

TIMELY INFORMATION

Agriculture & Natural Resources

November 17, 2006

PP-616

OCTOBER PLANT PROBLEM REPORT FROM THE AUBURN PLANT DIAGNOSTIC LAB

OCTOBER PLANT PROBLEM REPORT FROM THE BIRMINGHAM PLANT DIAGNOSTIC LAB

OCTOBER INSECT REPORT FROM THE AUBURN PLANT DIAGNOSTIC LAB

DISEASE POSSIBILITIES FOR NOVEMBER

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[Auburn Plant Disease Report-October \(J. Mullen\)](#)

In October, the Auburn Plant Diagnostic Lab received 75 plant samples. Some of the diseases seen in October included soybean and kudzu rust, daylily rust, *Xanthomonas* bacterial leaf spot on lantana; *Cercospora* leaf spot on oak; *Xylella* bacterial scorch on northern red oak; *Cercospora* leaf spot on field pea; root knot nematode on peanuts; *Phytophthora* crown and root rot of strawberry; *Fusarium* surface rot of sweet potato; tomato spotted wilt of tomato; *Melampsora* rust on willow; and a variety of diseases on turf grasses including brown patch on centipede, *Bipolaris* (*Helminthosporium*) on bermuda grass and zoysia, ring nematode on zoysia, take-all patch on St. Augustine and centipede, and gray leaf spot on St. Augustine grass.

Asian soybean rust (ASBR) was detected in late June on soybeans in Baldwin County. (Previous to that detection, it had been found on kudzu in January, February, March, and May in Montgomery, Mobile, Baldwin, Henry, and Houston counties, respectively.) After the late June detection in Baldwin County, it was not detected again on soybean until the last few days of September and the first week of October. At this time, ASBR was found on soybeans in 9 counties (Geneva, Autauga, Escambia, Sumter, Henry, Limestone, Lee, Mobile, and Lowndes). Most of the rust on soybeans was found in Sentinel plots. The disease was found on kudzu in October in 9 counties (Clarke, Covington, Pike, Bullock, Russell, Houston, Dale, Coffee, and Barbour). This survey and identification work was done by Ed Sikora, Mary Delaney, Dennis Delaney, and the ASBR Team. Recently, we confirmed ASBR with the PCR technique.

Daylily rust, caused by the fungus *Puccinia hemerocallidis*, was first identified in Alabama and some other states in the Southeast in 2000. It is now widespread in Alabama and many other states. The disease develops as yellow leaf spots that may merge and cause a leaf blight. When rust spores are present, the spots may appear orange or yellow-orange. Disease control involves sanitation (cutting back foliage) and application of protective fungicides. See the AL Pest Management Handbook.

The tomato with tomato spotted wilt virus showed stunting and leaf deformity. The leaf spots, ring spots, and leaf bronzing symptoms characteristic of TSWV were not present. The disease was identified using an Agdia ELISA kit. Control requires sanitation, thrips control, and weed control.

Melampsora rust was identified on weeping willow. This rust is not systemic. The willow may be a host to several subspecies (called form species or *formae specialis*) of *Melampsora epitea*. The subspecies all produce identical spores on the willow, but each one has a different alternate host where other rust types are produced. Some of the subspecies produce spores that can over-winter on willow buds and twigs. If the rust subspecies on this willow is one that over-winters on the tree buds, the disease will occur next year. All rust subspecies will spend the winter on dead fallen leaves. The fungus will develop in the spring on the dead leaves. If the winter is mild, spores may develop (on the dead leaves) and infect new willow leaves. If the winter is cold, spores may be produced that will only infect the alternate host which might be fir, saxifrage, hemlock, larch, currant, and gooseberry. Since our winters are often mild and since we do not have most of the alternate hosts in this area, I suspect the spores produced on the dead leaves will directly infect the new willow leaves next spring. All fallen leaves should be removed from the area. If spots begin to develop in the spring, protective sprays of Kocide may be applied.

In October we saw a zoysia sample with ring nematode damage. We also saw one with ring nematode numbers below the damage threshold but close to it. In early November, a centipede sample had high enough numbers of ring nematode to cause damage. It may be that nematodes are causing more turf damage than we realize. Unfortunately, the only recommendation for nematode damage on homeowner turf is to eliminate other stress factors. (Some of our turf samples have been found to have multiple problems including nematodes, disease, insect, and pH problems).

Lantana bacterial leaf spot appeared as small angular and circular dark spots with water-soaked edges. Culture work produced bacterial growth that was characteristic of the appearance of *Xanthomonas*. (Cultures have been processed for species identification using the gas chromatography method. The analysis will be done after Thanksgiving break.) Control of bacterial leaf spots typically involves strict sanitation. All damaged plant material must be removed and destroyed. Foliage should not be watered by over-head sprinklers.

A collard sample showed symptoms of leaf edge necrotic lesions, poor growth, and a surface stem discoloration. The leaf lesions somewhat resembled black rot caused by *Xanthomonas campestris*, but bacteria were not detected. The stems contained surface *Rhizoctonia*. Culture work on the stems produced *Rhizoctonia* and *Fusarium* which are both reported to cause a stem decay of collards. The study indicated that *Rhizoctonia* and *Fusarium* were beginning to cause a stem rot to develop. A root or soil stress problem may also be involved.

Cercospora leaf spots have been common in October and the first part of November. This disease was seen on oak, field pea, Staghorn fern, and camellia. Leaf spots were usually irregular in shape or oval-irregular with a light brown center and often a darker brown edge. Sanitation may be the only control measure needed. All fallen leaves should be removed from the area. If needed, Cleary's 3336 would provide protective disease control.

