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PP-523

FEBRUARY PLANT DISEASES FROM THE AUBURN PLANT DIAGNOSTIC LAB

FEBRUARY PLANT DISEASES FROM THE BIRMINGHAM PLANT DIAGNOSTIC LAB

DISEASE POSSIBILITIES FOR MARCH

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Auburn Plant Disease Report-February (J. Mullen)

February was unusually warm and many saucer magnolia and even some azaleas in the Auburn area had blossoms developing and opening during the second and third week of the month. The unusually warm weather in February resulted in a larger number of plant samples for diagnosis than usual. Most of the 36 samples received were from landscape situations. The freezing night temperatures of the past two weeks have definitely slowed down spring-like landscape developments. Cold damage on many landscape plantings will be evident as tip scorching of new growth. Also, we expect branch and trunk cracking from cold injury to start to show up in April-June. Dieback will result from these injuries. Also, we may see more fireblight on apples, pears, and other related plants this spring since fireblight development in cold-injured areas often occurs. Small grain crops may also develop problems resulting from cold injury to the meristematic tissues.

In February we started to see some anthracnose (*Colletotrichum*) leaf spots on azalea, Asiatic Jasmine and lirioppe, due to the warm weather. Spotting was usually as small brown, round spots. Fungal spores were not present; fungus identification was made on the basis of fungal growth with spore production in cultures.

Pestalotia leaf spots were present on gardenia as gray, blotchy, irregular spots. These spots often develop on landscape shrubs early in the spring when leaves are stressed and sometimes injured by cold.

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

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Pythium root rot was identified on azalea, gardenia, holly, and Asiatic jasmine. Pythium as a disease agent of woody ornamentals is questionable. Pythium is known to cause root decay of feeder roots of woody ornamentals (often young plants) when the plants are weakened and wet soil conditions have been present for a period of time. In a landscape, disease control (or management) typically involves removal of the dying plant and improvement in soil drainage in the area. Some soil replacement may be helpful as Pythium spores may remain active in the area for a few years, depending upon environmental conditions. Pythium is not considered to be the serious problem to woody ornamentals that the Phytophthora fungus is. Pythium is a serious problem on herbaceous plants in the landscape or greenhouse. Protective fungicides drenches are recommended to help control Pythium (or Phytophthora) in greenhouse and nursery situations. Also, water problems must be corrected.

Brown patch was active on St. Augustine and centipede grass samples from the Mobile area. When weather warms up, three-four applications of a protective fungicide (See AL Pest Management Handbook) will be needed to control this problem.

Also, one sample of St. Augustine grass from Mobile was received with active growth of the take-all patch fungus. This is normally a warm-weather disease problem, but warm weather had been present for much of February. See ANR-823. Try to avoid stress conditions as much as possible.

We saw a sample of wheat which may have been cold damage or early stages of barley yellow dwarf virus (BYDV). Plants were severely stunted and reddish colored with the abnormal red coloration beginning at leaf tips. Previous studies have shown that ELISA testing is not reliable on such small plants so we did not test the plants. Small grains infected with BYDV usually show discoloration (yellow or reddish coloration beginning at leaf tips), stunting, and excessive tillering. Aphids transmit the virus.

Burr knots are adventitious (aerial) knots or clumpings of root initials that may develop on some apple root stocks. Burr knots are not infectious and will not spread from one plant to another. They do not directly cause damage to the apple, but they are abnormal in appearance. Secondary disease agents may occasionally develop in burr knots. The only control recommendation is to use a root stalk that is not prone to form these growths.

