefferson
Morning Glory	Rust ( <i>Coleosporium</i> )	Talladega
Oak, Pin	Bacterial Leaf Scorch ( <i>Xylella</i> )	Jefferson
Oak, Shumard	Anthracnose	Jefferson
	Bacterial Leaf Scorch ( <i>Xanthomonas</i> )	Jefferson

<u>Plant</u>	<u>Problem</u>	<u>County</u>
Peach	Bacterial Spot ( <i>Xanthomonas</i> )	Chilton
	Brown Rot ( <i>Monilinia</i> )	Jefferson
Pecan	Pecan Scab ( <i>Cladosporium</i> )	Jefferson
Pieris	Southern Red Mite	Jefferson
Rose	Pythium Root Rot	Jefferson
Rosemary	Phytophthora Root Rot	*
	Web Blight ( <i>Rhizoctonia</i> )	Jefferson
Soybean	Bacterial Leaf Spot	Etowah/Talladega
	Downy Mildew	Etowah
	Frogeye Leaf Spot	Jefferson
St. Augustine	Gray Leaf Spot	Jefferson(3)
Tomato	Early Blight	Jefferson
	Pythium Root and Stem Rot	Blount
Zoysia	Fairy Ring	Jefferson

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

Auburn Entomology Report-August (C. Ray)

<b>County</b>	<b>Crop</b>	<b>Category</b>	<b>Specimen Name</b>
Lee	Home	Household-Miscellaneous	Giant Resin Bee
Jefferson	Maple	Ornamental	Gloomy Scale
Jefferson	Tomato	Row Crop	A Bumblebee
Limestone	Honeybee Hive	Beekeeping	Honeybee
Montgomery	Red Maple	Ornamental	Gloomy Scale
Limestone	Human	Medical	Lone Star Tick
Coffee	Home	Household-Miscellaneous	Whitefringed Beetle

County	Crop	Category	Specimen Name
Shelby	Oak	Ornamental	Orange-Striped Oak Worm
Winston	Wooden Home	Structural	A Sphecid Wasp
Houston	Centipede Grass	Turfgrass	Rhodesgrass Scale
Jefferson	Lawn	Household-Miscellaneous	Carpenter Ant, <i>Camponotus americanus</i>
Escambia	Water Oak	Ornamental	Bark Lice
Mobile	Household	Stored Product	Pyralidae, poss. Indian Meal Moth
Lee	Building	Household-Miscellaneous	Fishing Spider
Blount	Lawn	Household-Miscellaneous	An Ant, <i>Formica integra</i>
Cullman	Lawn	Household-Miscellaneous	Eastern Subterranean Termite
Lauderdale (11 samples)	Dried Spices	Stored Product	Cigarette Beetle & Bethyloid Wasp
Jefferson	Crape Myrtle	Ornamental	Common Bark Lice
Jefferson	Flowering Cherry	Ornamental	San Jose Scale
Calhoun	Blueberry	Small Fruits	Yellownecked Caterpillar
Marengo	Cabbage Palm	Ornamental	Palmetto Scale
Mobile	Hibiscus	Ornamental	Pink Hibiscus Mealybug*
Mobile	Hibiscus	Ornamental	Pink Hibiscus Mealybug*
Lee	Oak	Ornamental	Yellow Necked Caterpillar
Lee	Oak	Ornamental	Green Fruitworm
Lee	Oak	Ornamental	Imperial Moth Caterpillar
Lee	Oak	Ornamental	Orange Striped Oakworm
Montgomery (5 samples)	Oaks	Ornamental	Spider Mites, Yellow Mites, Eriophyid mites(3), Tarsonemid Mites, False Spider Mites
Sumter	Tomato	Row Crops	Leaf-Footed Bug
Jefferson	African Furniture	Structural	Lesser Auger Beetle
Tuscaloosa	Cornus sericea	Ornamental	A Sawfly
Coffee	Human	Medical	Rove Beetle
Houston	Cottonwood	Ornamental	Gloomy Scale
Colbert		Miscellaneous	A Clubionid Spider
Escambia	Blueberry	Small Fruit	Yellow Necked Caterpillar
Clarke	Ornamental Bahia Grass	Ornamental	An Armored Scale, <i>Duplachionaspis divergens**</i>
Clarke		Ornamental	A Mealybut, <i>Phenacoccus madeiriensis</i>

County	Crop	Category	Specimen Name
Cullman	Soybeans	Row Crops	Whiteflies, Spider Mites, Lepidopteran
Cullman	Soybeans	Row Crops	Spider Mites, Lepidopteran Larvae, Thrips
Cullman	Soybeans	Row Crops	Aphids, Thrips
Lauderdale	Soybeans	Row Crops	Whiteflies, Thrips
Cullman	Soybeans	Row Crops	Whiteflies, Thrips, Spider Mites
DeKalb	Soybeans	Row Crops	Whiteflies, Aphids, Thrips, Spider Mites
Lee	Dayflower	Ornamental	Six-Spotted Leaf Beetle Larvae
Coffee	Home	Household-Miscellaneous	Flying Ants
Wilcox	Okra	Row Crops	Probable Stink Bug Damage
Geneva	Peas	Row Crops	Probable Leaf Beetle Damage
Colbert		Miscellaneous	Flying Ant

\*First Record of Pink Hibiscus Mealybug (PHMB) in Alabama. Plants destroyed and eradication measures implemented by Alabama Department of Agriculture & Industries. PHMB feeds on more than 300 different plants including ornamentals, row crops and trees. Rapidly build up of large number on infested plants and often cause plant distortion because of phytotoxic saliva. If suspicious mealybugs are found, place in alcohol and immediately ship to Plant Diagnostic Lab.

\*\*Exotic species discovered in Florida in 2002. New State Record.

### Disease Possibilities For September

Seasonably cooler conditions are more favorable for powdery mildew and downy mildew. Both of these diseases cause yellow blotches on dicot leaves. With powdery mildew, blotches may be more diffuse and a white dusty layer may be visible on the upper and/or lower leaf surfaces. With downy mildew, yellow spots may begin as more definitive angular yellow spots. These spots may merge resulting in large yellow areas. On lower leaf surfaces when weather is wet, humid and temperatures are 60-80°F, a brown-gray-colored webbing may be present on lower leaf surfaces. These diseases are often confirmed in the lab by microscopic observation of characteristic spores.

Evidence of bacterial scorch disease may occur in September. Scorch disease, caused by the bacteria *Xylella*, causes leaf edge scorch and dieback of elm, oaks (red and black oaks including northern red, pin, scarlet, southern red, laurel, shingle, and water oaks), sycamore,

mulberry, and red maple. Initial symptoms of scorch may first occur in mid-late June, but disease is often not noticed until late summer or early fall when symptoms are more pronounced. Generally, leaf symptoms progress from older to younger leaves, with leaves at branch tips often showing no symptoms. Scorched leaves curl upward and remain attached. Infected trees develop a progressive dieback and general (usually slow, over many years) decline. Scorch can be confirmed with an ELISA test. Disease symptoms may be confused with drought or root problems. In August of 2002, this disease was confirmed in a sycamore sample from Barbour County and in a plum sample from Mobile County. Bacterial scorch was recently diagnosed on sycamore in Montgomery County.