Table 1. 2006 October Plant Diseases Seen In The Auburn Plant Diagnostic Lab.

| <u>Plant</u> | <u>Disease</u> | <u>County</u> |
|-------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------------|
| Apple | Botryosphaeria Canker | Chilton, Henry |
| Bermuda Grass | Bipolaris Leaf Spot/Crown Rot | Jefferson |
| Centipede | Brown Patch (<i>Rhizoctonia solani</i>) | Calhoun, Lee, Montgomery |
| | Take-All Patch (<i>Gaeumannomyces graminis</i> var <i>graminis</i>) | Calhoun, Montgomery |
| Collards | Rhizoctonia & Fusarium Stem Rot | Montgomery |
| Daylily | Daylily Rust (<i>Puccinia hemerocallidis</i>) | Houston |
| Holly, 'Rotunda' | Possible Armillaria Root Rot | Houston |
| Kudzu | Asian Soybean Rust (<i>Phakopsora pachyrhizi</i>) | Barbour, Bullock, Clarke, Coffee, Covington, Dale, Houston, Pike, Russell |
| Lantana | Bacterial Leaf Spot (<i>Xanthomonas</i> sp.) | Lee |
| Oak | Cercospora Leaf Spot | Morgan |
| Oak, Water | Suspect Hypoxylon Canker | Macon |
| Oak, Northern Red | <i>Xylella</i> Bacterial Scorch | Calhoun |

| <u>Plant</u> | <u>Disease</u> | <u>County</u> |
|---------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Pea, Field | Cercospora Leaf Spot | Lee |
| Peanuts | Root Knot Nematode | Henry |
| Soybean | Asian Soybean Rust (<i>Phakopsora pachyrhizi</i>) | Autauga, Escambia, Geneva, Henry, Lee, Limestone, Lowndes, Mobile, Sumter |
| St. Augustine Grass | Gray Leaf Spot (<i>Piricularia grisea</i>) | Cullman, Elmore, Jefferson |
| | Take-All Patch (<i>Gaeumannomyces graminis</i> var. <i>graminis</i>) | Calhoun, Elmore, Houston, Jefferson, Mobile, Montgomery |
| Strawberry | Phytophthora Crown & Root Rot | Marshall |
| Sweet Potato | Fusarium Surface Rot | Tallapoosa |
| Tomato | Tomato Spotted Wilt Virus | Lee |
| Willow, Weeping | Melampsora Rust | Calhoun |
| Zoysia | Bipolaris Leaf Blight | Russell |
| | Drechslera Blight | Montgomery |
| | Possible Ring Nematode Damage (<i>Criconemoides</i> sp.) | Russell |
| | Ring Nematode Damage (<i>Criconemoides</i> sp.) | Cullman |

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

Birmingham Plant Disease Report-October (J. Jacobi)

We received 49 samples for the month of October. Many of the samples were showing symptoms of the effects of this summer's drought, especially on woody plants. Some of the problems seen last month included Pythium damping-off on cabbage, black root rot on

Japanese holly, tuliptree scale and associated sooty mold on star and southern magnolia, and tomato yellow leaf curl virus and pepino mosaic virus on tomato.

Post-emergent damping-off was noted on cabbage transplants last month. In this case, the cabbage transplants developed a soft, mushy rot starting at the soil line soon after transplanting. Eventually, diseased plants collapsed and died. Cultural controls include planting on raised beds and providing good drainage. Fungicides are not labeled for control of this disease on transplanted cabbage.

Tomato yellow leaf curl (TYLCV) and Pepino mosaic virus were detected in a tomato sample last month. Symptoms of TYLCV include stunting, reduced leaf size, leaf curling, and leaf yellowing. TYLCV is transmitted by adult silverleaf whiteflies. Initial sample testing was conducted by Agdia Inc. and Dr. Jane Polston at the University of Florida. Additional testing is ongoing to characterize and confirm the initial detection of these viruses. TYLCV has been previously detected in Florida, Georgia, Mississippi, and the Caribbean. Last year Dr. Polston confirmed TYLCV and tomato mottle virus in transplants in Alabama. These plants had been recently purchased from a location in Florida. To our knowledge, this is the first detection of Pepino mosaic virus in Alabama. For more information on these virus diseases, see the following web sites: (<http://edis.ifas.ufl.edu/pdffiles/NF/NFRECE100.pdf>) (<http://www.agf.gov.bc.ca/cropprot/tomatoviruses.htm>).

Table 2. 2006 October Problems Seen In The Birmingham Plant Diagnostic Lab.

| <u>Plant</u> | <u>Problem</u> | <u>County</u> |
|-----------------------|-----------------------------------------|-----------------------|
| Azalea | Anthrachnose (<i>Colletotrichum</i>) | Jefferson |
| Bluegrass, Roughstalk | Superficial Fairy Ring | Jefferson |
| Cabbage | Pythium Damping-Off | Jefferson |
| Gardenia | Wax Scale (<i>Ceroplastes</i>) | Jefferson |
| Holly, Chinese | Wax Scale (<i>Ceroplastes</i>) | Jefferson |
| Holly, Japanese | Armillaria Root Rot | Jefferson |
| | Black Root Rot (<i>Thielaviopsis</i>) | * (2) |
| | Two-Lined Spittlebug | Jefferson |
| Holly, Inkberry | Anthrachnose (<i>Colletotrichum</i>) | Jefferson |
| Hydrangea, Bigleaf | Black Twig Borer | Jefferson |
| | Corynespora Leaf Spot | Jefferson, Shelby |
| Leyland Cypress | Botryosphaeria Canker | Jefferson, Shelby (3) |

| <u>Plant</u> | <u>Disease</u> | <u>County</u> |
|---------------------|------------------------------------------------|---------------|
| Magnolia, Southern | Tuliptree Scale (<i>Toumeyella</i>) | Jefferson |
| Magnolia, Star | Tuliptree Scale (<i>Toumeyella</i>) | Jefferson |
| St. Augustine Grass | Large Patch (<i>Rhizoctonia</i>) | Jefferson |
| | Take-All Root Rot (<i>Gaeumannomyces</i>) | Jefferson |
| Tomato | Pepino Mosaic Virus | * |
| | Tomato Yellow Leaf Curl | * |
| Zoysiagrass | Algae (<i>Nostoc</i>) | Jefferson |
| | Curvularia Blight | Shelby |

