

# TIMELY INFORMATION

## Agriculture & Natural Resources

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### **FEBRUARY PLANT DISEASES FROM THE AUBURN PLANT DIAGNOSTIC LAB**

### **FEBRUARY PLANT DISEASES FROM THE BIRMINGHAM PLANT DIAGNOSTIC LAB**

### **FEBRUARY INSECT REPORT FROM THE AUBURN PLANT DIAGNOSTIC LAB**

### **DISEASE POSSIBILITIES FOR MARCH**

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#### Auburn Plant Disease Report-February (J. Mullen)

February was seasonably cold. Some days were warm but the nights were cold. Our plant sample numbers were normal for February. We received 57 plant samples in February.

The most common disease problem of last month was Botryosphaeria canker. We saw this canker disease on blackberry, blueberry, Leyland cypress, peach, and rosemary. This fungus is known to be more active and aggressive on trees and shrubs previously weakened. Our dry conditions of last year would have caused stress to many landscape trees and shrubs. The only control practice for this fungal canker disease is pruning. Make cuts 3-4 inches beyond the edge of the canker. Dip shears into a 10% solution of household bleach or rubbing alcohol between cuts.

Table 1. February Plant Diseases Received at the Auburn Plant Diagnostic Lab.

<u>Plant</u>	<u>Disease</u>	<u>County</u>
Blackberry	Botryosphaeria Canker	Elmore
	Phomopsis Canker	Elmore
Blueberry	Botryosphaeria Canker	Elmore, Blount
	Phomopsis Canker	Elmore, Blount
Camellia	Anthracnose ( <i>Colletotrichum</i> )	**
	Pestalotia Secondary Leaf Spot	**
	Suspect Edema	*
Gardenia	Pestalotia Secondary Leaf Spot	*
Holly, Burford	Phytophthora Crown & Root Rot	Lee
Euonymus	Cercospora Leaf Spot	*
Jasmine, Asiatic	Pythium Root Rot	Houston
	Rhizoctonia Root Rot	Houston
Leyland Cypress	Botryosphaeria Canker	Dallas
Liriope	Anthracnose ( <i>Colletotrichum</i> )	*
	Secondary Fusarium Crown Rot	*
Magnolia	Algal Leaf Spot ( <i>Cephaleuros virescens</i> )	Lee
Norfolk Island Pine	Phytophthora Root Rot	Macon
Peach	Botryosphaeria Canker	*
	Phomopsis Canker	*
Rhododendron	Colletotrichum Leaf Spot	Limestone
	Pestalotia Secondary Leaf Spot	Limestone

<u>Plant</u>	<u>Disease</u>	<u>County</u>
Rose	Suspect Brand Canker ( <i>Coniothyrium wernsdorffiae</i> )	Chilton
Rosemary	Botryosphaeria Canker	Montgomery
Sweet Potato	Suspect Soil Rot (Pox) ( <i>Streptomyces ipomoea</i> )	Lamar
Tomato	<i>Fusarium oxysporum</i> Wilt	*
	Suspect Ethylene Damage	*
Wax Myrtle	Suspect Cercospora Leaf Spot	Baldwin

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

#### Birmingham Plant Disease Report-February (J. Jacobi)

We received 39 samples for the month of February. Pansy diseases were the most common problem last month, continuing the trend of the last few months. We discussed these problems in recent reports. For more information see the following web publication (<http://www.aces.edu/pubs/docs/A/ANR-1214/ANR-1214.pdf>).

Peat mold is not a plant pathogen, but often causes concern when growing on the surface of potting media. The fungus produces tan, orange or yellow spore masses on the surface of potting mix or at the edge of potting mix next to the pot rim. While the fungus is not a plant pathogen it can cause the potting media to become water repellent or hydrophobic; that is the media will not absorb water. Sanitation is the best defense against further problems.

Last month we had the chance to dig up and investigate why an 8-year old upright Chinese juniper suddenly died. When we excavated the root system we didn't find any evidence of root disease. Instead we found a large root that was girdling the stem below ground. We suspect that girdling root coupled with the drought of 2006-2008 caused the tree to die. Girdling roots are a common problem on landscape trees and shrubs causing poor growth, decline, root failure and secondary disease and insect problems. If caught early, stem girdling roots can be removed and future problems prevented. The problem is that because they are often occurring below the soil surface they go undetected until it's too late. For an excellent description of the problem and the latest research on prevention and treatment, see the following web page (<http://hort.ifas.ufl.edu/woody/rootcirclingpine.html>).

Table 2. 2008 February Problems Seen in the Birmingham Plant Diagnostic Lab.

<u>Plant</u>	<u>Problem</u>	<u>County</u>
Azalea	Azalea Bark Scale	Jefferson
Boxwood, Common	Phytophthora Root Rot	Jefferson
Cryptomeria	Pythium Root Rot	Jefferson
Geranium	Peat Mold ( <i>Chromelosporium</i> )	*
Juniper, Chinese	Root Girdling	Jefferson
Loblolly-Bay	Phyllosticta Leaf Spot	Jefferson
Pansy	Black Root Rot	Jefferson
	Botrytis Blight	Jefferson
	Pythium Root & Crown Rot	Jefferson(3)
Pachysandra, Japanese	Volutella Blight	Jefferson
Parsley	Aphids	Jefferson
Ryegrass, Perennial	Pythium Blight	Jefferson
Vining Spinach	Alternaria Leaf Spot	Jefferson

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

#### February Insect Report (C. Ray)

<b>County</b>	<b>Host</b>	<b>Category</b>	<b>Identification</b>	<b>Scientific Name</b>
Chambers	Tomato	Row Crops	Silverleaf Whitefly	<i>Bemisia tabaci</i> cmplx
St. Clair	Bamboo	Ornamental	Noxious Bamboo Mealybug	<i>Antonina pretiosa</i>
Montgomery	Camellia	Ornamental	Tea Scale	<i>Fiorinia theae</i>
Montgomery	Camellia	Ornamental	Tea Scale	<i>Fiorinia theae</i>
Chambers	Boxwood	Ornamental	Spider Mite Damage	
Montgomery	Azalea	Ornamental	Mite Damage	Probably Flat Mites