Many fungal leaf spot diseases will develop on pre-senescent shade tree foliage in September. Generally these spots are of no concern. It is, however, always a good idea to remove fallen spotted foliage from the area later this fall or winter. Stressed trees are more susceptible to these leaf spots.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Abelia	Cercospora Leaf Spot	Small-large brown, circular leaf spots.	Sanitation.
Alfalfa	Summer Black Stem and Leaf Spot ( <i>Cercospora</i> )	Small brown spots become larger (2-6 mm diam.) and reddish brown or smoky brown. During humid conditions, spots become ashy-gray with spores. Lesions occur on stems; small stems and petioles may die from girdling lesions.	Maintain appropriate fertility; harvest frequently.
Ajuga	Cercospora Leaf Spot	Medium brown, circular-irregularly shaped leaf spots of varying sizes.	Sanitation. Cleary's 3336 or Halt may be used.
Althea	Rust ( <i>Puccinia</i> or <i>Kuehneola</i> )	Orange, powdery specks on small yellow leaf spots appear.	Sanitation.
Apple	Bitter Rot ( <i>Colletotrichum</i> )	Initially small gray or brown spots appear on the fruit. These spots enlarge into medium brown circular lesions. Orange spores often develop in concentric rings.	Sanitation. See the Spray Guide for Fruit Crops.
	Black Rot ( <i>Botryosphaeria</i> )	On young fruit, tiny red flecks appear. As fruit matures lesions become large black and irregular sometimes with a red halo.	Sanitation. See the Spray Guide for Fruit Crops.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
		Sometimes alternating rings of brown & black develop. Limb cankers are red-brown, slightly sunken, cracked. Leaf spots are brown with a purple border (4-5 mm diam.)	
	Fly Speck ( <i>Schizothyrium</i> )	Tiny black dots occur in patches (usually) on the surface (only) of apple fruit.	Sanitation. See the Fruit Spray Guide.
	Sooty Blotch ( <i>Gloeodes</i> )	Medium gray spots which resemble sooty smudges appear on surface layer of apple skin only.	Sanitation. See the Fruit Spray Guide.
Aucuba	Lasiodiplodia Canker	Black sunken spots or sunken areas on aucuba stems. Dieback of foliage results.	Cleary's 3336, or Domain protective spray labeled for ornamentals; sanitation.
Azalea	Botryosphaeria Canker	Cracked, sunken lesions on branches.	Pruning.
	Cercospora Leaf Spot	Small dark brown-black, usually circular spots (1-2 mm) scattered over leaf surface.	Sanitation. See the AL Pest Management Handbook.
	Colletotrichum Leaf Spot	Small, round, brown leaf spots.	Sanitation. Protective sprays of Daconil or Cleary's 3336 or Halt could be used.
	Phomopsis Canker/Dieback	Elongated, sunken, elliptical cankers on twigs and branches with resulting dieback.	Sanitation; protective sprays of Cleary's 3336 may help.
	<i>Phytophthora</i> Crown and Root Rot	Lower stem near soil and roots become brown and water-soaked.	Sanitation and proper soil or potting mix drainage are important. See Alabama Pest Management Handbook and ANR-571.
	<i>Rhizoctonia</i> Aerial Blight	Brown, irregular spots and lesions begin on lower leaves. Whole leaves may become blighted; leaf drop occurs.	Sanitation; See AL Pest Management Handbook.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Azalea, Native	Cercospora Leaf Spot	Small, brown, circular spots develop.	Sanitation. Cleary's or Halt may be used.
Bahia Grass	Dollar Spot ( <i>Sclerotinia</i> )	Pale, cream-colored silver dollar-sized spots appear in grass area. Individual grass blades show cream colored spots with brown-black borders.	Sanitation. See the AL Pest Management Handbook.
	Helminthosporium-type Leaf Spot	Tiny (2-3 mm), elongated brown spots may cover leaf and stem, stolon surfaces. Severe spotting may cause foliage death.	Maintain appropriate fertility; harvest as frequently as possible.
Bald, Cypress	Cercosporidium Blight	Lower foliage becomes brown. Microscopic study usually shows small spore bodies of Cercosporidium.	Pruning. Cleary's 3336 will provide protective disease control.
Basil	Rhizoctonia Stem & Root Rot	Wilt, dieback, brown, dry lesion on lower stems, crown, and roots.	Sanitations; crop rotation.
Beans, Garden	Anthracnose ( <i>Colletotrichum</i> )	Black, sunken cankers on pods which become red-orange when spores are produced. Similar spots are found on stems. Foliage symptoms involve black, dead portions of veins on the underside of the leaf. Infections of older plants cause damage primarily to pods.	See the AL Pest Management Handbook.
	Pythium Lower Stem Rot	Lower stems near soil-line show brown, wet rot.	See AL Pest Management Handbook.
	Rhizoctonia Aerial Blight	Leaf blight develops. Leaves become brown and tattered.	Sanitation.
	Rhizoctonia Lower Stem Rot	Lower stems near soil-line have dried brown lesions.	See AL Pest Management Handbook.
	Root-Knot Nematode ( <i>Meloidogyne</i> )	Roots develop round-irregularly shaped galls; plants become yellowed; wilt during dry periods.	Rotate to dwarf French marigolds for 1 year or grasses (such as bahia or centipede) for 3-4 years or solarization.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Uromyces Rust	Reddish-brown powdery pustules on all above ground plant parts, especially lower leaf surfaces.	Protective fungicide sprays. See the AL Pest Management Handbook.
Begonia	Phytophthora Crown Rot	Crown tissues are dark and wet-rotted.	Sanitation. Reduce watering.
	Phytophthora & Pythium Root Rot	Roots become brown and water-soaked, decayed.	Sanitation. Reduce watering. See the AL Pest Management Handbook.
	Rhizoctonia Root Rot	Brown, dry, decayed roots.	Sanitation. Banrot protective drenches.
	Root-knot Nematode ( <i>Meloidogyne</i> )	Galls on roots; plants stunted and wilted.	Solarization.
	Tomato Spotted Wilt Virus	Yellow mosaic and ring spots present. Sometimes brown spots also present.	Thrips control. Sanitation.
Bentgrass	Anthracoze ( <i>Colletotrichum</i> )	Brown leaf spots, dieback; yellowing.	Sanitation; collect clippings; Cleary's 3336. Check with A. Hagan.
	Bipolaris Leaf Spot	Tiny brown leaf spots that will coalesce to cause large areas of leaves to be blighted.	See ANR-621 or the AL Pest Management Handbook.
	Nematode Damage from Ring ( <i>Criconeoides</i> ) and Sting ( <i>Belonolaimus</i> ) Nematodes	Thinned, blighted, yellowed turf areas.	See ANR-523.
	Pythium Root Rot	Roots become light brown, wet, and rotted; foliage dies.	See ANR-594 and the AL Pest Management Handbook.
Bermuda, Coastal	<i>Bipolaris</i> ( <i>Helminthosporium</i> ) Leaf Spot	Tiny (2-3 mm), elongated brown spots may cover leaf and stem, stolon surfaces. Severe spotting may cause foliage death.	Maintain appropriate fertility; harvest as frequently as possible.
Bermudagrass	<i>Bipolaris</i> Leaf/Stem Spot & Blight	See Bermuda, Coastal.	Collect grass clippings; See AL Pest Management Handbook.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Dollar Spot ( <i>Sclerotinia</i> )	Pale, cream-colored, silver dollar-sized spots appear in grass area. Individual grass blades show cream colored spots with brown-black borders.	Sanitation. See the AL Pest Management Handbook.
	Fairy Ring	Large rings or half rings of dead grass with an outer border of dark green turf. When conditions are wet, mushrooms will form in the dark green ring area.	See ANR-372. Also see AL Pest Management Handbook.
	<i>Rhizoctonia</i> Brown Patch	Symptoms may vary slightly depending upon the situation. Typically, light-medium brown, large, circular patches occur on lawns. Individual grass blades develop small to large brown lesions. Lesions may involve the whole leaf blade or whole plants.	Collect grass clippings; See AL Pest Management Handbook.
	<i>Rhizoctonia</i> Leaf & Sheath Blight ( <i>R. zea</i> )	Brown leaf spots; dieback; blight.	Sanitation; collect grass clippings; see ANR-492; See the AL Pest Management Handbook.
	Take-All ( <i>Gaeumannomyces</i> )	Spots or areas in turf become yellowed and thinned. Roots become decayed in spots.	See ANR-823. Also, see AL Pest Management Handbook.
Bermuda, Tifdwarf	Bermudagrass Decline ( <i>Gaeumannomyces graminis</i> var. <i>graminis</i> )	Areas yellow and die out.	See take-all patch recommendations, ANR-823.