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

<u>Plant</u>	<u>Disease</u>	<u>County</u>
Apple	Burr Knots	*
Azalea	Colletotrichum Leaf Spot	Cullman, Talladega
	Pythium Root Rot	Pike

<u>Plant</u>	<u>Disease</u>	<u>County</u>
Centipede	Brown Patch (<i>Rhizoctonia</i>)	Mobile
Gardenia	Pestalotia Leaf Spot	Talladega
	Pythium Root Rot	Coffee
Holly	Pythium Root Rot	Madison
Jasmine, Asiatic	Colletotrichum Leaf Spot	Houston
	Pythium Root Rot	Houston
Liriope	Anthracnose (<i>Colletotrichum</i>)	Cullman
Pear, Bradford	Botryosphaeria Canker	Coosa
Plum	Black Knot (<i>Plowrightia</i>)	Pike
St. Augustine	Brown Patch (<i>Rhizoctonia</i>)	Mobile
	Take-All Patch (<i>Gaeumannomyces graminis</i> pv. <i>graminis</i>)	Mobile
Wheat	Possible Barley Yellow Dwarf Virus	

*Counties are not reported for greenhouse and nursery samples.

Birmingham Plant Disease Report-February (J. Jacobi)

The lab received 33 samples for the month of February. Some of the problems seen last month included Phytophthora root rot on azalea and shore juniper, eriophyid or rust mites of white pine, and black knot on plum (*Prunus domestica*).

Black knot, caused by the fungal pathogen *Dibotryon morbosum* (also called *Plowrightia morbosum*), is a common disease of plum and cherry trees (*Prunus* species). The fungus attacks twigs and branches forming black, hard, knots or gall-like swellings. This disease is common on wild black cherry (*Prunus serotinia*) in forests and other natural areas. The knots on the branches slow the flow of water and nutrients causing stunting and dieback of branches. The disease becomes progressively worse during each growing season and if left uncontrolled, the tree can weaken and die. Control of black knot can be achieved by a combination of cultural and chemical control measures. First, prune out knots at least six inches below signs of disease in late winter before outbreak. Second, when establishing new plantings, choose resistant varieties. Japanese varieties of plums are generally less susceptible than most American varieties. Third, the application of fungicides can protect new twig growth from disease, but should be used in conjunction with cultural practices. For the most current fungicide recommendations and spray schedules, refer to extension publication ANR-1055, Black Knot on Plum and Cherry Trees (www.aces.edu/dept/extcomm/publications/anr/anr-1055/anr-1055.htm). Follow all of the manufacturer's label directions and precautions when using any pesticide.

Table 2. 2002 February Problems Seen In The Birmingham Plant Diagnostic Lab.

<u>Plant</u>	<u>Disease</u>	<u>County</u>
Azalea	Phytophthora Root Rot	Jefferson
Boxwood	Leaf Miner	Jefferson(2)
	Volutella Blight	Jefferson
Camellia	Tea Scale	Jefferson
Cleyera	Wax Scale	Jefferson
Ivy, English	Anthracnose (<i>Colletotrichum</i> sp.)	Jefferson
Juniper, Shore »Blue Pacific«	Phytophthora Root Rot	Jefferson
Pansy	Pythium Root & Crown Rot	Jefferson
Pine, White »Pendula«	Eriophyid Mites, White Pine Aphids	Jefferson
Plum	Black Knot (<i>Dibotryon morbosum</i>)	Jefferson
Rose	Winter Injury	Jefferson
Zoysiagrass	White Grubs (<i>Phyllophaga</i> sp.)	Jefferson