County	Host	Category	Identification	Scientific Name
Marion	Earthworms	Miscellaneous	Brown Earthworm Mites	<i>Uropoda</i> sp.
Marion		Miscellaneous	Funnel Web Spider, Male	<i>Agelenopsis</i> sp.
Calhoun	Home	Household- Miscellaneous	A Carpenter Ant	<i>Camponotus decipiens</i>
Jefferson	Wood Flooring	Household- Structural	Southern Lyctus Beetle	<i>Lyctus planicollis</i>
Houston	Home	Household- Stored Product	Pineapple Sap Beetle	<i>Urophorus humeralis</i>
Limestone	Azalea	Ornamental	Flat Mites	<i>Brevipalpus</i> sp.
Lee	Camellia	Ornamental	Camellia Scale & Tea Scale	<i>Lepidosaphes camelliae</i> & <i>Fiorinia theae</i>
Mobile	Euonymous	Ornamental	Black Bean Aphid	<i>Aphis fabae</i>
Mobile	Euonymous	Ornamental	Black Bean Aphid	<i>Aphis fabae</i>
Elmore	Citrus	Fruits & Nuts	Citrus Whitefly & Citrus Red Mite	<i>Dialeurodes citri</i> & <i>Panonychus citri</i>
Lowndes	Lawn	Turfgrass	A Crane Fly Larva	<i>Tipula</i> sp.
Chambers	Peach	Fruits & Nuts	White Peach Scale	<i>Pseudaulacaspis pentagona</i>
Escambia	Turnips	Row Crops	Yellowmargined Leaf Beetle	<i>Microtheca ochroloma</i>
Hale	Burford Holly	Ornamental	Tea Scale, Camellia Scale, Putnam Scale	<i>Fiorinia theae</i> , <i>Lepidosaphes camelliae</i> , <i>Diaspidiotus ancyclus</i>

Disease Possibilities For March

Virus symptoms on wheat and other small grains may be more evident in March. Barley yellow dwarf virus (BYDV), an aphid transmitted virus, causes oats to develop a red coloration which begins at leaf tips of older leaves and progresses down to the leaf base. In addition to the reddening symptom (which sometimes can be confused with cold damage or nutrient deficiency), infected plants become stunted with excessive tillering. The developing spikes may be white and sterile. With wheat, BYDV infection will often cause the older leaves to become a bright yellow color. Severe plant damage may be caused by this virus disease. Another virus to think about is soilborne wheat mosaic (SBWMV). Symptoms include a yellow mosaic pattern which appears as short, narrow yellow lines (dashes) on the otherwise green wheat leaves. Infected plants may become severely stunted. This virus is transmitted and maintained in the soil by the fungus *Polymxa graminis*, and disease occurrence appears to be more prevalent in low wet areas. Symptoms of SBWMV infection become diminished as temperatures warm up in the spring.

Other diseases often reported in early spring include Helminthosporium leaf spots on Bermuda and small grains; the beginning of powdery mildews, rusts, and/or Septoria leaf blotch on small grains; some downy mildews; Botrytis blight; and bacterial leaf spots on greenhouse crops.

The list below includes some common disease problems received in the lab during March and early April of the past few years. Comments on control practices are brief. Refer to the fact sheets, timely informations, spray guides, and the Alabama Pest Management Handbook for details.