Bermuda, Tifeagle	Curvularia Blight	Large leaf areas become blighted. This fungus usually develops as a secondary event.	See AL Pest Management Handbook for brown patch recommended fungicides.
Blackberry	Rust ( <i>Gymnoconia</i> )	Lower leaf surfaces are covered with orange powdery masses of spores; witches brooms may develop. Plants stunted; a systemic disease.	Remove infected plants.
	Septoria Leaf Spot	Reddish-brown angular leaf spots.	See the AL Pest Management Handbook.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Boxwood	Phytophthora Root Rot	Brown, water-soaked roots.	See AL Pest Management Handbook.
	Volutella Blight	Dieback; canker, small-orange specks that are the fruiting bodies of the fungus.	Sanitation. See the AL Pest Management Handbook.
Boxwood, American	Macrophoma Leaf Spot	Yellow-brown blotches or areas, sometimes with small black specks that are the fungus fruiting bodies.	Correct stress conditions. Cleary's 3336 or Halt may be used.
Cabbage	<i>Alternaria brassicicola</i> Stem Blight	Dark brown-black, oval stem lesions; some lesions have a zonate pattern; dieback.	Sanitation; See the AL Pest Management Handbook.
	Black Rot ( <i>Xanthomonas</i> )	Yellow v-shaped lesions at leaf edges. V-shaped lesions become black; eventually, main stem/stalk become black and soft rotted.	Sanitation; Crop rotation 2 years, see AL Pest Management Handbook.
Celosia	Phytophthora, Pythium, Fusarium Lower Stem Rot & Root Rot	Roots brown and decayed.	Sanitation. Reduce watering. Improve soil drainage.
Centipede	Brown Patch ( <i>Rhizoctonia</i> )	See bermudagrass.	See Bermudagrass.
	Dollar Spot ( <i>Sclerotinia</i> )	Pale, cream-colored, silver dollar-sized spots appear in grass area. Individual grass blades show cream colored spots with brown-black borders.	Sanitation. See the AL Pest Management Handbook.
	Ring & Spiral Nematode Damage ( <i>Criconemoides</i> and <i>Rotylenchus</i> )	Patches or areas become yellowed and dieback.	See ANR-523.
Cherry	Septoria Leaf Spot	Small (0.5 cm or less in diam.), angular brown spots.	Sanitation in the fall.
Cherry, Kwanzan	Anthracoze ( <i>Colletotrichum</i> )	Brown spots and blotches along leaf veins and along leaf edges.	Sanitation. Cleary's 3336 or Halt may be applied.
Cherry Laurel	Phytophthora Root Rot/Overwatering	Roots become brown, wet, decayed.	Sanitation; correct excess water problem.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Chrysanthemum	Ascochyta Stem Blight	Brown, irregular, sunken, stem cankers; dieback; yellowing.	Sanitation; See the AL Pest Management Handbook under Ascochyta ray blight.
	Phytophthora Blossom Blight	Brown, wet blotches and blight on flowers.	Sanitation. Avoid over-head irrigation.
	Phytophthora Root Rot	Roots become brown, wet, decayed.	Sanitation; correct excess water problem. See AL Pest Management Handbook.
Clematis	Botrytis Blight	Necrotic blotches. Gray mold may be present when conditions are web.	Sanitation. See the AL Pest Management Handbook.
	Phytophthora Crown & Root Rot	Dieback. Root and lower stem develop wet decay.	Sanitation. Reduce water levels in the area.
Cleyera	Phytophthora Root Rot	See Boxwood.	Sanitation. Improve soil drainage.
Collards	<i>Alternaria</i> Leaf Spot	Gray-black, sooty spots with ring patterns on older leaves; disease of seedlings is severe.	Sanitation. See the 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 is cut cross-wise.	Rotation for 2-3 years; solarization may help.
	Rhizoctonia Wire Stem	The lower stem and major root becomes thin and discolored brown with a dry rot. Plants decline and die.	Remove damaged plants; see the AL Pest Management Handbook.
Coral Bells	Cylindrocladium Root Rot	Brown-black root decay.	Sanitation. Cleary's 3336 or Halt drenches for protective action.
	Pythium Root Rot	Roots become light brown, decayed, and water-soaked.	Sanitation. Reduce water levels in the area.
Coneflower	Phytophthora Root Rot	Dieback. Roots become decayed with a brown, wet rot.	Sanitation. Reduce water levels.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Corn	Charcoal Rot ( <i>Macrophomina</i> )	Gray lesions develop on lower stems and roots. Under the epidermis, numerous resting structures and fruiting bodies are scattered throughout the stem and root tissues which become dried and separate easily. These tissues appear as though they were sprinkled with finely-ground pieces of charcoal.	Maintain healthy plants with proper fertilization and watering if possible, crop rotation.
Cotoneaster	Phyllosticta Leaf Spot	Round, cream-colored leaf spots with dark borders. When severe, leaf drop.	Sanitation; See AL Pest Management Handbook.
Cotton	Alternaria Leaf Spot	Irregular, or circular, slightly zonate brown leaf spots/blotches.	See Ed Sikora.
	Botryodiplodia Pod Decay	Pods become black and decayed.	Sanitation.
	Cercospora Leaf Spot	Irregularly shaped brown leaf spots develop.	See Ed Sikora.
Crape Myrtle	Root-knot Nematode ( <i>Meloidogyne</i> )	Plants grow poorly; roots have galls.	Crop rotation. See Ed Sikora.
	Cercospora Leaf Spot	Irregular shaped brown leaf spots develop.	Sanitation. See the AL Pest Management Handbook.
Cypress, Leyland	Botryosphaeria Canker.	Elongated, sunken, cracked lesions on branches.	Pruning.
	<i>Cercosporidium</i> Blight (formerly <i>Cercospora</i> )	Needle and twig blight that usually begins on lower foliage.	Sanitation. Cleary's 3336 protective sprays.
	Phytophthora Crown Rot	Brown, wet lower trunk decay.	Sanitation. See AL Pest Management Handbook.
	Pythium Feeder Root Rot	Light brown feeder root decay.	Sanitation. See AL Pest Management Handbook.
	Seiridium Canker	Elongated, sunken lesions with oozing sap.	Sanitation; pruning; protective sprays of Cleary's 3336.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Daylily	Daylily Rust ( <i>Puccinia hemerocallidis</i> )	Leaves develop small orange, powdery spots and affected leaf areas become yellow, then brown.	Sanitation. Protective fungicide treatments of Banner Maxx or Heritage are available for commercial situations. Spectracide Immunox or Fertiloam System Fungicide may be used in homeowner situations.
Dianthus	Phytophthora Stem Blight	Brown, water-soaked cankers.	Sanitation. Reduce water levels.
	Pythium Root Rot	Slightly brown, water-soaked root decay.	Sanitation. Reduce water levels. Subdue may be used.
Dogwood	Botryosphaeria Canker	Slightly sunken lesion, sometimes with cracks along the margin.	Sanitation.
	Cercospora Leaf Spot	Angular-irregular tan-brown lesions (2-6 mm diam.) sometimes with a thin yellow halo.	Usually sanitation is the only control measure needed.
	Powdery Mildew ( <i>Oidium</i> ; <i>Microsphaera</i> or <i>Phyllactinia</i> )	White, powdery patches on leaves; affected areas become blighted.	See AL Pest Management Handbook. Sanitation.
	Septoria Leaf Spot	Angular, brown spots, about 1 cm or less in diam; may be confused with Cercospora leaf spot.	Collect and remove fallen leaves this fall.
Dusty Miller	Alternaria Leaf Spot	Dark, angular spots	Sanitation; Cleary's 3336.
Eleagnus	Phytophthora Root Rot	Brown, wet root decay.	Sanitation. Improve soil drainage.
Euonymus	Anthracnose ( <i>Colletotrichum</i> )	Small brown spots (about 5 mm or smaller) on foliage.	Sanitation; See the AL Pest Management Handbook for protective fungicide recommendations.
Fatsia	Colletotrichum Blotch	Brown leaf spots & blotches.	Sanitation of fallen leaves. Cleary's 3336 or Halt would provide protective disease control.
Fern	Anthracnose ( <i>Colletotrichum</i> )	Gray-brown irregular blotches on fronds. Orange spore masses may	Sanitation; See the AL Pest Management Handbook under leaf spot.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
		be present in humid weather.	
	Rhizoctonia Aerial Blight	Gray or brown irregular blotches on fronds; some 'shot-hole'.	Sanitation; See the AL Pest Management Handbook.
Fescue	Brown Patch ( <i>Rhizoctonia</i> )	See bermudagrass.	See bermudagrass.
	Helminthosporium Leaf Spot	Tiny, elongate brown leaf spots that may be numerous, coalesce and cause blight of entire leaf blade.	See ANR-621 or AL Pest Management Handbok.
Fig	Cercospora Leaf Spot	Gray-brown irregular spots, blotches.	Sanitation of leaves in the fall.