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

Auburn Entomology Report-October (C. Ray)

| County | Crop | Category | Specimen Name |
|---------------|-------------|-----------------------------|------------------------------------------------------------|
| Chilton | | Miscellaneous | Unicorn Beetle, <i>Dynastes tityus</i> |
| Choctaw | | Miscellaneous | Green Lacewing Larva, Chrysopidae |
| Choctaw | Cereal | Household-Stored Product | Indian Mealmoth, <i>Plodia interpunctella</i> |
| Choctaw | | Miscellaneous | Black Carpenter Ant, <i>Camponotus pennsylvanicus</i> |
| Jefferson | Home | Medical | Juvenile Black Widow Spider, <i>Latrodectes mactans</i> |
| Tallapoosa | Boxwood | Ornamental | Black Twig Borer, <i>Xylosandrus compactus</i> |
| Tallapoosa | Dogwood | Ornamental | Black Twig Borer, <i>Xylosandrus compactus</i> |

| County | Crop | Category | Specimen Name |
|---------------|---------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tallapoosa | Hydrangea | Ornamental | Black Twig Borer, <i>Xylosandrus compac-</i> <i>tus</i> |
| Tallapoosa | Hydrangea | Ornamental | Black Twig Borer, <i>Xylosandrus compac-</i> <i>tus</i> |
| Colbert | Hydroponic Lettuce | Row Crops | Bloodworms, Chironomidae Larvae |
| Lee | Chinese Holly | Ornamental | Florida Wax Scale, <i>Ceroplastes floridensis</i> |
| Lee | Lantana | Ornamental | Lantana Lace Bug, <i>Teleonema scrupulosa</i> |
| Lee | Crape Myrtle | Ornamental | Crape Myrtle Aphid, <i>Tinocallis kahawaluo-</i> <i>kalani</i> |
| Calhoun | St. Augustine Grass | Turfgrass | Chinch Bugs, <i>Blissus</i> sp. |
| Limestone | Soybeans | Row Crops | Ichneumonid Wasp Pupae, Ichneumonidae |
| Limestone | Soybeans | Row Crops | Velvetbean Caterpillar, <i>Anticarsia gemmata-</i> <i>lis</i> , Stinkbug Nymph, Threecornered Alfalfa Hopper, <i>Spissistilus</i> <i>festinus</i> , Soybean Aphid, <i>Aphis glycines</i> |
| Morgan | Soybeans | Row Crops | Velvetbean Caterpillar, <i>Anticarsia gemmata-</i> <i>lis</i> , Soybean Aphid, <i>Aphis glycines</i> , Cotton Aphid, <i>Aphis gossypii</i> |
| Morgan | Soybeans | Row Crops | Velvetbean Caterpillar, <i>Anticarsia gemmata-</i> <i>lis</i> , Soybean Aphid, <i>Aphis glycines</i> , Cotton Aphid, <i>Aphis gossypii</i> |

| County | Crop | Category | Specimen Name |
|--------------|-------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Madison | Soybeans | Row Crops | Soybean Aphid, <i>Aphis glycines</i> , Cotton Aphid, <i>Aphis gossypii</i> , Adult Lacewing, (Chrysopidae), Green Cloverworm, <i>Plathpena scabra</i> , Threecornered Alfalfa Hopper, <i>Spissistilus festinus</i> , Bandedwing Whiteflies, <i>Trialeurodes abutiloneus</i> , Soybean Thrips, <i>Neohydatothrips variabilis</i> |
| Madison | Soybeans | Row Crops | Soybean Aphid, <i>Aphis glycines</i> , Larval Lacewing (Chrysopidae), Velvetbean Caterpillar, <i>Anticarsia gemmatilis</i> , Threecornered Alfalfa Hopper, <i>Spissistilus festinus</i> , Stinkbug Eggs (Pentatomidae) |
| Morgan | Soybeans | Row Crops | Soybean Aphid, <i>Aphis glycines</i> , Bandedwing Whitefly, <i>Trialeurodes abutiloneus</i> |
| Hale | Home | Household-Miscellaneous | Royal Walnut Moth, <i>Citheronia regalis</i> . |
| Lee | Home | Household-Miscellaneous | False Wolf Spider, <i>Ctenus hibernalis</i> |
| Lee | Pepper | Row Crop | Broad Mite, <i>Polyphagotarsonemus latus</i> |
| Elmore | Crop Refuse | Miscellaneous | Scoliid Wasp, <i>Scolia dubia</i> |
| Columbus, GA | Home | Household-Miscellaneous | Drugstore Beetle, <i>Stegobium paniceum</i> |

| County | Crop | Category | Specimen Name |
|---------------|---------------------|-------------------------|-----------------------------------------------------------------|
| Columbus, GA | Home | Household-Miscellaneous | European House Dust Mite, <i>Dermatophagoides pteronyssinus</i> |
| Morgan | St. Augustine Sod | Turfgrass | Chinch Bug, <i>Blissus</i> sp. |
| Morgan | Oak | Ornamental | Spider Mite (Tetranychidae) |
| Jefferson | Southern Magnolia | Ornamental | Tuliptree Scale, <i>Toumeyella liriodendri</i> |
| Henry | Apple | Fruits | San Jose Scale, <i>Quadraspidiotus perniciosus</i> |
| Elmore | St. Augustine Grass | Turfgrass | Chinch Bugs, <i>Blissus</i> sp. |
| Lee | Pepper | Row Crops | Broad Mite, <i>Polyphagotarsonemus latus</i> |
| Chambers | Canned Beer | Miscellaneous | Smoky Brown Cockroach Nymph, <i>Periplaneta fuliginosa</i> |
| Randolph | Home | Household-Miscellaneous | Argentine Ants, <i>Linepithema humile</i> |
| Lee | Home | Household-Miscellaneous | Flying Ants (Formicidae) |
| Geneva | Princess Tree | Ornamental | White Peach Scale, <i>Pseudaulacaspis pentagona</i> |
| Wilcox | Home | Household-Miscellaneous | Book Lice (Psocoptera) |
| Franklin | Home | Household-Miscellaneous | White-Fringed Beetle, <i>Naupactus</i> sp. |
| Clarke | Home | Household-Structural | Southern Drywood Termite, <i>Incisitermes snyderi</i> |
| Wilcox | Pine Straw | Miscellaneous | Bordered Plant Bug, <i>Largus succinctus</i> |

| County | Crop | Category | Specimen Name |
|-----------|---------------------|--------------------------|--------------------------------------------------------------|
| Pickens | Home | Household-Structural | Eastern Subterranean Termite, <i>Reticulitermes flavipes</i> |
| Randolph | Apple | Fruits | San Jose Scale, <i>Quadraspidiotus perniciosus</i> |
| Jefferson | Bermuda Grass | Turfgrass | Bermuda Grass Scale, <i>Odonaspis ruthae</i> |
| Mobile | St. Augustine Grass | Turfgrass | Chinch Bugs, <i>Blissus</i> sp. |
| Mobile | Ornamental Plants | Ornamentals | Florida Predatory Stink Bug, <i>Euthyrhynchus floridanus</i> |
| Mobile | Cole Crops | Row Crops | Hawaiian Beet Webworm Moth, <i>Spolodea recurvalis</i> |
| Calhoun | Home | Household-Stored Product | Mold Mite, <i>Tyrophagus putrescentiae</i> |

Disease Possibilities For November

Typically in November, we see *Helminthosporium* (*Bipolaris*, *Drechslera*, and *Exserohilum*) leaf spots on small grains and grasses. Rust may be seen on small grain crops. A variety of pansy diseases may be seen. Turnips and other related plants often develop *Cercospora* leaf spots. Greenhouse crops may develop *Botrytis* and a variety of other fungal and bacterial diseases.