Table 3. Disease Descriptions and Brief Control Comments on Some Common Diseases Seen in March.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
Alfalfa	Spring Black Stem and Leaf Spot ( <i>Phoma</i> )	Numerous black spots on lower leaves, petioles, and stems. Leaf spots often coalesce and become medium or light brown. Spotted leaves become yellow and fall. Stem and petiole lesions may completely girdle the area and cause death to the foliage beyond. Phoma may also cause a crown and root rot.	Early cutting; proper fertility management.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
	Stemphyllium Leaf Spot	Leaf spots are oval, sunken, dark brown with light brown centers, and usually surrounded by a yellow halo. Older spots may have concentric rings. This fungus may also cause black areas on stems.	Frequent harvesting.
	White Mold ( <i>Sclerotinia</i> )	Lower stems become yellow and limp. Eventually, dying stems and crowns become covered with a white fluffy mass of mycelium which may also spread out over the soil near the infected plants. Hard, black, slightly irregularly-shaped bodies (sclerotia).	Deep plow; 2-3 year rotation from forage legumes.
Apple, Pear	Fireblight ( <i>Erwinia</i> )	Flowers, pedicels, and leaves become black or dark brown and limp; canker development.	Sanitation; See AL Pest Management Handbook and ANR-542.
Aucuba	Pestalotia Leaf Spot	Usually light gray, irregular spots; often develops after earlier injury or cold damage.	Sanitation.
Azalea	Botryosphaeria Canker	Sunken cracked lesions on branches. Often this canker follows cold injury or some other type of wound. Stressed plants are often involved.	Sanitation.
	Botrytis Petal Blight	Large irregular areas of blossoms turn brown; brown areas are covered with a gray delicate webbing during	See AL Pest Management Handbook.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
		humid weather.	
	Cercospora Leaf Spot	Roughly circular-angular brown-black spots (about 0.5 cm diameter); spots are usually associated with stressed plants.	Sanitation of fallen leaves. Maintain proper fertility and watering schedules. Protective sprays of Cleary's 3336 may be applied.
	Colletotrichum Leaf Spot	Roughly circular brown-black leaf spots (about 0.5 cm diameter). Spots often associated with stressed plants.	See Cercospora Leaf Spot.
	Exobasidium Gall	Blossoms & leaves develop green-pink-white fleshy galls.	Sanitation; See AL Pest Management Handbook.
	Ovulinia Petal Blight	Small white-brown spots enlarge to become browned areas on the blossoms.	See AL Pest Management Handbook.
	Pestalotia Blight (Secondary)	Gray-white dried blotches on foliage, often along leaf edges.	Sanitation.
	Phomopsis Twig Blight	Usually small, elliptical sunken lesions on small branches/twigs.	Pruning. Improve vigor of plants.
	Phytophthora Crown & Root Rot	Crowns & roots become brown and water-soaked, then dried.	Sanitation; See AL Pest Management Handbook.
	Rhizoctonia Aerial Blight	Medium-dark brown spots or blotches on lower leaves may involve 50-100% of leaf area. Dead leaves will fall.	See AL Pest Management Handbook.
Begonia	Pythium Crown Rot, Root Rot	Lower stem and roots become a light brown color; tissues are rotted and water-soaked. Outer root cortex easily	Remove damaged plants. Replace root-associated soil. Reduce water levels in the soil area.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
		separates from inner central root stele tissues.	
Bentgrass	Basal Crown Rot ( <i>Colletotrichum</i> )	Crown (lower stem) at soil line shows a brown-black decay.	See the AL Pest Management Handbook.
	Pythium Blight	Irregular areas of turf become water-soaked and then pale brown.	See ANR-594.
	Ring Nematode Damage ( <i>Criconemoides</i> )	Areas display stunting, yellowing, and dieback.	See ANR-523.
	Yellow Patch ( <i>Rhizoctonia cerealis</i> )	Yellow areas or patches in lawn; crown & root decay.	See the AL Pest Management Handbook under Rhizoctonia Brown Patch.
Bermuda	Brown Patch ( <i>Rhizoctonia</i> )	Light brown, large, circular patches occur on lawns; grass blades show medium brown lesions and/or crowns show lesions and rot.	See AL Pest Management Handbook. See ANR-492.
	Helminthosporium Leaf Spot	Small elliptical or rectangular brown spots; when spots are numerous, leaf blight occurs.	See the AL Pest Management Handbook.
	Spring Dead Spot	Yellow patches develop in early spring.	See the AL Pest Management Handbook and ANR-371.
Blackberry	Algal Leaf Spot ( <i>Cephaleuros virescens</i> )	Initially, red-green or green, slightly raised oval spots on leaves and canes. Older spots become white.	Sanitation. See Ed Sikora.
	Anthracnose ( <i>Elsinoe</i> )	Sunken brown-cream colored lesions on canes and foliage.	Sanitation. Liquid Lime Sulfur just prior to bud break or later apply Benlate.
	Cane & Leaf Rust ( <i>Kuchneola uredinis</i> )	Yellow or yellow-orange spore masses (uredinia) split	Sanitation of infected foliage. See the AL Pest Management Handbook.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
		floricane bark in late spring. Small yellow or yellow-orange spore masses develop on floricane lower leaf surfaces in early summer. Defoliation may occur.	
	Orange Rust ( <i>Gymnoconia nitens</i> )	Young shoots, leaves are stunted, misshapen. Lower leaf surfaces become covered with bright orange powdery blisters. Infected leaves wither and drop.	Sanitation. Improve air circulation.
	Rosette ( <i>Cercospora</i> )	Plants develop an abnormal growth habit with abnormal rosetted shoots developing from vegetative buds. The rosetted or witches broom growths are pale green initially but become bronze later. Infected blossoms are larger than normal with twisted, bunchy petals.	See the AL Pest Management Handbook.
Blueberry	Botryosphaeria Canker	Sunken, elongated, cracked lesions.	Pruning.
Boxwood	Macrophoma Blight- Stress	During the winter, boxwood may change color and take-on a reddish tint. These discolored plants sometimes develop a more serious yellowing and blight with tiny black dots scattered on yellowed leaves; cankers may develop. This is generally a problem	Pruning; proper maintenance.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
		or stressed plants.	
	Phytophthora Root Rot	Roots become brown, decayed, water-soaked; the outer cortex easily pulls away from the inner tissues.	Sanitation. Check soil water relations and fertilizer levels. For chemical control, see the AL Pest Management Handbook.
	Pythium Root Decay	Small feeder roots decay when soil kept continually wet. Dieback.	Remove plants showing dieback. Reduce water levels in soil. Fungicide drenches may be used in nurseries. See AL Pest Management Handbook.
	Volutella Blight	Dieback from branch and twig cankers. Leaves also become blighted. Orange spores of the fungus develop in masses on twigs and leaves when conditions are humid.	Pruning and removal of fallen leaves. Maintain healthy plants. See the AL Pest Management Handbook for fungicides.
Camellia	Algal Leaf Spot ( <i>Cephaleuros</i> )	Green or green-red, slightly raised leaf spots with slightly wavy margins. Old spots have white centers.	See the AL Pest Management Handbook.
	Colletotrichum Leaf Spot	Round, light brown, circular spots which may contain brown-white-orange specks that are the spore bodies.	Sanitation. Cleary's 3336 protective sprays.
	Pestioleopsis Leaf Spot	Circular or irregular light brown spots; may be confused with Colletotrichum.	Sanitation.
	Ringspot Virus	Yellow or brown rings develop on leaves. Plants may be stunted.	Maintain plants with proper fertilization and water schedules.
Cedar, Red (Juniper)	Cedar Apple Rust ( <i>Gymnosporangium juniperae-virginianae</i> )	Large (1-3 inch diameter), woody galls on stems develop orange, jelly-like projections	Remove galls before orange "fingers" develop. Apply protective fungicide sprays to apple and crabapple. See AL Pest Management Handbook.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
		(one or more inches long) which protrude from the entire surface of the gall.	
	Pestalotia Tip Blight	Tips of twigs dieback.	Water & fertilizer to promote vigorous plants. Selective pruning.
Centipede	Brown Patch ( <i>Rhizoctonia</i> )	Light brown, large, circular patches occur on lawns; grass blades show medium brown lesions or crowns show lesions & rot.	See AL Pest Management Handbook. See ANR-492.
	Fairy Ring	Circles or arcs of dead grass may be associated with mushrooms.	See ANR-372.
	Lesion Nematode ( <i>Pratylenchus</i> sp.)	Areas become yellow, thinned with plant dieback.	See ANR-523.
Cherry	Black Knot	Hard, black, elongate galls on branches.	Pruning. See _____.
Cherry Laurel	Bacterial Leaf Spot ( <i>Xanthomonas</i> )	Medium to dark-brown circular or slightly irregular spots develop. As spots age, they dry and eventually the whole spot may fall out. Small, faint halos present sometimes.	Sanitation; basic copper sulfate may give protective control. See AL Pest Management Handbook.
	Blumeriella Leaf Spot	Circular, brown spots; may become shot holes.	Sanitation.
	Cercospora Leaf Spot	Light brown, circular-irregular spots, sometimes with dark brown border.	Sanitation. Cleary's 3336 or Halt protective sprays may be applied.
Chinese Fringe Tree	Armillaria Root Rot	Dieback; black thread-like fungal structures on or under bark near soil	See ANR-907 for comments.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
		line. White fans of mycelium may be present; honey colored mushrooms may develop.	
Clematis, Evergreen	Pythium Root Rot	Roots become rotted, light brown and water-soaked.	Remove damaged plants. Also remove root-associated soil. Reduce water levels in the soil.
Cleyera	Anthracnose ( <i>Colletotrichum</i> )	Reddish, circular-irregularly shaped spots, blotches (about 5 mm diam.) scattered on leaves.	Sanitation. Cleary's 3336 or Domain protective sprays.
	Cercospora Leaf Spot	Pale brown spots, often with dark brown edges	Sanitation. Cleary's 3336 or Halt may be applied as a protective spray treatment.
	Entomosporium Leaf Spot	Red-black, round-irregularly spots develop. Some spots coalesce.	Sanitation. Cleary's 3336 will help some.
Collard	Black Rot ( <i>Xanthomonas</i> )	Yellow-black V-shaped lesions on leaf edges; black leaf veins; black lower stems.	Sanitation; crop rotation.
Coleus	Botrytis Blight	Brown, irregular spots & blotches on foliage. A light gray mold develops when conditions are cool & humid.	Sanitation. Decrease humidity levels. Cleary's 3336 or Halt may be used as protective fungicide spray treatments.
Cryptomeria	Botryosphaeria Canker	Sunken lesions on branches sometimes cracking around the edges.	Pruning. Make cuts 3-4 inches beyond the margin of the lesions. Dip shears into alcohol between cuts.
Cyclamen	Fusarium Crown Rot	Lower stem tissues develop a dry decay.	Remove damaged plants. Do not plant cyclamen in this soil for many years. In a greenhouse, Cleary's 3336 or Banrot may be used as protective drenches.
Daffodil	Fusarium Bulb Rot	Leaves of bulb develop a dry rot.	Remove damaged bulbs and replace some soil in the area. Crop rotation for several years, if possible.
Daylily	Leaf Streak	Elongated yellow	Damaged foliage should be