Forsythia	Phytophthora Root Rot	Dieback. Lower foliage yellowing and dieback first. Roots become brown discolored and wet rotted.	Sanitation. Reduce water levels. Protective drenches of Subdue where appropriate.
Gardenia	Phytophthora Crown Rot	Lower stem/trunk at the soil line develops wet decay.	Sanitation. (See the AL Pest Management Handbook under Root Rot for protective treatment.)
Grancy Gray Beard	Algal Leaf Spot ( <i>Cephaleuros</i> )	Green-reddish, slightly raised spots with wavy edges.	Sanitation.
Grape	Cercospora Leaf Spot	Angular medium brown leaf spots.	Recommendations for anthracnose should help.
Hickory	Scab ( <i>Cladosporium</i> )	Small, dark brown, slightly raised leaf spots.	Sanitation in the fall.
Holly, Blue Maid	Botryosphaeria Canker	Brown or black sunken, cracked lesions (cankers) on branches.	Sanitation. Protective sprays of Cleary's 3336, Domain or a WP benomyl labelled for ornamentals.
	Phytophthora Root Rot	Feeder roots become water-soaked, decayed.	See the AL Pest Management Handbook.
Holly, Helli	Rhizoctonia Aerial Blight	Lower foliage becomes blighted.	Sanitation. See the AL Pest Management Handbook.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Holly, Japanese	Black Root Rot ( <i>Thielaviopsis</i> )	Dieback; lower foliage often shows yellowing & dieback first. Roots develop black lesions and black tips.	Sanitation. Protective drenches of Cleary's 3336. See the AL Pest Management Handbook.
	Pythium Root Rot	Foliage becomes yellowed on lower branches. Roots become slightly discolored and rotted.	Sanitation. Reduce soil/media water levels. See the AL Pest Management Handbook.
Honeylocust	Crcospora Leaf Spot	Round, brown leaf spots.	Sanitation.
Hosta	Anthrachnose	Brown, circular-oval leaf spots; may show some zonation.	Sanitation; Cleary's 3336 will provide some control.
	Southern Blight ( <i>Sclerotium rofsii</i> )	Lower stems become rotted. A white mold may develop. Small, brown or black mustard seed sized overwintering bodies may appear.	Sanitation. (Removal of soil in root zone, if a small area.)
Hydrangea	Armillaria Root Rot	Sudden dieback; white, thin fungal layer may be present under bark; black thread-like structures may be present over or under bark near roots; honey-colored mushrooms may be present near base of shrub.	Sanitation.
	Cercospora Leaf Spot	Relatively large (0.5-1.0 cm) dark brown circular spots with reddish borders.	Sanitation. See the AL Pest Management Handbook.
	Phytophthora & Pythium Root Rot	Roots become brown and water-soaked.	Sanitation. See the AL Pest Management Handbook.
	Powdery Mildew	White dusting on leaves. Necrosis follows.	See the AL Pest Management Handbook.
Hypericum	Rust ( <i>Uromyces</i> )	Yellow leaf spots; brown powdery pustules on lower leaf surfaces.	Sanitation of infected plant parts.
Impatiens	Alternaria Leaf Spot	Small circular or angular dark brown spots.	Sanitation; a mancozeb product such as Duosan or Zyban.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Indian Hawthorn	Cercospora Leaf Spot; Possible Bacterial Leaf Spot Involvement	Angular, vein-bound brown-red spots.	Sanitation.
Iris	Bacterial Soft Rot	Soft, wet, watery rot of rhizome.	Sanitation. Control insect problems.
	Fusarium Rhizome Rot	Areas of the rhizome exhibit a dry, brown rot.	Sanitation. See the AL Pest Management Handbook.
Irish Potato	Rhizoctonia Black Scurf	Small, black, crusty bodies on tuber surface.	See the AL Pest Management Handbook.
Ivy, English	Alternaria Leaf Spot	Round or oval, brown leaf spots.	Sanitation. Protect T/O or other labeled mancozeb product.
	Anthracnose ( <i>Colletotrichum</i> )	Circular or irregularly-shaped brown leaf spots develop.	Sanitation. See the AL Pest Management Handbook.
	Phytophthora Crown & Root Rot	Tissues dark and water-soaked.	Sanitation; reduce irregular or improve drainage.
	Phytophthora Leaf & Stem Rot	Dark, water-soaked, irregular lesions that become dry.	Sanitation; avoid overhead irrigation; Heritage or Protect T/O.
	Pythium Root Rot	Light brown rotted roots.	See Phytophthora Root Rot.
Juniper	Cercospora (formerly Asperisporium and Cercospora) Blight	Blight of needles beginning with lower foliage.	Sanitation. Cleary's 3336 protective sprays.
	Pestalotia Needle Blight	Lower foliage needle blight associated with plant stress.	Sanitation.
	Phomopsis Dieback	Juniper branch tips become brown. Cankers develop on twigs and dieback continues down the twig.	See the AL Pest Management Handbook.
	Phytophthora Root Rot	See Holly.	See AL Pest Management Handbook.
Leucothoe 'Drooping Rainbow'	Cercospora Leaf Spot	Brown circular to irregular spots.	Sanitation; Cleary's 3336 or Halt.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Ligustrum	Cercospora Leaf Spot	Brown irregular spots (about 1 cm diam.) on foliage; when leaf spot is severe, defoliation may result.	Sanitation; See the AL Pest Management Handbook.
Lilac	Phyllosticta Leaf Spot	Brown or light brown leaf spots with dark margins.	Sanitation. Cleary's 3336 or Halt would provide protective disease control.
Liriope	Anthrachnose ( <i>Colletotrichum</i> )	Brown irregular blotches on leaf blades; often, leaf tip areas are involved.	Sanitation; See the AL Pest Management Handbook.
Loripetalum	Pythium Root Rot	Light brown, water-soaked, rotted roots.	Sanitation. Reduce irrigation or improve soil drainage.
Magnolia	Black Mildew	Black mold develops on lower leaf surfaces.	Reduce high humidity levels by increasing air circulation; pruning suggested.
Maple	Anthrachnose ( <i>Kabatiella</i> )	Brown spots and blotches on foliage; enlarged spots may involve more than half of individual leaves.	Sanitation. See the AL Pest Management Handbook.
	Phyllosticta Leaf Spot	Gray circular spots (¼ inch diam. Approx.) with dark brown or reddish brown borders.	Sanitation. See the AL Pest Management Handbook.
Maple, Red	Botryosphaeria Canker	Elongated, sunken, often cracked lesions.	Sanitation. Remove stress factors.
Marigold	Alternaria Leaf Spot	Small (0.2-0.3 cm diam.) dark brown-black spots. Numerous spots cause death of plants.	Sanitation. See the AL Pest Management Handbook.
	Phytophthora Crown Rot	Crowns become brown, decayed, water-soaked.	Sanitation. See the AL Pest Management Handbook.
	Pythium Crown Rot	Crowns become brown, decayed, water-soaked.	Sanitation. See the AL Pest Management Handbook.
	Rhizoctonia Crown Rot	Tissues become brown and dry rotted.	Sanitation. Banrot may be used as a protective treatment.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Millet	<i>Piricularia</i> Leaf Spot	Irregular, 3-6 mm diameter gray-brown leaf spots.	Crop rotation.
Mondograss	Anthrachnose	Light brown blotches, leaf spots on leaves; often spots have dark brown borders.	Cut foliage back. Cleary's 3336 will help.
Muscadine	Anthrachnose ( <i>Colletotrichum</i> )	Circular or angular, brown lesions on leaves or stems, which may coalesce. Centers of lesions may become gray-white. Lesion borders are dark purple-brown-black. Cracking may occur. Similar-looking lesions may occur on fruit. Fruit lesions extend into fruit pulp.	Sanitation. See AL Pest Management Handbook.
	Black Rot ( <i>Guignardia</i> )	Brown circular spots with dark brown borders on foliage and fruit. Spots may coalesce to involve large area of tissue.	See the AL Pest Management Handbook.
Mustard	<i>Cercospora</i> Leaf Spot	Irregularly-shaped brown leaf spots.	Sanitation.
Myrtle, Wax	<i>Botryosphaeria</i> Canker	Sunken, cracked lesions on stems.	Pruning 3-4 inches from edge of decay.
Nandina	Cucumber MosaicVirus	Plants show stunted new growth; some mosaic, leaf distortion, mottle and/or curling/puckering may be present.	Sanitation; aphid control may help a small amount.
Nectarine	Brown Rot	Brown, soft rot sometimes with gray spore masses.	Sanitation. See AL Pest Management Handbook under 'peach'.
	Phomopsis Canker	Brown, sunken, dry decay lesions on twigs and branches.	Sanitation. See AL Pest Management Handbook under 'peach'.
Oak	Bacterial Scorch ( <i>Xylella</i> )	Inner leaves first develop a leaf edge scorch. Gradually all foliage becomes scorched; dieback follows.	Removal of infected trees.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Hypoxylon Canker	Bark cracking and sloughing off; gray or black hard stroma layer develops under bark layer.	Sanitation.