The list below includes some common disease problems received in the lab during November of the past few years. Comments on control practices are brief. Refer to the Alabama Pest Management Handbook or appropriate fact sheet for details on disease control.

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

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Alfalfa | Leptosphaerulina Leaf Spot | Leaf spots on young leaves and petioles; small, black, pepper spots or 1-3 mm eyespots with tan centers, dark brown borders and diffuse halos. | None. |
| Ajuga | Rhizoctonia Crown & Root Rot | Crowns & roots develop a brown, dry decay. | Sanitation. Cleary's 3336 will provide protective disease control. |
| Allspice (<i>Pimenta dioica</i>) | Rust | Yellow-brown leaf spots sometimes with red-orange powdery spore masses. | Sanitation. |
| Anise, Japanese | Phytophthora Root Rot | Dieback. Roots are dying, brown, & soft rotted. | Sanitation. Reduce soil water levels. |
| Arbor-vitae | Pestalotiopsis Tip Blight | Branch tips turn brown; browning gradually progress down the branch. | Pruning. Halt may provide some disease control. |
| | Phytophthora Root Rot | Roots become brown, decayed. When disease is active, roots are water-soaked. | Sanitation; protective fungicide drenches. See AL Pest Management Handbook. |
| | Pythium Root Rot | Dieback. Affected small roots become slightly brown and soft rotted. | Sanitation. Reduce water levels in soil. See fungicides in AL Pest Management Handbook under Arbor-vitae and Phytophthora. |
| Asparagus | Helminthosporium Stem Spots | Brown elongated, usually about ½ inch long, somewhat rectangular stem lesions. | Sanitation. Mancozeb fungicides. |
| Azalea | Colletotrichum Leaf Spot | Circular, small (2-4 mm), round leaf spots. | Sanitation. See the AL Pest Management Handbook. |
| | Phomopsis Dieback | Sunken, elliptical, necrotic lesions on branches with dieback of distal branch segments. | Sanitation. See the AL Pest Management Handbook. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|---------------------------|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| | Phytophthora Root Rot | Foliage dieback. Roots become brown, water-soaked; later roots dry out. | See the AL Pest Management Handbook. |
| | Powdery Mildew (<i>Microsphaeria</i>) | Whitish powdery dusting on leaves; some leaf deformity if infection occurs on new growth; infected leaves eventually become yellowed. | See the AL Pest Management Handbook. |
| Azalea (Cuttings, Liners) | Aerial Web Blight (<i>Rhizoctonia</i>) | Lower leaves become brown spotted or blighted; when conditions are humid, a delicate mycelial webbing may occur on infected leaves; eventually, infected, blighted leaves drop. | See the AL Pest Management Handbook. |
| | Phytophthora Root Rot | See Arbor-vitae. | See Arbor-vitae comments. |
| Azalea (Cutting) | Rhizoctonia Cutting End Rot | Cutting ends develop brown lesions which may completely encircle the stem. Plant death results. | Sanitation. |
| Barley | Net Blotch (<i>Drechslera</i>) | Narrow, dark brown, longitudinal and transverse net-like streaks on leaves and leaf sheaths. Severely infected leaves may completely die. | Rotation. |
| Begonia | Cylindrocladium Canker | Dark brown, sunken lesions on lower stems near soil line. | Sanitation - remove damaged plants and some soil in lower stem area. |
| Bentgrass | Pythium Blight/Root Rot | Foliage becomes yellowed and then brown as a result of the decaying roots which appear brown and water-soaked. | See the AL Pest Management Handbook for recommendations. |
| | Rhizoctonia Aerial Blight | Foliage develops brown spots and blight areas. Dieback. | See the AL Pest Management Handbook. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|--------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Bermuda | Bipolaris Leaf Spot & Crown Rot | Small elongated spots; spot coalescence and blight of whole leaf blades when disease is severe; lower stem may become necrotic. | See the AL Pest Management Handbook. |
| | Pythium Root Rot | Foliage turns yellow and dieback follows. Roots become light brown and soft rotted. | See the AL Pest Management Handbook. |
| Birch, River | Anthrachnose (<i>Cryptocline</i>) | Brown blotches on leaves; blotches may occur along veins or at leaf edges. | Sanitation. |
| Boxwood | Macrophoma Blight | Leaves are yellow with tiny black specks. | Collect all fallen leaves and remove them from the area; identify and eliminate stress factors; Cleary's 3336 or Halt may be used if desired. |
| | <i>Nectria cinnabarina</i> Canker | Sunken lesions on branches, sometimes with orange pin-point bodies of the fungus; dieback. | Pruning at least 3 inches beyond the canker edge. |
| | Phytophthora Root Rot | Lower foliage turned yellow and brown; roots are rotted with tissues water-soaked and brown. | Remove plants. Improve soil drainage. See the AL Pest Management Handbook if a large planting or nursery. |
| | Pythium Root Rot | This is often a secondary problem on plants previously weakened by other factors. Roots become light brown and soft rotted. Lower foliage will initially turn yellow and brown. Foliage browning will gradually spread upward through the plant. | Remove dying plants; improve soil drainage; reduce water levels in soil. Eliminate stress. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|----------------------------|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| | Volutella Blight | Dieback, cankers and orange spore masses develop on branches/trunk. | Pruning or plant removal. See the AL Pest Management Handbook. |
| Broccoli, Cabbage | Black Rot (<i>Xanthomonas</i>) | Yellow or brown V-shaped patches occur at leaf edges. Later, leaf veins in the yellowed areas become black. The black leaf veins extend down the leaf and eventually the vascular elements in stem become black. | Hot water seed treatment or plant certified disease-free seeds. When disease is present, rotate area away from crucifers for 2-3 years. |
| Camellia | Phyllosticta Leaf Spot | Dark purple-brown circular-oval leaf spots. | Sanitation in the fall. Protective fungicide sprays (Cleary's 3336) if disease appears early in the season. |