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
	<i>(Aurobasidium)</i>	streaks develop on leaves. Eventually streaks become brown.	removed. Do not water overhead. Cleary's 3336 may be applied as protective sprays.
	Pythium Root Rot	Roots become rotted, light brown, and water-soaked.	Remove damaged plants. Also remove root-associated soil. Reduce water levels in the soil.
	Rhizoctonia Crown, Root & Tuber Rot	Dry, brown lesions and rot areas on crowns, roots, tubers.	Sanitation; See AL Pest Management Handbook.
	Rust ( <i>Puccinia hemerocallidis</i> )	Yellow small spots develop on leaves; eventually yellow spots may develop rusty spore masses; later leaves turn yellow and brown.	Sanitation. Select non rust susceptible cultivars. Protective fungicide sprays. See Timely Information PP-506. For homeowner, Immunox or Fertiloam System Fungicides may be used. For commercial growers, Banner Maxx, Heritage or Eagle may be used.
Dianthus	Alternaria Leaf Spot	Gray, brown, circular leaf spots.	Sanitation. Stature may be used.
	Cercospora Leaf Spot	Gray, brown, circular or irregular leaf spots.	Sanitation. Cleary's 3336 may help.
	Pythium Root Rot	Foliage dieback; roots become light brown and soft rotted.	Remove damaged plants. Reduce irrigation and/or improve drainage.
Dogwood	Botryosphaeria Canker	Sunken, elongated, cracked lesions.	Pruning.
Euonymus	Anthrachnose ( <i>Elsinoe</i> )	Brown circular-angular lesions on leaves.	Sanitation. See the Alabama Pest Management Handbook.
Fern	Anthrachnose ( <i>Colletotrichum</i> )	Brown, irregular spots on frond leaflets.	Sanitation. Cleary's 3336 or Halt may be applied as a protective spray.
Fescue, Tall	Net Blotch ( <i>Helminthosporium</i> )	Small, elongated, medium-brown or reddish-brown spots (1-2 mm or 1/16-1/8 inch long). Usually spots are abundantly scattered over leaf	See AL Pest Management Handbook or ANR-621.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
		blades.	
	Pythium Blight	Irregular areas of turf become water-soaked and then pale brown.	See the AL Pest Management Handbook.
	Striped Smut	Black, thin stripes of black smut spores along the leaf. Plants may be stunted with yellow streaking of leaves.	Sanitation; fungicide-treated seed; See A. Hagan.
Gardenia	Pestalotia Leaf Spot	Gray, brown leaf spots.	Remove damaged leaves and leaf debris. Leaf spot often secondary after cold damage.
	Phytophthora Crown & Root Rot	Dieback. Roots become brown, wet. And dead. Later roots dry out.	Sanitation. Reduce irrigation and improve drainage. See the AL Pest Management Handbook for nursery use of protective fungicide drenches.
	Pythium Crown & Root Rot	Dieback. Small feeder roots become slightly off color, light brown, and wet decayed.	Sanitation. Reduce irrigation and improve drainage. See the AL Pest Management Handbook for nursery use of protective fungicide drenches for Phytophthora.
Garlicvine ( <i>Cydista</i> )	Powdery Mildew ( <i>Oidium</i> )	White, powdery coating on leaves; some new growth distortions.	Sanitation. Improve air circulation.
Geranium	Bacterial Wilt ( <i>Ralstonia solanacearum</i> )	Initially lower leaves turn yellow; some leaf edge scorch; eventually plant wilts and dies.	Sanitation.
	Bacterial Blight ( <i>Xanthomonas campestris</i> pv. <i>pelargonii</i> )	Black, angular, water-soaked spots on leaves and stems; wilt; dieback.	Sanitation; See the AL Pest Management Handbook.
	Botrytis Blight	Brown leaf spots & blight of blossoms and leaves. Stem cankers may develop as brown stem lesions.	See AL Pest Management Handbook.
	Pythium Stem & Root	Lower stems become	See the AL Pest Management