	Oak Leaf Blister ( <i>Taphrina</i> )	Brown puckered spots.	Sanitation.
	Powdery Mildew ( <i>Microsphaera</i> )	White dusty coating on upper leaf surfaces. Some distortion of new leaves.	Collect and remove fallen leaves this fall.
Oak, Black	Hypoxylon Canker	Dark brown or gray, hard, flat, fungal bodies form under the bark; bark cracks and fall off.	Sanitation – pruning.
Oak, Pin	Xylella Scorch	Lower and oldest leaves show leaf edge scorch; problem progresses upward through the tree canopy. Dieback develops; eventual tree death.	Remove dying trees.
Oak, Red	Tubakia Leaf Spot	Round or irregular-round spots or blotches.	Sanitation of fallen leaves in the fall.
Oak, Sawtooth	Tubakia Leaf Spot (Formerly <i>Actinopelte</i> )	Circular, brown leaf spots may have tiny black specks scattered on leaf spot surface.	Sanitation of fallen leaves in fall.
Oak, Shumard	Hypoxylon Canker	Dark brown or gray, hard, flat, fungal bodies form under the bark; bark cracks and fall off.	Sanitation – pruning.
Pansy	Anthracnose ( <i>Colletotrichum</i> )	Small, round, light brown, cream-colored spots.	Sanitation. Cleary's 3336.
	Myrothecium Crown Rot	Dieback; decayed crowns.	Sanitation; See A. Hagan.
	<i>Phyllosticta</i> Leaf Spot	Relatively small (2-3 mm diam.) medium brown, roughly circular spots. Spot centers may become gray.	Sanitation. Protective sprays of Cleary's 3336, Domain, or a benomyl WP labeled for ornamentals.
	Phytophthora & Pythium Root Rot	Brown, wet-rotted roots.	Sanitation. See AL Pest Management Handbook.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Phytophthora Root Rot	Roots become brown and water-soaked.	Sanitation. See the AL Pest Management Handbook.
	Pythium Root Rot	Roots become brown and water-soaked.	Sanitation; See the AL Pest Management Handbook.
	Rhizoctonia Brown Rot	Lower stem develops a brown, dry rot.	Sanitation. Cleary's 3336 or chlorothalonil products.
	Thielaviopsis Root Rot	Roots become covered with black spots/lesions.	Sanitation; Cleary's, or Domain protective drenches.
Peanut	Cylindrocladium Black Rot	Lower stems develop a black rot decay.	See A. Hagan.
	Diplodia Collard Rot	Wilt; plant collapse and death; brown lesions with dark brown margins at lower stems/collar; roots become gray-black and shred.	See A. Hagan.
	Early Leaf Spot ( <i>Cercospora</i> )	Brown spots with halos develop on lower leaf surfaces; spore production usually on upper leaf surface.	Protective fungicide sprays. See Peanut Spray Guide and Timely Information PP-350 on Folicur.
	Late Leaf Spot ( <i>Cercosporidium</i> )	Brown to black spots, sometimes difficult to distinguish from early leaf spot unless spores are observed microscopically; spore production usually on lower leaf surface.	Protective fungicide sprays. See Peanut Spray Guide and PP-350.
	Lesion Nematode Pod Damage ( <i>Pratylenchus</i> )	Pods shriveled, sunken lesions.	See A. Hagan.
	Pepper Spot ( <i>Leptosphaerulina</i> )	Tiny, black spots scattered on upper leaf surfaces; another symptom is a brown wedge-shaped lesion at upper surface leaf tip area; a yellow halo is usually present.	See A. Hagan.
	Rust ( <i>Puccinia</i> )	Orange pustules on foliage.	See A. Hagan.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Peanut Mottle Virus	Plants stunted with regular green, light green color pattern.	See A. Hagan.
	<i>Rhizoctonia</i> Limb Rot	Oval to elliptical, brown spots develop on stems. Young spots may have a target ring pattern. Whole limbs or stems become blighted.	See AL Pest Management Handbook and PP-350; Careful water management.
	<i>Rhizoctonia</i> Pod Rot	Dull, light or dark brown, sunken lesions. Dark brown fungal threads (hyphae) may be seen on seed surface and inside wall of the shell.	See <i>Rhizoctonia</i> Limb Rot.
	Root-Knot Nematode ( <i>Meloidogyne</i> )	Plants are stunted and grow poorly; galls develop on roots.	Crop rotation. See Timely Information, Nematode Suppressive Crops, PP-341.
	Southern Blight (White Mold)	Soft decay spots on stems near the soil usually become covered with white mold that sometimes contains tiny black spherical fungal bodies.	See the AL Pest Management Handbook.
	Tomato Spotted Wilt Virus	Stunted plants; leaves show ring spot and mosaic patterns; new leaves small with abnormally shortened internodes.	Control thrips and weeds; Sanitation.
Pear, Apple	Bitter Rot ( <i>Colletotrichum</i> )	Brown, circular spots develop on the fruit surface. Orange dots of spore masses in a circular pattern develop on the surface of the discolored fruit skin. A brown rot extends through the fruit in a v-shaped area.	Sanitation. See AL Pest Management Handbook for fungicide sprays. Follow recommendations for Black Rot.
	Black Rot ( <i>Botryosphaeria obtuse</i> )	Brown, circular lesions (4-5 mm diam.) with purple borders on leaves; leaf yellowing and drop may occur; surface lesions on fruit show black-brown concentric rings which	Sanitation. See AL Pest Management Handbook for fungicide sprays.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
		remain firm. Branch cankers may be small, long (5 m), sunken and/or cracked, superficial or deep.	
Pear, Bradford	Alternaria Leaf Spot	Oval or round, brown leaf spots.	Sanitation of leaves in the fall. Protect T/O will help provide protective disease control.
	Fabraea Leaf Spot	Black circular spots (about 0.2-0.4 cm diam.)	Sanitation of fallen leaves in the fall. Regular spray schedule may help. See AL Pest Management Handbook.
Peas, Southern	<i>Fusarium</i> Wilt	Vascular tissues of lower stem are discolored reddish-brown.	Rotate peas out of the area for 10+ years.
	Mosaic Virus	Leaves show a yellow-green mosaic color pattern; sometimes green bands occur along the veins; plants are stunted.	Sanitation; control insects. Use resistant varieties such as Corona, Pinkeye Purplehull-BVR, Texas Pinkeye, Genegreen, Grant Blackeye or Royal Blackeye.
Pecan	Scab ( <i>Cladosporium</i> )	Small, circular, olive-green or black, slightly raised spots develop on leaves, petioles, and nut shuck tissue. Lesions may coalesce causing terminals to die.	See the Pecan Spray Guide; Sanitation.
	Zonate Leaf Spot ( <i>Cristulariella</i> )	On upper leaf surfaces, gray-brown concentric-ring spots (up to 2 cm diam.) appear. On lower leaf surfaces, spots are paler brown with dark brown borders.	Sanitation; protective fungicide sprays. See the Pecan Spray Guide.
Peony	Botrytis Leaf Spot	Irregularly-shaped brown-gray blotches.	Sanitation. Pruning to increase air circulation. Cleary's 3336, Halt.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Pepper	Bacterial Blight	Leaves develop dark brown angular spots which are often water-soaked along the edges. Leaf yellowing and drop often occurs on spotted leaves.	See AL Pest Management Handbook.
Pepper & Other Vegetables	Southern Blight ( <i>Sclerotium rolfsii</i> )	Initially a dark brown lesion forms on the stem just below the soil surface. Plants wilt and turn yellow. The lower stem rot may also become a root rot. Coarse white fungal threads develop at the soil line around the stem. Eventually small tan, spherical fungal mustard seeds develop around and in bodies (resembling the coarse white fungal threads).	Use Terraclor 75WP on pepper. See AL Pest Management Handbook.
Petunia	Myrothecium Crown Rot	Crowns become decayed, brown and soft.	Sanitation. Protective sprays of Daconil may be used.
	Phytophthora Aerial Blight	Stems & leaves develop brown, water-soaked decay.	Sanitation. Reducing water levels. See the AL Pest Management Handbook.
	Phytophthora Crown & Root Rot	Crowns & roots become decayed and water-soaked.	Sanitation. See the AL Pest Management Handbook.
	Pythium Crown Rot	Crown water-soaked and decayed.	Sanitation. Reduce water in the area. See the AL Pest Management Handbook.
Photinia	<i>Armillaria</i> Root Rot	Plant may decline slowly or suddenly; lower trunk under the bark and roots may be covered with closely appressed white fungal mat with black, threadlike structures.	Sanitation. See ANR-907.
	<i>Phytophthora</i> Root Rot	See Azalea.	--