| | <i>Phytophthora ramorum</i> Blight (Sudden Oak Death) | Brown, wet leaf spots on leaves and small stems/twigs; dieback. | Review symptoms & situation with the grower. Contact the AL State Department of Agriculture if you think testing is needed. |
| | Phytophthora Root Rot | Foliage dieback. Roots become brown and water-soaked and later dry out. | See the AL Pest Management Handbook. |
| Camellia, Sasanqua | Anthraco-nose Leaf Spot (<i>Colletotrichum</i>) | Gray-brown, usually circular leaf spots. | Sanitation of fallen leaves. Cleary's 3336 or Halt protective fungicide sprays will help. |
| Centipede | Brown Patch (<i>Rhizoctonia</i>) | A light brown circular patch; crowns and leaf blades become brown and dead. | See AL Pest Management Handbook. |
| | Ring Nematode (<i>Criconemoides</i> sp.) | Patches of lawn show yellowing and thinning. | See ANR-523. |
| Cherry Laurel 'Otto Lukin' | Botryosphaeria Canker | Elongated sunken branch lesions, often with cracks along the margin. | Sanitation. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|---------------|-------------------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Chrysanthemum | Pythium Root Rot | Roots brown and water-soaked. Foliage yellows and shows poor growth, dies. | Sanitation; protective fungicide drench treatments; see AL Pest Management Handbook. |
| Collards | Anthracnose | White-cream, circular-irregular leaf spots. | Copper fungicides. |
| | Black Rot (<i>Xanthomonas</i>) | See Broccoli. | --- |
| | Cercospora Leaf Spot | Light brown irregular spots (about 0.6 cm or ¼ inch diameter), sometimes with a darker brown border. | Sanitation. |
| Columbine | Botrytis Blight | Gray-brown blotches develop on blossoms, leaves, and stems. | Sanitation. Cleary's 3336 or Halt may be applied for protective control. |
| | Pythium Root Rot | Foliage dieback; roots become water-soaked, and brown, and later dry out. | Sanitation; reduce water levels in the area; crop rotation. |
| Coneflower | Aster Yellows (Suspect) | Plants become stunted with green flowers and some abnormal foliage development. | Sanitation. |
| Cotoneaster | Phytophthora Root Rot | Foliage dieback. Roots become brown, water-soaked and later dried. | Sanitation. Reduce water levels. Subdue protective treatments, following label directions. |
| Cucumber | Downy Mildew (<i>Pseudoperonospora</i>) | Irregular yellow spots that become necrotic. | See the AL Pest Management Handbook. |
| Daylily | Phytophthora Root Rot | Roots become brown and wet; later dead roots become dry; plant foliage shows wilt and dieback. | Sanitation; remove damaged plants; remove some root-associated soil; decrease water levels in the soil. |
| | Rust (<i>Puccinia hemerocallidis</i>) | Yellowing spots and blight of leaves. Orange powder may wipe off on fingers. | See the AL Pest Management Handbook. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|-----------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Dianthus | Bacterial Leaf Spot (<i>Xanthomonas</i>) | Small, black angular, wet-looking spot. | Sanitation; Kocide may help. |
| | Colletotrichum Leaf Spot | Irregular brown, sometimes circular spots. | Sanitation; protective sprays of Cleary's will help. |
| Eleagnus | Phytophthora Root Rot | Roots become brown and wet; later dead roots become dry; plant foliage shows wilt and dieback. | Sanitation; remove damaged plants; remove some root-associated soil; decrease water levels in the soil. |
| Fescue, Tall | Pythium Blight | Brown, water-soaked lesions, blight on foliage. | Reduce watering schedule. Apply protective fungicides. See the AL Pest Management Handbook and ANR-1168. |
| | Rust (<i>Puccinia</i>) | Yellowing spots and blight of leaves. Orange powder may wipe off on fingers. | See the AL Pest Management Handbook. |
| Fig | Common Rust (<i>Cerotelium</i>) | Yellow spots that develop an orange rusty appearance. | Sanitation of leaves. This rust will also occur on Florida strangler fig and osage-orange. |
| Gardenia | Phytophthora Root Rot | Brown discolored, decayed, water-soaked roots. | Sanitation; reduce soil moisture; Banrot or Banol may be used—usually in a nursery situation. |
| Gardenia, Dwarf | Pythium Root Rot | Lower foliage becomes yellow and then brown. Foliage damage spreads upward. Roots become light brown and wet-rotted. This fungus usually is a problem only on weakened plants. | Remove damaged plants. Improve soil drainage. Reduce water levels in the soil. See AL Pest Management Handbook if fungicide treatment is needed. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|-------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Geranium | Oedema | Corky brown spots (2-3 mm) on lower leaf surfaces. Corresponding upper leaf surfaces become yellow spotted. | Reduce watering schedule when weather is cool and cloudy. |
| Helleri Holly Liners and Containers | Black Root Rot (<i>Thielaviopsis</i>) | Roots develop black tips and black lesions and sections. | Sanitation; See AL Pest Management Handbook. |
| | Rhizoctonia Aerial Blight | Lower leaves become spotted and blighted. Leaf fall occurs. | See AL Pest Management Handbook. |
| Holly | Pythium Root Rot | Lower foliage becomes yellow and then brown. Foliage damage spread upward. Roots become light brown and wet-rotted. This fungus usually is a problem only on weakened plants. | Remove damaged plants. Improve soil drainage. Reduce water levels in the soil. See AL Pest Management Handbook if fungicide treatment is needed. |
| Holly, Compacta and Helleri | Colletotrichum Leaf Spot | Brown-black circular spots. | Sanitation. Cleary's 3336 may be used as a protective treatment. |
| | Phytophthora Root Rot | Lower foliage becomes yellowed and brown. Foliage damage spreads upward in plant. Roots become brown rotted & water-soaked. The outer root cortex can be easily slipped off of the inner central root cylinder. | Remove damaged plants. Correct water problem in soil. See the AL Pesticide Handbook; Sanitation. |
| Hydrangea | Anthraco nose | White-cream colored irregular-oval of spots. | See the AL Pest Management Handbook. See ANR-1212. |
| | Powdery Mildew | Patchy leaf areas with white dusty coating. Necrosis develops later. | See the AL Pest Management Handbook. See ANR-1212. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Impatiens | Root Knot Nematode (<i>Meloidogyne</i>) | Roots develop galls; plants are unthrifty and stunted. | Remove plants. Solarization or crop rotation. See ANR-689. |