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, and 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 BYDV. 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 beginnings 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, 2000 or 2001 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. <i>Phoma</i> 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) about 1-2 mm or 1/16-1/8 inch may develop on and in the dying stems and crowns.	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, see ANR-542.
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.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
	Botrytis Petal Blight	Large irregular areas of blossoms turn brown; brown areas are covered with a gray delicate webbing during humid weather.	See AL Pest Management Handbook.
	Cercospora Leaf Spot	Roughly circular-angular brown-black spots (about 0.5 cm diam.); 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 diam.). 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 large browned areas on the blossoms.	See AL Pest Management Handbook.
	Pestalotia Blight (Secondary)	Gray-white dried blotches on foliage, often along leaf edges.	Sanitation.
	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.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
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 separates from inner central root stele tissues.	Remove damaged plants. Replace root-associated soil. Reduce water levels in the soil area.
Bentgrass	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.
Blackberry	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.
	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.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
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 of stressed plants.	Pruning; proper maintenance.
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.
	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</i>)	Large (1-3 inch diameter), woody galls on stems develop orange, jelly-like projections (one or more inches long) which protrude from the entire surface of the gall.	Remove galls before orange "fingers" develop. Apply protective fungicide sprays to apple and crabapple. See AL Pest Management Handbook.
	Pestalotia Tip Blight	Tips of twigs dieback.	Water & fertilize to promote vigorous plants. Selective pruning.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
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 sp.</i>)	Areas become yellow, thinned with plant dieback.	See ANR-523.
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.
	Cercospora Leaf Spot	Irregular brown spots of variable size.	Sanitation of leaves in the fall.
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	Anthrachnose (<i>Colletotrichum</i>)	Reddish circular-irregularly shaped spots, blotches (about 5 mm diam.) scattered on leaves.	Sanitation. Cleary's 3336 or Domain protective sprays.
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.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
Daylily	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.
Euonymus	Anthrachnose (<i>Elsinoe</i>)	Brown circular-angular lesions on leaves.	Sanitation. See the Alabama Pest Management Handbook.
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 blades.	See AL Pest Management Handbook or ANR-621.
	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.
Garlicvine (<i>Cydista</i>)	Powdery Mildew (<i>Oidium</i>)	White, powdery coating on leaves; some new growth distortions.	Sanitation. Improve air circulation.
Geranium	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.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
	Pythium Stem & Root Rot	Lower stems become black and rotted; roots also become brown or black and decayed.	See the AL Pest Management 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 Spot	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 Mildews	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.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
	Colletotrichum Leaf Spot	Brown, circular, small spots.	Sanitation. Cleary's 3336 may help.
	Pestalotia Leaf Spot	Gray, brown irregular blotches.	Sanitation.
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.
Indian Hawthorne	Entomosporium Leaf Spot	Reddish spots with black centers.	Sanitation. Protective fungicide sprays.
Iris, Bearded	Heterosporium Leaf Spot	Brown, usually elliptical, sometimes large (1-2 cm) spots.	Sanitation. Protective sprays of Cleary's 3336.
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	Cedar Apple Rust (<i>Gymnosporangium 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.
Kumquat	Anthracoze	Leaf spots brown and sometimes zonate.	Sanitation of all fallen leaves. 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.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
Leyland Cypress	Phomopsis Canker Twig	Sunken circular or elliptical brown lesions on twigs.	Sanitation; protective spray of Cleary's 3336.
	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.
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.
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.
Magnolia	Phyllosticta Leaf Spot	Small-large (0.5-1 cm) light brown usually circular spots.	See the AL Pest Management Handbook under 'Leaf Spot'.
Maple, Red	Botryosphaeria Canker	Dry, cracked, dark brown-black branch lesions.	Prune out cankers.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
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.
Mondograss	Anthracnose (<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.
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.	--
Pachysandra	Volutella Blight	Brown, sunken, shrivelled lesions on stems. Orange dots (fruiting bodies with spores) may be seen on surface of lesions.	Prune out damaged areas.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