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
	Rot	black and rotted; roots also become brown or black and decayed.	Handbook.
Gomphrena	Tomato Spotted Wilt Virus	New growth is stunted; dark brown/black leaf spots and upper leaf surface bronzing present.	Remove damaged plants. Control thrips.
Greenhouse Crops	Bacterial Leaf Spots	Small-large, irregular, dark, wet-looking spots which often become dry in their centers and may have yellow zones or borders at their outer edges.	Strict sanitation; eliminate overhead irrigation if possible; copper sprays help some. See AL Pest Management Handbook.
	Botrytis Blight	See Azalea.	See AL Pest Management Handbook. Decrease humidity.
	Downy Mildew	Diffuse yellow spots on upper leaf surfaces with corresponding areas on lower leaf surfaces showing darker color, often with tan-gray fungal growth.	See AL Pest Management Handbook for specific controls.
	Phytophthora Root Rot	Roots become, brown, decayed, water-soaked; the outer cortex easily pulls away from the inner tissues.	Sanitation. Check soil water relations and fertilizer levels. Chemical control depends on plant type.
Holly	Botryosphaeria Leaf Spot	Black, circular spots; cankers may develop.	Remove damaged and fallen leaves, if practical. Cleary's 3336 may be used to give protective disease control.
	Colletotrichum Leaf Spot Pestalotia (& Pestalotiopsis) Leaf Spot	Brown, circular, small spots. Gray, brown irregular blotches.	Sanitation. Cleary's 3336 may help. Sanitation.
	Stunt Nematode ( <i>Tylenchorhynchus</i> )	Plants are stunted; lower leaves may be	Sanitation; crop rotation. See ANR-689.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
		yellow; roots are stunted.	
Holly, Japanese	Black Root Rot ( <i>Thielaviopsis</i> )	Lower branch dieback that progresses upward in the plant; roots develop black tips and lesions.	Sanitation. Cleary's 3336 or Halt.
Holly, Savannah	Botrytis Leaf Blight	Small-large, irregular, gray or brown leaf spots/blotches.	Sanitation. Cleary's 3336.
Hosta	Pythium Crown Rot	Brown, wet, water-soaked decay at lower stem near the soil line.	Sanitation; improve soil drainage; rotate away from Hosta; Subdue 2E after test treatment.
Hydrangea, Oakleaf	Armillaria Root Rot	Dieback of foliage; rot of crown and roots; mushrooms, a white mycelial mat under the bark or on root surface or black thread-like rhizomorphs may develop on root surface or under crown bark. See ANR-907.	Sanitation.
Impatiens	Bacterial Leaf Edge Spots	Wet, water-soaked black spots on leaf edges.	Sanitation; water at ground level.
	Impatiens Necrotic Spot Virus	Black spots may develop on leaves; new growth is stunted.	Remove damaged plants; control thrips.
Indian Hawthorne	Cercospora Leaf Spot	Brown, irregular or roughly circular spots.	Sanitation; Cleary's 3336 or Halt could be used to provide protective treatment.
Iris, Bearded	Entomosporium Leaf Spot	Reddish spots with black centers.	Sanitation. Protective fungicide sprays.
	Heterosporium Leaf Spot	Brown, usually elliptical, sometimes large (1-2 cm) spots.	Sanitation. Protective sprays of Cleary's 3336.
Ivy, English	Anthracoese ( <i>Colletotrichum</i> sp.)	Circular-irregularly shaped brown, dry	Sanitation. See the AL Pest Management Handbook.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
		spots.	
Jerusalem Artichoke	Crown Gall ( <i>Agrobacterium tumefaciens</i> )	Hard, woody spherical gall develops at base of stem.	Removal and destruction of plant(s). Rotate area into crown gall resistant plant. See Disease Note ANR-944.
Juniper	Botryosphaeria Canker	Elongated, elliptical sunken, often cracked, brown lesions on stems.	Sanitation. Protective sprays of Cleary's 3336 or Halt.
	Cedar Apple Rust ( <i>Gymnosporangium juniperae-virginianae</i> )	Spherical woody galls develop on twigs and branches; with warm wet weather, orange, jelly-like projections or fingers extend from the galls.	Remove galls before they develop orange spore projections; See ANR-468.
	Cedar Quince Rust ( <i>Gymnosporangium claviceps</i> )	Junipers develop cankers with orange, wet, spore masses. Apples, hawthorns, cedars & quince develop yellow leaf spots & fruit develops orange spore tendrils.	See the AL Pest Management Handbook & ANR-468.
	Pestalotia Twig Cankers	Small, sunken, lesions on twigs. Dieback.	Remove stresses or other problems.
	Phytophthora Root Rot	Dieback. Roots become brown & wet rotted. Later roots dry out.	Sanitation. Reduce irrigation. Improve soil drainage. For nurseries, see the AL Pest Management Handbook.
	Pythium Root Rot	Dieback of small plants. Small feeder roots become slightly off color, light brown, and wet rotted.	Sanitation. Reduce irrigation. Improve soil drainage. For nurseries, see the AL Pest Management Handbook.
Kudzu	Asian Soybean Rust	Small yellow spots that may become brown to white when spores are present.	Sanitation.
Kumquat	Anthracoese	Leaf spots brown	Sanitation of all fallen leaves.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
		and sometimes zonate.	Water at soil level.
Lavender	Botrytis Blight	Brown leaf spots and foliage blight. Blossoms may also become spotted or blighted.	Remove damaged plant parts. Reduce humidity and water levels if possible.
Leucothoe	Cercospora Leaf Spot	Brown, round or irregular spots on leaves.	Sanitation. Cleary's 3336 could be used to provide protective treatment.
Leyland Cypress	Botryosphaeria Canker	Sunken lesions on branches; lesion edges may be cracked.	Sanitation.
	Cercospora (Cercospora) Blight	Blight usually starts on lower inner needles.	Pruning, sanitation, protective sprays of Cleary's 3336.
	Macrophoma, Pestalotia Needle Blight-Secondary	Brown needles with tiny black specks that are the spore bodies of these fungi. Usually occurs on stressed or weakened plants.	Sanitation.
	Macrophoma, Phomopsis Cankers, Maybe Secondary or Weak Pathogens	Small, sunken, brown lesions on twigs and small stems; black specks of spore bodies present on lesion surfaces sometimes.	Sanitation. Cleary's 3336 protective sprays.
	Phytophthora Root Rot	Tree dieback; roots develop dark color with a wet rot.	Tree removal; reduce irrigation and improve area drainage.
	Phomopsis Twig Canker	Sunken circular or elliptical brown lesions on twigs.	Sanitation; protective spray of Cleary's 3336.
	Seiridium Canker	Sunken lesions on twigs and branches; usually sap oozes around the cankers.	Sanitation. Maintain healthy trees. See the AL Pest Management Handbook under Phomopsis.
Ligustrum	Cercospora Leaf Spot	Brown circular or irregularly shaped leaf spots.	Sanitation. Improve air circulation. Apply Cleary's 3336 spray. See AL Pest Management Handbook.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
Lilac	Bacterial Leaf Spot	Black, angular, water-soaked spots.	Sanitation. See AL Pest Management Handbook.
	Pythium Root Rot	Roots are off-color, decayed, & water-soaked.	Sanitation; Improve soil drainage; crop rotation.
Lily, Asiatic	Pythium Root Rot	Foliage dieback; roots become light brown and soft rotted.	Sanitation; correct water problems.
Liriope	Anthrachnose ( <i>Colletotrichum</i> )	Reddish-brown leaf spots, especially at leaf tips.	Cut back foliage. See the AL Pest Management Handbook.
Loropetolum	Phytophthora Root Rot	Tree dieback; roots develop dark color with a wet rot.	Tree removal; reduce irrigation and improve drainage.