| Indian Hawthorne | Entomosporium Leaf Spot | Black spots with red borders develop on the foliage. | Sanitation; protective fungicide sprays. See the AL Pest Management Handbook. |
| Ivy, English | Botryosphaeria Canker | Brown, sunken lesions on stems. | Sanitation - prune out the lesions. Make cuts 2 inches beyond the edge of the lesions. Dip shears into alcohol or a 10% bleach solution between cuts. |
| | Nectria Canker | Sunken lesions on branches/stems; sometimes diagnostic red pin-point fruiting bodies are present. | Pruning lesions making cuts at least 3 inches beyond lesions edges. Cleary's may help. |
| Jasmine, Florida | Armillaria Root Rot | Roots become dry-rotted. The fungus may produce a thin, white mycelial mat on roots and under the bark on lower trunk; also the fungus may produce black fungal threads on root surface and lower trunk surface; brown mushrooms may be produced. Dieback of foliage occurs. | See ANR-907. |
| Juniper | Phomopsis Tip Blight | Dieback. | Sanitation. See the AL Pest Management Handbook. |
| | Phytophthora Root Rot | See Arbor-vitae. | See Arbor-vitae comments. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|-----------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Kalanchoe | Powdery Mildew (<i>Sphaeroteca</i>) | Leaves and stems are covered with a white powdery dusting. Some distortion of new growth may be present. Some foliage yellowing and browning may be present. | Sanitation. Maintain even day-night temperatures if possible. Apply protective sprays of a recommended fungicide. See AL Pest Management Handbook. |
| Kudzu | Asian Soybean Rust | Small, yellow-brown angular or round leaf spots occur. Lower leaf surface spots produce spore masses that can be seen with a 20X hand lens. | --- |
| Lavender | Fusarium Stem Rot/ Pythium | Stems develop brown decay areas. | Sanitation. Reduce water levels in the area. Move lavender to a new area. |
| Leucothoe | Phytophthora Blight | Foliage dieback. Roots become brown, water-soaked and later dry. | Sanitation. Reduce water levels. Subdue treatments (drenches) may be used according to label directions. |
| | Phytophthora Root Rot | Lower foliage becomes yellowed and brown. Foliage damage spreads upward in plant. Roots become brown rotted & water-soaked. | Remove damaged plants. Correct water problem in soil. Apply Subdue if a protective fungicide treatment is desired. |
| | Powdery Mildew | Leaves develop white superficial dusting on surfaces. Affected leaf areas later turn brown. | Improve air circulation. See the AL Pest Management Handbook. |
| Leyland Cypress | Botryosphaeria Canker | Small-large sunken, cracked branch/trunk lesions. | Sanitation – pruning. |
| | Cercosporidium Blight | Lower foliage becomes pale green and then brown. | Sanitation; Improve air circulation; See the AL Pest Management Handbook for protective fungicide treatments. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|--------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| | Seiridium Canker | Small-large elongated, sunken lesions with oozing sap. | Pruning. See the AL Pest Management Handbook. |
| | Phytophthora Root Rot | Roots become brown, and wet-rotted. Plants show dieback. | Sanitation; tree removal; correct water problems. |
| Ligustrum | Cercospora Leaf Spot | Relatively large, circular, dark brown leaf spots develop. | Collect & remove all fallen leaves from the area. Apply Cleary's 3336 or Halt for protective disease control. |
| Lupin | Pythium Root Rot/Seedling Disease | Roots become brown and water-soaked. | --- |
| | Rhizoctonia Root Rot | Roots become brown and dried. | --- |
| Magnolia, Southern | Algal Leaf Spot (<i>Cephaleuros</i>) | Green or reddish-colored, slightly raised, usually circular or oval spots with wavy margins develop on upper leaf surfaces. | Sanitation. |
| Maple, Red | Zonate Leaf Spot (<i>Cristulariella</i>) | Brown, zonate leaf spots which may become large at ¼ inch or more. | Sanitation. See the AL Pest Management Handbook under 'Leaf Spot'. |
| Marigold Plugs | Alternaria Leaf Spot | Small, dark brown, irregular spots (1-3 mm) on leaves and stems. | See AL Pest Management Handbook. |
| Mustard | Cercospora Leaf Spot | Light brown irregular-shaped leaf spots. | Sanitation. See the AL Pest Management Handbook. |
| Oak | Ganoderma Wood/Root Rot | Tree dieback. Conks developing on the trunks of infected trees are non-gilled, poroid, with or without a lateral stalk, with a distinctive reddish-brown or gray-brown varnish-like crust on the upper surface. | Sanitation. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|--------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| | Powdery Mildew (<i>Phyllactinia</i>) | Powdery white dusting on upper leaf surfaces with blight following. | Sanitation. If tree is small, protective sprays of Cleary's 3336. |
| Oak, Red | Powdery Mildew (<i>Phyllactinia</i>) | Leaves develop white superficial dusting on surfaces. Affected leaf areas later turn brown. | Improve air circulation. See the AL Pest Management Handbook. |
| Oats | Crown Rust (<i>Puccinia coronata</i>) | Bright orange, round to oblong, powdery pustules on leaves, sheaths, stems, and panicles. | Resistant cultivars. |
| | <i>Drechslera avenae</i> Leaf Spot | Small brown flecks become longitudinal strips of dead tissue. Outer edges of the brown strips have diffuse areas of yellow or red which may involve the entire leaf blade. Diseased leaves often die. | Rotation; deep plowing; resistant cultivars. See AL Pest Management Handbook. |
| Okra | Root Knot Nematode (<i>Meloidogyne</i>) | Plants grow poorly and may be stunted. Roots contain irregularly shaped galls. | Crop rotation, solarization, or use of resistant varieties will help. See ANR-30. |
| Pansy | Anthraco nose (<i>Colletotrichum</i>) | Small, cream-colored, circular spots with dark borders. | Sanitation; See the AL Pest Management Handbook; also ANR-1214. |
| | Black Root Rot (<i>Thielaviopsis</i>) | Black root tips and black root lesions and areas. | Cleary's 3336; See AL Pest Management Handbook and ANR-1214. |