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	Green or black elongated swellings along branches.	Sanitation. See the AL Pest Management Handbook.
	Crown Gall	Irregular brown, woody swellings at the lower trunk or upper roots.	Sanitation. Crop rotation. See Ed Sikora.
	Botryosphaeria Canker, Gummosis	Usually oval-shaped sunken lesions with cracked edges and oozing of vascular gummy fluid.	Sanitation.
	Leaf Curl (<i>Taphrina</i>)	Leaves become thickened, puckered and sometimes reddish-green.	Sanitation; See the Ala. Pest Management Handbook.
	Phomopsis Twig Blight	Branches show wilt and dieback resulting from branch cankers; cankers are oval or elliptical and sunken; wood discoloration is evident when outer bark is removed.	Sanitation. See Ed Sikora.
Pear	Entomosporium Leaf Spot	Small (C-3 inch) black spots on leaves.	Sanitation.
Pear, Bradford	Fireblight (<i>Erwinia</i>)	Black-colored dieback, blossom blight, twig-tips may have a shepherd's crook.	Sanitation; See AL Pest Management Handbook.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
Periwinkle	Pythium Root Rot	Roots brown and water-soaked.	Sanitation. See AL Pest Management Handbook.
Petunia	<i>Phytophthora parasitica</i> Crown Rot	Cankers and blight areas develop on foliage.	Sanitation. Daconil, Echo, Thalonil, and Aliette are labelled.
	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 blotched with whole leaves and stems sometimes affected.	Sanitation. Cleary's 3336 may be used.
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 $\frac{1}{2}$ inch diam.) on upper and lower leaf surfaces. Spots often coalesce.	Pruning; Fungicide treatment; See Cir. ANR-392 or AL Pest Management Handbook.
Pine, Loblolly	Fusiforme Rust (<i>Cronartium quercuum f. 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.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
	Needle Rust (<i>Coleosporium</i>)	Cream-colored pustules (2-3 mm or 1/8 inch wide and high) develop along the edges of needles.	---
Pine Seedlings, Long Leaf	Rhizoctonia Root Rot	Brown lesions, often shrivelled, 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.	--
Privet	Cercospora Leaf Spot	Large (3-2 inch diam.), medium brown circular or irregular spots.	See AL Pest Management Handbook; Sanitation.
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 twig 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	Cercospora Leaf Spot	Brown spots (5-10 mm or 3/8-2 inch diam.) usually circular.	Protective sprays of Cleary's 3336 or Domain. Sanitation.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
	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.
	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 labelled for black spot control.
	Powdery Mildew (<i>Sphaerotheca spp.</i>)	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 labelled for black spot.
Rosemary	Botrytis Blight	Brown-gray blight areas and leaf spots.	Sanitation. Reduce humidity.
Ryegrass	Pythium Blight	Leaves develop large, brown, water-soaked spots/lesions.	See ANR-594 & the AL Pest Management Handbook.
Satsuma	Anthracnose (<i>Colletotrichum sp.</i>)	Brown circular leaf spots, sometimes zonate.	Sanitation. Improve air circulation.
Snapdragon	Anthracnose	Small, brown, round leaf spots.	Sanitation. See AL Pest Management Handbook.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
	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	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	Anthracnose Fruit Rot (<i>Colletotrichum</i>)	Brown-black rotting develops on fruit. Spots initially are circular. Older spots may become orange due to spore production.	See the AL Pest Management Handbook or Spray Guide Bulletin for Small Fruit.
	Botrytis Fruit Rot	Gray-brown rotted areas 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 $\frac{1}{8}$ inch diam.) 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.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
	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>Ceratocystic 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.
Thrift (<i>Phlox subulatus</i>)	Anthracnose (<i>Colletotrichum</i>)	Brown or reddish-brown spots, blotches (1-3 mm diam.) develop. Spot coalescence.	Sanitation; protective sprays of Cleary's 3336 or Domain may help.
Tomato	Bacterial Leaf Spot (<i>Xanthomonas axonopodis</i>)	Black, circular, water-soaked spots.	See ANR-71 and the AL Pest Management Handbook.
	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.
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.

<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 a 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 diam.) develop on foliage.	Sanitation; See the AL Pest Management Handbook or Spray Guide Bulletin for Vegetables.
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	Botryosphaeria Canker	Dark, cracked, slightly sunken lesions on branches. Often follows cold injury.	Pruning.
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 Ala. Spray Guide.

<u>PLANT</u>	<u>DISEASE</u>	<u>DESCRIPTION</u>	<u>CONTROL</u>
	Powdery Mildew (<i>Erysiphe</i>)	Gray-white or buff colored powdery blotches usually on leaf blades.	See Ala. Spray Guide.
	Septoria Blotch	Yellow flecks on lower leaves enlarge into irregular, elongated lesions (1-5 x 4-15 mm or 1/16-C x C-2 inches) that become brownish with some spots developing gray centers.	Generally no control needed.
	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 C inch long). Plants become stunted.	Crop rotation.
Zoysia	Brown Patch (<i>Rhizoctonia</i>)	Small or large circular brown patches on lawn; grass blades show medium brown lesions or crowns show lesions and rot.	See ANR- 492.