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Pine, Virginia	Lophodermium ( <i>Ploioderma</i> ) Needle Cast	Older needles turn brown and drop; very small (1-2 mm or 1/32 inch) football shaped, black fruiting bodies develop on brown needles.	Protective fungicides spray. See AL Pest Management Handbook.
	Rhizosphaeria Needle Cast	Needles become gray-brown. Twig blight may develop.	Sanitation. See the AL Pest Management Handbook.
Pittosporum	Southern Blight ( <i>Sclerotium rolfsii</i> )	Lower trunk becomes rotted and softened. White mycelial mats and tiny black spherical bodies (sclerotia) may be present on trunk at soil surface.	Sanitation.
Plum	Black Knot ( <i>Plowrightia morbosum</i> )	Branches exhibit elongated black-surfaced, irregular galls that may involve a long (10 cm or more) distance of the branch.	Sanitation of galls. See AL Pest Management Handbook.
Poinsettia	Bacterial ( <i>Erwinia</i> ) Stem Rot	Black, water-soaked spots or lesions on stems. Lesions may girdle stems.	Sanitation; pot-level irrigation; See AL Pest Management Handbook.
	Pythium Root Rot	Roots become medium brown, soft, water-soaked and rotted.	See AL Pest Management Handbook.
	<i>Rhizoctonia</i> Stem Rot & Root Rot	Lower stems develops dry medium-dark brown surface lesions; roots may become brown and dried.	See AL Pest Management Handbook.
	<i>Rhizopus</i> Stem Rot	Stem sections become glassy and water-soaked; a delicate black mass of fungal threads and small black spherical structures may develop over the lesions.	Sanitation.
Pumpkin	Downy Mildew ( <i>Pseudoperonospora</i> )	Yellow spots/blotches develop on upper leaf surfaces; gray spots appear on corresponding areas of lower leaf areas. When temperature are cool-moderate and humid, a gray mycelium/spore layer will develop on lower leaf surface spots.	See the AL Pest Management Handbook.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Mosaic Virus	Leaves develop a yellow mosaic pattern on dark green background. New growth is stunted.	Sanitation. Control insects. Do not save seed.
	Plectosporium Blight	Cream-colored, raised, scabby lesions on stems, leaves, fruit, and peduncles.	Sanitation. Check with Ed Sikora.
	Root Knot Nematode ( <i>Meloidogyne</i> )	Plants become stunted. Roots are galled.	Sanitation. Solarization. See ANR-713.
Raspberry	Septoria Leaf Spot	See Blackberry, under leaf spot.	See Blackberry, under leaf spot.
Red Cedar	Phomopsis Tip Blight	Tips of twigs become yellowed and browned. Dieback may spread down the twig-branch. Lower foliage is affected first.	Sanitation. See the AL Pest Management Handbook.
Rhododendron	Cercospora Leaf Spot	Brown, round leaf spots.	Sanitation. Cleary's 3336 or Halt may be used for protective control.
	Phytophthora Root Rot	Dieback; roots become brown, water-soaked initially then dried, decayed.	Sanitation; correct excess water problem; see AL Pest Management Handbook under azalea.
	Rust ( <i>Puccinastrum</i> )	Golden brown spore pustules on lower surfaces of leaves is followed by leaf blight.	Remove hemlock from the area. Remove infected rhododendron plant parts. See the AL Pest Management Handbook.
Rose	Armillaria Root Rot	Roots become dry rotted. Honey-colored mushrooms may develop. A thin white mold may develop under the bark.	Sanitation. See ANR-907.
	Phytophthora Root Rot	Dieback; active infections are wet-rotted; old infections are dried.	Sanitation; reduce watering.
Rosemary	Phytophthora Root Rot	Roots become brown, decayed, water-soaked.	Sanitation. Reduce watering.
	Rhizoctonia Web Blight	Lower foliage becomes blighted.	Sanitation. Reduce watering.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Salvia	Pythium Root Rot	Foliage turns yellow, yellowing on lower foliage first; roots become light brown and rotted.	Sanitation. Reduce soil water levels.
	Rhizoctonia Crown Rot	Crowns become brown & dry-rotted.	Sanitation. Cleary's 3336 or Halt may be used.
Schip Laurel	Bacterial Leaf Spot ( <i>Xanthomonas</i> )	Angular brown spots with water-soaked margins; shot-holes develop.	Sanitation.
Scuppernong	Black Rot ( <i>Guignardia</i> )	Vines & fruit develop black decay/rot. Leaves develop brown, irregular spots with circles of small black specks.	Sanitation. See AL Pest Management Handbook under grapes.
Sequoia, Giant	Cercosporidium Needle Blight	Lower foliage become brown.	Pruning off dying branch areas. Cleary's 3336 or Halt may be applied.
Snapdragon	Cercospora Leaf Spot	Pale brown angular leaf spots of variable size.	Cleary's 3336, Domain, or a benomyl labeled for ornamentals.
Sorghum, Grain	Anthracnose {Red Rot} ( <i>Colletotrichum</i> )	Red spots and lesions on leaves and stalks. Heads may become infected, reddish and rotted.	Sanitation.
	<i>Fusarium</i> Head Blight	Entire seed head may rot and become covered by cream-pink fungal spore masses.	Sanitation.
	Gloeocercospora Blight (Zonate Leaf Spot)	Zonate spots on leaves; red-purple bands alternate with yellow bands.	Sanitation.
Soybean	Aerial Blight ( <i>Rhizoctonia</i> )	Small spots or large areas of leaves, stems, or pods may become brown and blighted; leaves may become tattered; leaf drop; disease favored by high humidity.	See Soybean Spray Guide.
	Anthracnose ( <i>Colletotrichum</i> )	Large, irregular, brown areas on stems, pods, petioles.	Deep plow.
	Asian Soybean Rust ( <i>Phakopsora pachyrhizi</i> )	Leaf spots, leaf yellowing, leaf drop, reduced yield.	See Ed Sikora.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Bean Pod Mottle Virus	Most noticeable as abnormally green stems at harvest time; leaf mottle, reduced yield and reduced seed quality possible.	See Ed Sikora.
	Brown Spot ( <i>Septoria</i> )	Irregular dark brown spots (1-4 mm diam.) on upper and lower leaf surfaces. Usually spots begin on lower leaves first.	See Soybean Spray Guide.
	Cercospora Leaf Spot	Leaf spots are circular, light brown with dark brown edges often called frog eye leaf spot.	---
	Charcoal Rot ( <i>Macrophomina</i> )	A light grey discoloration of tap root and lower stem. Inner stem tissues appear shredded and gray as if sprinkled with finely powdered charcoal. A disease of hot, dry conditions.	Rotation; proper fertilization.
	Pod and Stem Blight ( <i>Diaporthe, Phomopsis</i> )	Stems, petioles, pods, seeds become just slightly discolored. During wet, warm conditions, linearly arranged black dots (fruiting bodies) appear on infected tissues.	See Soybean Spray Guide.
	Root-Knot Nematode ( <i>Meloidogyne</i> )	Irregularly-shaped galls appear on roots. Plants grow poorly.	Rotation; Fumigation; See Soybean Spray Guide.
	Stem Canker ( <i>Diaporthe</i> )	Reddish brown, slightly sunken cankers that girdle stems and kill plants.	See the Soybean Control Recommendations ANR-413.