Lupin	Fusarium Seedling Disease	Seedlings typically collapse at the soil level, wither, and die.	Replant. Consult with Ed Sikora.
	Pythium Seedling Disease	Seedlings typically collapse at the soil level, wither, and die.	Replant. Consult with Ed Sikora.
Magnolia	Phyllosticta Leaf Spot	Small-large (0.5-1 cm) light brown usually circular spots.	See the AL Pest Management Handbook under 'Leaf Spot'.
Magnolia, Southern	Algal Leaf Spot ( <i>Cephaleuros</i> )	Green-reddish, slightly elevated, round or oval leaf spots.	Pruning to help reduce humidity; See the AL Pest Management Handbook.
Maple, Red	Botryosphaeria Canker	Dry, cracked, dark brown-black branch lesions.	Prune out cankers.
Million Belles	Pythium Root Rot	Roots become light brown and wet-rotted.	Remove damaged plants. Reduce soil water content. Some soil replacement in the landscape could be helpful.
Mondgrass	Anthrachnose ( <i>Colletotrichum</i> )	Brown or reddish-brown blotches on leaf blades. Often blotches are along leaf edges or tips.	See the AL Pest Management Handbook.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
Mountain Laurel	Anthracnose	Brown circular-irregular leaf spots.	Sanitation. Protective sprays of Cleary's 3336 or Halt may be used.
	Cercospora Leaf Spot	Brown, circular-irregular leaf spots.	Sanitation. Protective sprays of Cleary's 3336 or Halt may be used.
Nandina, Dwarf	Phytophthora Root Rot	Roots become water-soaked, brown and eventually dried. Foliage shows, dieback, wilt, poor growth.	Sanitation.
Oak	Botryosphaeria Canker	Lesions are usually sunken with cracked margins.	Pruning.
	Hypoxylon Canker	A thick, black, hard fungus layer develops just under bark.	Prune out cankers.
Oats	Barley Yellow Dwarf Virus	Older foliage becomes yellow-red in color; plants become stunted with excess tillering.	---
	Drechslera Leaf Spot	Small brown, elongated leaf spots. Sometimes spots may appear rectangular in shape.	--
	Halo Blight ( <i>Pseudomonas coronafeciens</i> )	Small, oval or oblong, light brown, wet-looking leaf spots with halos; if several spots, leaf dies.	--
Pachysandra	Volutella Blight	Brown, sunken, shriveled lesions on stems. Orange dots (fruiting bodies with spores) may be seen on surface of lesions.	Prune out damaged areas.
Palm	Fusarium Root Rot	Foliage dieback; roots develop a brown, dry rot.	Remove tree. Do not replant with palm.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
	Pestalotia Leaf Spot	Circular-irregular, brown leaf spots.	Sanitation. Eliminate stress problems.
Pansy	Phytophthora Crown Rot	Foliage wilt and dieback; lower stem becomes brown and soft rotted.	Sanitation. See ANR-1214.
Peach	Armillaria Trunk/Root Rot	Trees do not leaf out in the spring or they leaf out and dieback a few weeks later. Black thread-like structures +/- or white thin fungal mats may be present under the bark of trunk near soil line.	Sanitation of infected plants including roots.
	Black Knot ( <i>Plowrightia morbosum</i> )	Green or black elongated swellings along branches.	Sanitation. See the AL Pest Management Handbook.
	Botryosphaeria Canker, Gummosis	Usually oval-shaped sunken lesions with cracked edges and oozing of vascular gummy fluid.	Sanitation.
	Crown Gall ( <i>Agrobacterium tumefaciens</i> )	Irregular brown, woody swellings at the lower trunk or upper roots.	Sanitation. Crop rotation. See Ed Sikora.
	Leaf Curl ( <i>Taphrina</i> )	Leaves become thickened, puckered and sometimes reddish-green.	Sanitation; See the AL Pest Management Handbook.
	Phomopsis Twig Blight	Branches show wilt and dieback resulting from branch cankers; cankers are oval elliptical and sunken; wood discoloration is evident when outer bark is removed.	Sanitation. See Ed Sikora.
Pear	Entomosporium Leaf Spot	Small (1/8-1/4 inch) black spots on leaves.	Sanitation.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
Pear, Bradford	Botryosphaeria Canker	Sunken, elongated, cracked branch/twig lesions.	Pruning.
	Fireblight ( <i>Erwinia</i> )	Black-colored dieback, blossom blight, twig-tips may have a shepherd's crook.	Sanitation; See AL Pest Management Handbook.
	Phomopsis Canker	Sunken, elongated lesions.	Pruning; improve plant vigor.
Pecan	Crown Gall ( <i>Agrobacterium tumefaciens</i> )	Woody swellings (galls) on lower trunk usually near ground level.	Sanitation; remove tree, including roots, replace with a non-susceptible plant. See ANR-944 or <a href="http://www.aces.edu/pubs/docs/A/ANR-0944/ANR-0944">www.aces.edu/pubs/docs/A/ANR-0944/ANR-0944</a> .
Peony	Botrytis Blight	Brown-gray, irregular leaf spots & blotches.	Sanitation. See the AL Pest Management Handbook.
Periwinkle	Pythium Root Rot	Roots brown and water-soaked.	Sanitation. See AL Pest Management Handbook.
Petunia	Botrytis	Flowers, stems, and leaves may develop blight; a gray mold may develop.	Sanitation; See the AL Pest Management Handbook.
	Black Root Rot ( <i>Thielaviopsis basicola</i> )	Plants stunted; lower leaves may be yellow; roots have black spots, areas.	Sanitation. Protective drenches of Cleary's 3336 or Halt; crop rotation for 3-4 years.
	Fusarium Root Rot	Foliage dieback; roots develop a brown dry rot.	Remove plants. Do not replant with petunia.
	<i>Phytophthora parasitica</i> Crown Rot	Cankers and blight areas develop on foliage.	Sanitation. Daconil, Echo, Thalonil, and Aliette are labeled.
	Pythium Root Rot	See Periwinkle.	
Phlox (and Other Ornamentals)	Powdery Mildews	Buff or white powdery patches on leaves and stems; some distortion of new growth.	Sanitation. Cleary's 3336 may be used.
	Rhizoctonia Blight	Lower leaves become brown	Sanitation. Cleary's 3336 may be used.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
		blotched with whole leaves and stems sometimes affected.	
Photinia	Armillaria Root Rot	Decline of plant. Check the lower trunk or roots for a thin, white mycelial layer under the bark. Also look for honey-colored mushrooms.	Sanitation of plant and roots. Crop rotation. See ANR-907.
	Entomosporium Leaf Spot	Dark red spots (usually 3-4 mm or 1/8 inch diameter) on upper and lower leaf surfaces. Spots often coalesce.	Pruning; Fungicide treatment; See Circular ANR-392 or AL Pest Management Handbook.
Pine, Loblolly	Fusiforme Rust ( <i>Cronartium quercuum</i> f. <i>sp. fusiforme</i> )	Rusty, powdery coating appears on the surface of fusiform (elliptical-shaped) swellings on branches and trunks. (Near-by oaks will develop small black leaf spots in late spring).	Sanitation in landscape settings; protective fungicide sprays available for nursery situations. See the AL Pest Management Handbook.
	Needle Rust ( <i>Coleosporium</i> )	Cream-colored pustules (2-3 mm or 1/8 inch wide and high) develop along the edges of needles.	Sanitation.
Pine Seedlings, Long Leaf	Rhizoctonia Root Rot	Brown lesions, often shriveled, on roots.	Sanitation.
Pine, Virginia	Fusarium Pitch Canker	Sunken, elliptical lesions on branches and trunks covered with pine resin.	Sanitation.
	Needle Rust ( <i>Coleosporium</i> )	Cream-colored pustules (2-3 mm or 1/8 inch wide and high) develop along the edges of needles.	Sanitation.
	Rhizosphaeria Needle Cast ( <i>Coleosporium</i> )	Small brown spots on needles. Needles fall when disease severe.	Sanitation of fallen needles if possible. See the AL Pest Management Handbook for fungicides under "Needlecast and