| | Cercospora Leaf Spot | Gray-black round leaf spots about ¼-½ cm. | Sanitation. Daconil or Cleary's 3336 may be used for protective disease control, also ANR-1214. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|----------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| | Fusarium Crown & Root Rot | Dieback of foliage. Lower stems and roots become brown and dried. Orange spore masses may develop on surface of dead tissues. | Sanitation. Cleary's 3336 may give some protective control. |
| | Myrothecium Crown Rot | Collapse of petioles or lower stems. Tiny black and white pin-head sized bodies on collapsed tissues. | Sanitation. Daconil protective sprays. See ANR-1214. |
| | Phytophthora Crown Rot | Crown, roots become brown and water-soaked. | Sanitation. See the AL Pest Management Handbook and ANR-1214. |
| | Pythium Crown/Root Rot | Crowns, roots become brown and water-soaked. | See the AL Pest Management Handbook and ANR-1214. |
| | Rhizoctonia Crown Rot | Crowns develop a dry, brown, sometimes shriveled decay. | Sanitation. Cleary's 3336 would provide some protection. See ANR-1214. |
| Pear, Bradford | Black Rot (<i>Botryosphaeria obtuse</i>) | Leaf spots are black or brown, sometimes with a dark border. May be confused with <i>Fabraea</i> leaf spot. | Sanitation. Protective sprays of Cleary's 3336 will help. |
| | <i>Fabraea</i> (<i>Entomosporium</i>) Leaf Spot | Leaf spots are usually black and somewhat circular. May be confused with black rot leaf spots. | Sanitation. See AL Pest Management Handbook. |
| Pecan | Brown Spot (<i>Cercospora</i>) | Circular, reddish brown spots appear that become gray with concentric zones, and spots develop irregular shapes. | Maintain trees in good health; fungicides labeled for control of scab will control brown spot. |
| Periwinkle | Rhizoctonia Crown Rot | Crowns, roots become dried, brown, rotted. | Sanitation. See the AL Pest Management Handbook. |
| Phlox | Black Root Rot (<i>Thielaviopsis</i>) | See Pansy. | See Pansy. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|----------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Photinia | Entomosporium Leaf Spot | Black spots with dark red borders; spot coalescence; leaf drop. | Protective fungicide sprays; sanitation. |
| Pine, Virginia | Fusarium Pitch Canker | Elongated cankers. Some resin flow. | Sanitation. See comments in the AL Pest Management Handbook. |
| | Ploioderma (<i>lophodermium</i>) Needle Cast | Older needles become yellow and then brown in spots; eventually whole needles turn brown and drop. Small black football shaped lesions (1-2 mm long) develop on brown needles. | Protective fungicide sprays. See the AL Pest Management Handbook. |
| | Rhizosphaeria Needle Cast | Needles turn brown. Tiny black dots (fruiting bodies) occur in a linear arrangement on browning needles. | --- |
| Plum | Brown Rot (<i>Monilinia</i>) | Fruit tissues become brown & rotted. A gray mold may develop on the fruit surface. | Sanitation. Captan. See Ed Sikora. |
| <i>Poa trivialis</i> | Pythium Blight | Grass leaves become wet, brown, and decayed. | Decrease irrigation. See the AL Pest Management Handbook and A. Hagan. |
| Poinsettia | Alternaria Leaf Spot | Gray-brown circular leaf spots; zonate pattern possible. | Sanitation. Exotherm Termil may provide protective control. |
| | Botrytis Blight | Bracts and leaves develop gray lesions and areas. Elongated lesions may occur on stems. A gray web may develop on surface of lesions when conditions are humid. | See AL Pest Management Handbook. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| | Phyllosticta Leaf Spot | Gray-brown circular leaf spots; tiny black specks (fungal bodies) may be scattered on leaf spot surfaces. | Sanitation. Cleary's 3336 or Halt will provide protection. |
| | Phytophthora Root Rot | See Pythium Root Rot. | See Pythium Root Rot. |
| | Pythium Stem and Root Rot | Lower stem and roots become brown, soft, water-soaked, and rotted. | See AL Pest Management Handbook; sanitation. |
| | Rhizoctonia Crown & Root Rot | Lower stems develop dry, medium-dark brown surface lesions; roots may become brown and dried. | See AL Pest Management Handbook; sanitation. |
| Privet, Japanese | Cercospora Leaf Spot | Brown, circular-irregular leaf spots; sometimes inner spot areas are light brown and outer spot areas are dark brown. | Sanitation; protective sprays of Cleary's 3336 may help. |
| Rose, Miniature | Cylindrocladium Root Rot | Roots show black lesions and rotted areas. | Sanitation. |
| Ryegrass | Piricularia Gray Leaf Spot | Gray, brown, oval leaf spots. | See the AL Pest Management Handbook. |
| Ryegrass | Pythium Blight | Crowns and leaf blades become wet and greasy-looking. | See AL Pest Management Handbook. |
| Rye | <i>Bipolaris sorokiniana</i> Leaf Spot | Brown, elongated spots on leaf blades. | None. |
| Snapdragon | Pythium Root Rot | Roots become water-soaked and light brown. | Sanitation. See the AL Pest Management Handbook. |
| Soybean | Anthrachnose (<i>Colletotrichum truncatum</i>) | Irregularly shaped brown blotches on stems, pods, leaves sometimes with tiny black specks. This disease can cause a reduced yield. | Use disease free seed. Deep plow crop residues. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|---------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| | Asian Soybean Rust | Very small, angular brown spots develop on upper and lower leaf surfaces. Surfaces of lower leaf spots may become covered with pale orange-white spore masses. Defoliation. | Protective fungicide sprays. See Ed Sikora. |
| | Charcoal Rot | Dieback. Lower stem inner tissues are gray from masses of tiny black fungal bodies (sclerotia). | Check with Ed Sikora. |
| | Soybean Cyst Nematode | Plants are stunted, yellowed. | Resistant cultivars & crop rotation. Reduce plant stress by cultural management. See Ed Sikora. |
| | Stem Canker (<i>Diaporthe phaseolarum</i> var. <i>caulivora</i>) | Small red-brown stem lesions, usually near a leaf node; lesions become large and black, sunken cankers. Leaves develop interveinal yellowing-necrosis; plant die. | Check with Ed Sikora. |
| St. Augustine | Brown Patch (<i>Rhizoctonia</i>) | See Centipede. | See Centipede. |
| | Gray Leaf Spot | Gray colored irregular spots on leaves. Spots may have a dark brown edge. | Sanitation -- mowing. See ANR-621. |