	Sudden Death Syndrome ( <i>Fusarium solani</i> )	Leaves become yellowed and then browned in interveinal areas; browned leaves fall from plants; the tap roots and often lateral roots become browned and decayed. Rotting may extend to the crown area at the soil line.	Sanitation and deep plowing of plant residue; rotation; call Ed Sikora if more information is needed.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Squash, Summer	Cercospora Leaf Spot	Irregular medium-brown spots (0.2-0.6 cm diam., usually).	See the AL Pest Management Handbook.
	Cucumber Mosaic Virus	Plants develop mosaic, stunting and abnormal shoestring leaves.	Sanitation. Aphid control may help a little.
	Papaya Ringspot Virus	Plants develop mosaic and stunting.	Sanitation. Aphid control may help a little.
	Watermelon Mosaic Virus II	Pronounced mosaics of green and yellow.	Sanitation. Aphid control may help a little. Virus may be transmitted mechanically. Control weeds. WMV is not seed transmitted.
	Zucchini Yellow Mosaic Virus	Foliage and fruit develops mosaic and may be stunted.	Sanitation. Aphid control may help a little.
St. Augustine	Brown Patch ( <i>Rhizoctonia</i> )	See Bermudagrass.	--
	Grey Leaf Spot ( <i>Piricularia</i> )	Small spots usually develop into large 4-8 mm diam.), brown or gray lesions with purple or brown borders. A yellow halo or general chlorosis may develop around spots. When severe entire foliage may turn gray-brown.	Collect clippings; See AL Pest Management Handbook.
	Take-All Patch ( <i>Gaeumannomyces</i> )	Spots/areas of turf become thinned and yellowed. Eventually plants die and the problem area becomes larger.	See Timely Information PP-312.
St. John's Wart	Pythium Root Decay	Roots are slightly brown, water-soaked, rotted; tissues pull apart easily.	Sanitation; correct excess water problem.
Strawberry	Anthrachnose ( <i>Colletotrichum</i> )	Lesions on stolons are brown-black, longitudinal and sunken. During high humidity cream-pink spore masses may form on lesions. Crown rot appears as reddish-brown firm rot or streaks of rot; plants wilt and die when crown rot is severe.	Protective fungicide sprays; Sanitation.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Cylindrocladium Petiole & Crown Rot	Petioles & lower stems become brown & dry rotted; lower foliage become yellowed and yellowing/dieback spread upward.	--
	Phomopsis Leaf Blight	Brown spots/blotches often associated with leaf edges.	See the AL Pest Management Handbook.
Sunflower	Alternaria Leaf Blight	Brown-gray oval spots and cankers.	Sanitation.
Sweet Potato	Fusarium Surface Rot on Roots	Lesions are circular, light-dark brown, firm, and dry; rot does not extend beyond vascular ring. In storage lesions eventually become shrunken, cracked; roots dry out.	Avoid wounding.
	Scurf ( <i>Monilochaetes</i> )	A brown patchy discoloration of root which usually begins as small, brown specks or spots. The discoloration is entirely superficial, but cracks will cause roots to dry out.	See AL Pest Management Handbook.
Thrift	Rhizoctonia Blight	Stem and leaf browning.	Sanitation; Cleary's 3336.
Tomato	Bacterial Leaf Spot ( <i>Xanthomonas</i> )	Dark, water-soaked, irregular and somewhat circular leaf spots (usually 1-3 mm diameter).	Sanitation. See the AL Pest Management Handbook.
	Bacterial (Pith Necrosis) Canker ( <i>Pseudomonas</i> )	Sunken, dark-colored, dried or water-soaked cankers appear on (usually) lower stems. When the stem is split lengthwise, the hollow stems show a network of cross tissue 'threads'. Adventitious root initials may develop on surface areas of cankers.	Sanitation. See AL Pest Management Handbook.
	Bacterial Wilt ( <i>Ralstonia</i> )	Plant wilt rapidly. Lower stem vascular system and surrounding tissues may	Sanitation. Crop rotation away from susceptible crops. See ANR-797.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
		be brown. Ooze is visible from cut lower stem suspended in water.	
	Cladosporium Leaf Mold	A dark gray surface mold develops on leaves in blotches areas.	Sanitation. See the AL Pest Management Handbook.
	Cucumber Mosaic Virus	Plants stunted with mosaic, leaf distortions.	Sanitation. Aphid control may help a small amount.
	Double Virus Streak (Combination of Tobacco Mosaic Virus and Potato Virus X)	Leaves first show a light green mottle followed by numerous small (2 mm) gray-brown spots; severely damaged leaves may die. Later, leaves become dwarfed, curled, yellowed with small brown spots. Narrow, dark brown streaks develop on petioles and stems. Shoot tips may die. Plants are stunted. Fruit set reduced; fruits develop greasy, brown lesions.	Sanitation.
	Late Blight ( <i>Phytophthora infestans</i> )	Dark brown-black blotches/spots on leaves/stem.	See the AL Pest Management Handbook.
	Phytophthora (Buckeye) Fruit Rot	Medium-brown, slightly sunken, zonate patterned with concentric rings, small to large spots develop on fruit. Brown discoloration may extend to fruit center.	Keep fruit away from the ground. See AL Pest Management Handbook.
	:Potato Virus Y	Plants stunted with some mosaic patterns, vein clearing.	Sanitation. Aphid control may help a small amount.
	Root Knot Nematode ( <i>Meloidogyne</i> )	Plants are stunted. Roots are galled.	Sanitation. Resistant varieties or solarization.
	Septoria Leaf Spot	Small gray circular-angular spots.	See the AL Pest Management Handbook.
	Tobacco Etch Virus	Plants stunted with some mosaic patterns, vein clearing, yellowing, sometimes necrotic rings.	Sanitation. Aphid control may help a small amount.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
	Tobacco Mosaic	Plants grow poorly. Leaves develop a mottle or mosaic of green and light green.	Remove damaged plants. Wash hands well before handling healthy plants.
	Tomato Spotted Wilt Virus	New growth stunted, leaves spotted and/or with ring spots; whole plant stunting and wilting; ringspots on fruit.	Sanitation. Thrips control will help in some situations.
Turnip	Black Rot ( <i>Xanthomonas</i> )	See Collards.	Sanitation; crop rotation; see AL Pest Management Handbook.
	<i>Cercospora</i> Leaf Spot	Irregular gray-brown leaf spots with whitish centers and brown margins.	See AL Pest Management Handbook.
Verbena	Anthracnose ( <i>Colletotrichum</i> )	Circular black spots on foliage.	Sanitation; Cleary's 3336.
	Pythium Lower Stem Rot	Brown water-soaked lesions.	Sanitation; reduce irrigation.
Vinca (Annual Periwinkle)	Anthracnose ( <i>Colletotrichum</i> )	Brown irregular areas, blotches develop on leaves and stems.	Sanitation. Protective sprays of Cleary's or Domain or a WP benomyl labeled on ornamentals may help.
	Phytophthora Stem Rot and/or Crown/Root Rot	Stems and/or lower stems near soil line and roots become browned and water-soaked.	Sanitation; improve soil drainage.
	Pythium Root Rot	Roots become brown decayed and water-soaked.	Sanitation. Reduce watering schedule. Rotate to different crop.
	Rhizoctonia Aerial Blight	Lower leaves become blighted; a thin mycelial webbing may develop.	Sanitation; Cleary's, Domain or a WP benomyl labeled on ornamentals may help.
Watercress	<i>Cercospora</i> Leaf Spot	Brown, circular-irregular leaf spots.	Sanitation.
	Pythium Stem & Root Rot	Stems and roots develop brown, water-soaked lesions.	Sanitation.