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
			Other Needle Diseases”.
Plum	Black Knot ( <i>Plowrightia</i> )	In early spring, green swollen, elongated galls & cankers develop. As spring and summer progresses, galls become black.	Pruning; See ANR-1055 (Disease Note) for more information. In late sinter, apply a dormant spray of liquid lime sulfur. At green tip stage, apply Captan.
	Botryosphaeria Canker	Sunken, dried lesions on branches & twigs. Often lesions are cracked around the edges.	Pruning. Make cuts 3-4 inches beyond the lesion edge.
<i>Poa trivialis</i>	Pythium Blight	Irregular or circular areas become yellow and brown; dieback.	See the AL Pest Management Handbook; also see ANR-594.
Privet	Cercospora Leaf Spot	Large (¼-½ inch diameter), medium brown circular or irregular spots.	See AL Pest Management Handbook; Sanitation.
Privet, Japanese	Cercospora Leaf Spot	A light brown, irregularly shaped or oval shaped leaf spots.	Sanitation of fallen leaves. Cleary’s 3336 may be used.
Quince	Fireblight ( <i>Erwinia amylovora</i> )	Blossom blight followed by rapid dieback.	Severe pruning.
Red Cedar	Phomopsis Dieback	Tips of twigs are brown. The dieback will extend further down the twigs as time progresses; canker.	Sanitation; See AL Pest Management Handbook.
Rhododendron Azalea	Botryosphaeria Canker	Elongated, elliptical, sunken, brown cankers with margins that are often cracked.	Sanitation.
Rhododendron	Ascochyta Leaf Spot	Brown circular-irregular spots of varying sizes.	Sanitation.
	Cercospora Leaf Spot	Brown spots (5-10 mm or ¼-½ inch diameter) usually	Protective sprays of Cleary’s 3336 or Domain. Sanitation.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
		circular.	
	Pestalotia Leaf Spot	Gray-brown blotches on leaves, often develop on winter stressed or injured leaves.	Sanitation.
Rose	Black Spot ( <i>Diplocarpon rosa</i> )	Black, circular spots with feathery edges.	See ANR-505 &AL Pest Management Handbook.
	Brown Canker ( <i>Diaporthe umbrina</i> )	Elongated, brown, sunken lesions (cankers) on canes.	Sanitation - pruning. Apply protective fungicides labeled for black spot control.
	Coniothyrium Canker	A brown oval or roughly oval sunken lesion on rose canes. Microscopic exam usually required to distinguish this canker from some others.	Sanitation. Apply protective fungicides labeled for black spot control.
	Crown Gall ( <i>Agrobacterium tumefaciens</i> )	Soft green-white galls at or near the soil line become brown and hard. Plants show poor growth.	Sanitation. See ANR-505 and the AL Pest Management Handbook.
	Phytophthora Root Rot	Plants grow poorly; lower foliage may become yellow; wilt; plant death.	Sanitation. See ANR-505 and the AL Pest Management Handbook.
	Powdery Mildew ( <i>Sphaerotheca</i> spp.)	White powdery coating on leaves/ stems.	See ANR-407 & AL Pest Management Handbook.
Rose, Hybrid Tea	Nectria Canker	Sunken cane lesions with some callus production around lesion edges.	Sanitation. Protective fungicides labeled for black spot.
	Rust ( <i>Phragmidium</i> )	Yellow spots first develop; later orange, powdery spore masses cover leaf spots; eventually spots become brown and leaves fall.	Sanitation; Dithane, Fore, Protect, Eagle, Systhane may be used for protection.
Rosemary	Botrytis Blight	Brown-gray blight areas and leaf spots.	Sanitation. Reduce humidity.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
	Root Knot Nematode ( <i>Meloidogyne</i> sp.)	Plants are stunted with lower foliage becoming yellow. Roots develop irregular galls.	Sanitation. See ANR-689.
Ryegrass	Pythium Blight	Leaves develop large, brown, water-soaked spots/lesions.	See ANR-594 & the AL Pest Management Handbook.
Ryegrass, Perennial	Brown Patch ( <i>Rhizoctonia</i> )	Light brown, large, circular patches occur; grass blades and/or crowns show medium brown lesions and/or rot areas.	See the AL Pest Management Handbook.
Satsuma	Anthrachnose ( <i>Colletotrichum</i> sp.)	Brown circular leaf spots, sometimes zonate.	Sanitation. Improve air circulation.
Snapdragon	Anthrachnose	Small, brown, round leaf spots.	Sanitation. See AL Pest Management Handbook.
	Pythium Irregular Crown & Root Rot	Roots become light-brown and water-soaked. Foliage may become yellow (especially lower foliage) with wilt and dieback.	Remove damaged plants. Reduce water levels of soil. Replacement of some soil may be helpful. Improve soil drainage.
St. Augustinegrass	Brown Patch ( <i>Rhizoctonia solani</i> )	Light brown, large, circular patches occur on lawns; grass blades show medium brown lesions and/or crowns show lesions and rot.	See AL Pest Management Handbook. See ANR-492.
	Gray Leaf Spot ( <i>Piricularia</i> )	Gray, irregularly shaped spots on leaves.	See the AL Pest Management Handbook.
	Take-All Patch ( <i>Gaeumannomyces</i> )	Patch areas thin out with individual plants dying out.	Keep the soil pH about 5.5-6.0 and use ammonium (not nitrate) forms of nitrogen.
Strawberry	Anthrachnose Fruit Rot ( <i>Colletotrichum</i> )	Brown-black rotting develops on fruit.	See the AL Pest Management Handbook or Spray Guide Bulletin