| | Take-All Patch (<i>Gaeumannomyces</i>) | Black decay areas on stolons and roots. Yellowing and dying of plants. | See AL Pest Management Handbook and ANR-823. |
| Strawberry | Botrytis Fruit Rot | Fruit tissue becomes brown and watery, decayed. A gray mold may develop on fruit surface. | Sanitation. See the AL Pest Management Handbook. |
| | Phomopsis Blight | Leaves develop small red-purple spots that become large zonate spots and later, large V-shaped lesions. | See the AL Pest Management Handbook under 'Leaf Blight'. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|--------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| | Phytophthora Root & Crown Rot | Crows and roots become brown and soft-rotted. Plants develop yellowed lower leaves, dieback, and wilt. | See the AL Pest Management Handbook and ANR-906. |
| Sweet Potato | Black Rot (<i>Ceratocystis</i>) | Gray-black, slightly sunken lesions or blotches. Underlying tissues between periderm and vascular system become black, firm, dry. | See AL Pest Management Handbook. |
| | Fusarium Surface Rot (<i>F. oxysporum</i>) (A Storage Decay) | Surface lesions are initially circular, light-dark brown, firm and dry. Decay usually stops at the vascular ring. Roots with lesions in storage may become shrunken and hardened. | Avoid wounding roots; harvest when soils are dry and temperatures are above 55°F. Follow proper curing procedures. |
| | Fusarium Root Rot (<i>F. solani</i>) (Primarily a Storage Decay) | Symptoms often appear similar to Fusarium surface rot except that lesions and decay will extend beyond the vascular ring. If infected roots are planted, the fungus may spread into the sprout causing a stem canker. | Avoid wounding roots. See comments above for Fusarium surface rot. Do not take cuttings from infected roots. |
| | Scurf (<i>Monilochaetes</i>) | A superficial brown-black spotting and blotch of the storage root periderm. | See the AL Pest Management Handbook. |
| Tomato | Anthracoze (<i>Colletotrichum</i>) (Usually, a Ripe Fruit Disease) | Lesions are colorless, circular, slightly sunken and may develop to a size of ½ inch (1.2 cm). Just below the skin, there is a thin layer of white, dry tissue. The center of the lesion may become black, and orange spore masses may develop during moist conditions. | See the AL Pest Management Handbook. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|--------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| | Bacterial Speck (<i>Pseudomonas</i>) | Immature, green fruit tissue is most susceptible. Small (1 mm diam.), slightly raised black specks develop on green or ripe fruit. Spots on leaves & stems are small (2-3 mm or $\frac{1}{8}$ inch or less diam.), angular, black, water-soaked with no halo. Leaf spots may coalesce and some leaf tearing may occur. | See the AL Pest Management Handbook. |
| | Early Blight (<i>Alternaria</i>) | On seedlings, rapid plant death may occur as a result of crown rot. On older plants, spots occur on leaves, stems, fruits. Leaf spots usually occur first on oldest leaves. These spots are circular, brown, up to $\frac{1}{2}$ inch or 1.2 cm diameter with a target board patterns of concentric rings. Spotted leaves become yellow and then brown. Fruit spots are brown-black, up to 2.4 cm or 1 inch in diameter, firm, depressed, usually with concentric rings. Typically fruit spots develop at the stem end of the fruit. | See the AL Pest Management Handbook. |
| | <i>Fusarium solani</i> Damping-Off | Seedling lower stem rot. | Sanitation. |
| | Gray Wall (Blotchy Ripening) (Environmental Stresses Involved) | Green fruit has gray-brown blotches; internal wall tissue is brown. As fruit ripens, brown blotches become yellow on the reddish fruit. | Remove stress situations. Avoid high nitrogen levels and low potassium levels. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|--------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Turnip | Powdery Mildew | Foliage develops faint white dusty patches which later become necrotic. | --- |
| | Pythium Root Rot | Roots become light brown and water-soaked; roots easily pull apart. | Sanitation - remove damaged plants; reduce water levels in the soil. See the AL Pest Management Handbook. |
| | Target Spot (<i>Corynespora</i>) | Gray-brown, zonate, oval leaf spots. | Sanitation. See Ed Sikora. |
| | Alternaria Leaf Spot | Gray-brown leaf spots, irregular in shape. | See the AL Pest Management Handbook. |
| | Black Rot (<i>Xanthomonas campestris</i> pv. <i>campestris</i>) | Leaf edges develop V-shaped brown-black lesions. Leaf veins darken near lesions. Eventually, lower stems develop soft rot. | Sanitation. Rotate away from cole crops for 2-3 years. |
| | Cercospora Leaf Spot | Light brown irregularly-shaped spots (about 0.6 cm or ¼ inch diameter) sometimes with a darker brown margin. | See the AL Pest Management Handbook. Also, Benlate recently obtained a label for Cercospora on turnips. |
| Wheat | Pythium Root Rot | Roots become brown and water-soaked. | Reduce irrigation, if possible. Improve soil drainage. Crop rotation for 1 year. |
| | <i>Bipolaris sorokiniana</i> Leaf Spot | Brown elongated spots and strips on leaf blades. | See AL Pest Management Handbook. |
| | Leaf Rust (<i>Puccinia recondite</i>) | Orange-red dots and patches of spore masses on leaves. Plants yellow and show poor growth/head production if infection is severe. | See AL Pest Management Handbook. |

| <u>Plant</u> | <u>Disease</u> | <u>Description</u> | <u>Control</u> |
|-----------------|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Willow, Weeping | Cercospora Leaf Spot | Round or irregular, brown leaf spots. | Sanitation of leaves in the fall. See the AL Pest Management Handbook. |
| Zoysia | Brown Patch (<i>Rhizoctonia</i>) | Leaf blades and sometimes crowns become blighted and decayed. Often, patches of brown foliage develop in lawn area. | See AL Pest Management Handbook and ANR-492. |
| | Ring Nematode (<i>Criconemoides</i> sp.) | Areas of the lawn develop spots with yellowing and thinning. | See ANR-523. |
| | Rust (<i>Puccinia</i>) | Orange powdery dusting (spores) gives an orange tint over green or green-yellow blotched leaves. | See AL Pest Management Handbook. |
| | Take-All (<i>Gaeumannomyces</i>) | Yellowing and die-back. Roots develop black lesions. | See ANR-823. |