<u>Plant</u>	<u>Disease</u>	<u>Description</u>	<u>Control</u>
Watermelon	Fusarium Wilt	Plants show wilt & leaf yellowing beginning at base of plant.	Sanitation. Resistant varieties.
	Gummy Stem ( <i>Mycosphaerella</i> )	Leaves develop black spots at leaf edges. Stem develop oozing, gummy cankers.	See AL Pest Management Handbook.
	Papaya Ringspot Virus	Leaves develop a mosaic (yellow-green); stunting.	Sanitation. Control of aphids may help a small amount.
Wax Myrtle	Anthracnose ( <i>Colletotrichum</i> )	Brown, irregular spots, blotches develop on leaves.	Sanitation. If disease is severe, protective sprays of Cleary's 3336 or Domain or a WP benomyl may help.
	Gummy Stem Blight ( <i>Mycosphaerella</i> )	Black lesions/spots at leaf edges; elongate cracking on stem with amber-colored ooze.	See AL Pest Management Handbook.
Willow	Cercospora Leaf Spot	Irregularly shaped brown spots.	Sanitation of leaves in the fall.
Yaupon	Volutella Blight	Cankered, sunken stem areas, dieback, sometimes orange spore masses give the sunken areas and orange color.	Sanitation. Cleary's 336 or Halt protective sprays.
Zoysia	Brown Patch ( <i>Rhizoctonia</i> )	See Bermudagrass.	See the AL Pest Management Handbook.
	Dollar Spot ( <i>Sclerotinia</i> )	Small spots in lawn (silver-dollar sized) become a white-gray colored. Individual grass blades develop dark water-soaked irregular spots which become whitish-gray with dark borders.	See the AL Pest Management Handbook or ANR-493.

Plant

Disease

Description

Control

Rust (*Puccinia*)

Small (1-3 mm), yellow-orange-red flecks on grass blades; yellow-orange-red powder will wipe off on fingers. When severe, leaf blades will yellow and eventually die.

This is usually only a problem in shaded areas; fungicides may be applied when disease is severe; See the AL Pest Management Handbook or ANR-621.

Take-All Patch  
(*Gaeumannomyces*)

Individual plants yellow, wither, die; black lesions on roots and stolons.

Keep soil pH at 5.5-6.0; use only ammonium-based fertilizer; avoid frequent irrigation.