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
		Spots initially are circular. Older spots may become orange due to spore production.	for Small Fruit.
	Bacterial Leaf Spot	Black, angular, water-soaked edged leaf spots.	Sanitation; do not water over-head; copper protective sprays. See the AL Pest Management Handbook.
	Botrytis Crown Rot	Foliage collapses.	Crown tissues become decayed and dry. A gray mold may develop on the tissue surfaces.
	Botrytis Fruit Rot	Gray-brown rotted area often covered with gray fluffy mycelium.	Sanitation. See AL Pest Management Handbook or Spray Guide Bulletin for Small Fruit.
	Mycosphaerella Leaf Spot	Symptoms vary with temperature and strawberry species. In many situations, leaf spots appear as small, circular spots (2-3 mm or 1/8 inch diameter) with light centers and purple margins. Numerous spots may coalesce and cause total leaf death. On some cultivars, spots become very large, involving a good portion of the leaf area.	See AL Pest Management Handbook or the Spray Guide Bulletin for Small Fruit.
	Phytophthora Crown & Petiole Rot	Reddish discoloration of inner crown section of plant. Petioles become brown and decayed.	Sanitation. Reduce irrigation and/or improve soil drainage. See AL Pest Management Handbook.
Sweet Potato	Black Rot ( <i>Ceratocystis fimbriata</i> )	Black, firm rot on root surface does not extend beyond the vascular system, about 1/8 inch.	Sanitation. See AL Pest Management Handbook for a commercial crop.
	Fusarium Crown Rot	Lower stems develop a reddish-	Long crop rotations (10 years or more) away from sweet potatoes.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
		brown decay.	
Thrift ( <i>Phlox subulata</i> )	Anthracnose ( <i>Colletotrichum</i> )	Brown or reddish-brown spots, blotches (1-3 mm diameter) develop. Spot coalescence.	Sanitation; protective sprays of Cleary's 3336 or Domain may help.
Tomato	Bacterial Leaf Spot & Fruit Spot ( <i>Xanthomonas axonopodis</i> )	Black, circular, water-soaked spots.	See ANR-71 and the AL Pest Management Handbook.
	Early Blight ( <i>Alternaria</i> )	Brown-dark gray, sometimes zonate, usually oval leaf spots and cankers develop, beginning in the lower foliage. Girdling stem cankers result in dieback.	Sanitation. See the AL Pest Management Handbook and ANR-71.
	Late Blight ( <i>Phytophthora infestans</i> )	Brown, wet-looking blight, spots, and cankers develop dieback.	Sanitation; protective fungicides. See AL Pest Management Handbook; crop rotation.
	Pythium Root Rot	Roots slightly discolored, water-soaked.	Sanitation. See AL Pest Management Handbook.
	Rhizoctonia Crown Rot	The stem (crown) at the soil-line becomes brown, dried, and rotted.	Crop rotation; possibly soil solarization.
	Septoria Leaf Spot	Gray circular leaf spots; leaf spots may coalesce.	Sanitation. See AL Pest Management Handbook.
Torenia	Pythium Blight	Roots become light brown and show a wet rot. Foliage wilts and shows dieback. Lower foliage may become yellow, then wilt with dieback.	Remove damaged plants. Reduce water levels of soil. Replacement of some soil may be helpful. Improve soil drainage.
Tulip	Blue Mold ( <i>Penicillium</i> )	Bulbs develop a blue colored powdery mold and bulb rot.	Sanitation.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
Tulip	Fusarium and Penicillium Bulb Rots	Bulbs develop sunken brown-gray dried lesions. Penicillium sporulation may occur as blue-gray-mold on the surface of the sunken rotted area.	Sanitation. Bulb dips. See the AL Pest Management Handbook.
Turnip	Cercospora Leaf Spot	Brown or tan or cream-colored irregular spots (.2-1 cm diameter) develop on foliage.	Sanitation; See the AL Pest Management Handbook or Spray Guide Bulletin for Vegetables.
Verbena	Fusarium Root Rot	Plants become stunted; lower leaves may become yellow; roots become dry and brown decayed.	Sanitation. Long crop rotation.
	Pythium Root Rot	Plants become stunted; lower leaves may become yellow; roots become water-soaked and slightly discolored to a light brown. Roots pull apart easily.	Sanitation. Long crop rotation.
Viburnum	Botryosphaeria Canker	Elongated, sunken lesions with cracked edges develop on branches.	Prune out the cankers. Make cuts 3-4 inches beyond the damage edge.
Vinca, Annual	Rhizoctonia Stem Rot	Dark brown, dried, sunken lesion(s) on stems. Dieback of affected stems.	Sanitation; remove damaged plants; Chipco 26019, Cleary's 3336, or Domain protective sprays; See AL Pest Management Handbook.
Wax Myrtle	Anthrachnose	Circular-irregular brown leaf spots.	Sanitation; Cleary's 3336 or Halt if desired as protective treatment.
	Botryosphaeria Canker	Dark, cracked, slightly sunken lesions on branches. Often follows cold injury.	Pruning.
	Septoria Leaf Spot	Circular to angular brown leaf spots.	Sanitation.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
Wheat	Bacterial Blight (Black Chaff) ( <i>Xanthomonas</i> )	Early in the season blackish elongated lesions may develop on foliage. Later, glumes will become spotted with brown-black lesions which may be confused with Septoria glume blotch.	No control except to deep plow or crop rotation.
	Barley Yellow Dwarf Virus	Yellowing and reddening of older leaves; excessive tillering; stunting.	No control except to control aphids, if possible.
	Leaf Rust ( <i>Puccinia</i> )	Orange-red dots and patches of spore masses on leaves.	See AL Spray Guide.
	Powdery Mildew ( <i>Erysiphe</i> )	Gray-white or buff colored powdery blotches usually on leaf blades.	See AL Spray Guide.
	Septoria Blotch	Yellow flecks on lower leaves enlarge into irregular, elongated lesions (1-5 x 4-15 mm or 1/16-1/8 x 1/8-1/2 inches) that become brownish with some spots developing gray centers.	Generally no control needed.
	Tan Spot ( <i>Drechslera tritici-repentis</i> )	Light brown, elliptical spots develop on leaves; spots may be 1 cm long and may have yellow border.	--
	Take-all ( <i>Gaeumannomyces</i> )	Lower stem and roots at the soil line become blackened and decayed.	Crop rotation to oats, corn, or legumes for 1 year.
	Wheat Soilborne Mosaic Virus	Older leaves show a yellow-green mosaic of short, thin, yellow lesions (usually about 1/8 inch long). Plants become	Crop rotation.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
		stunted.	
Zinnia	Botrytis Canker	Brown, dry, sunken lesions; a gray, thin, mold may develop on the surface when conditions humid and in 70s.	Sanitation. See the AL Pest Management Handbook.
Zoysia	Brown Patch ( <i>Rhizoctonia</i> ) (Large Patch)	Small or large circular brown patches on lawn; grass blades show medium brown lesions or crowns show lesions and rot.	See ANR-492; see AL Pest Management Handbook.
	Fairy Ring	Rings of brown turf in grass. Mushrooms sometimes present in spring and/or fall.	See ANR-372.
	Ring Nematode ( <i>Criconeoides</i> )	Stunted, yellowed plants; dieback.	See ANR-523.
	Take-All Patch ( <i>Gaeumannomyces graminis</i> pv <i>graminis</i> )	Patch areas thin. Individual plants in a patch die.	See ANR-823.