



NOVEMBER 2006



HOMEOWNER PLANT DISEASE CLINIC REPORT

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First of all, I want to thank all the county agents and other extension personnel for all the wonderful comments I received regarding the inaugural monthly homeowner report started in October. It seems as though something of this nature was long overdue. And I will continue to welcome any suggestions and/or comments regarding upcoming monthly reports (email: hthornto@uga.edu). As before, this report will contain a table summarizing the homeowner samples processed in the plant disease clinic over the last month, including the county location for each sample, and plant disease tips for the month of December.

As most of you know, the Plant Pathology Department is now only accepting physical homeowner samples that have been processed through the DDDI system prior to arrival. Although only a handful of county agents have submitted samples correctly through the DDDI system, we hope that by the end of November all homeowner physical samples will be entered into the DDDI system and the completed printed form sent with the sample. This system allows me to track when samples are sent to the clinic and results in a more timely response (diagnosis and recommendation) to be returned to you, and therefore, the homeowner. Instructions on how to submit samples online through the DDDI system are included at the end of this report.

This report will contain information on plant disease samples received from mid-October through mid-November 2006.

County	Plant	Common Name of Disease (Pathogen)
Appling	Viburnum	No disease
Bartow	Arborvitae	No disease – drought & transplant stress
Bartow	Leyland cypress	Seiridium canker (<i>Seiridium</i> sp.)
Bartow	Apple	Sooty blotch (<i>Gloeodes pomigena</i>) & Fly speck (<i>Zygothiala jamaicensis</i>)
Bibb	St. Augustine	Take-All (<i>Gaeumannomyces graminis</i>)
Bibb	St. Augustine	Take-All (<i>G. graminis</i>)
Clarke	Daphne	No disease on leaves – possible root problem

Columbia	Asiatic jasmine	Root rot (<i>Pythium</i> sp.)
Columbia	Wax myrtle	Fusarium wilt (<i>Fusarium</i> sp.)
Fayette	Camellia sasanqua	No disease
Fulton	Ivy	No disease – oedema – too wet
Harris	St. Augustine	No disease – cultural
Jefferson	St. Augustine/Centipede	Take-All (<i>G. graminis</i>)
Lee	Centipede grass	Take-All (<i>G. graminis</i>)
Monroe	Leyland cypress	Seiridium canker (<i>Seiridium</i> sp.)
Morgan	Deodar cedar	No disease – possible root stress
Morgan	Holly (Inkberry)	Root rots (<i>Rhizoctonia</i> & <i>Pythium</i>)
Muscogee	Maple	No disease-cultural – too wet
Newton	Bradford pear	Wood rot mushroom (Polypore)
Randolph	Mustard green	Alternaria leaf spot (<i>Alternaria</i> sp.)
Richmond	St. Augustine	Take-All (<i>G. graminis</i>)
Rockdale	Centipede grass	No disease – environmental – too dry
Spalding	Centipede grass	No disease – environmental – too dry
Spalding	Bermuda grass	Rust (<i>Puccinia</i> sp.)
Ware	Azalea	No disease – too wet/too dry (extensive algae)
Ware	Centipede grass	No disease – overwatering
Webster	St. Augustine	Large Patch (<i>Rhizoctonia solani</i>) & ETRIF*

*ETRIF: Ectotrophic root-infecting fungi



DISEASE of the MONTH

WOOD ROTS

This month I decided to focus on common wood rots of both hardwoods and conifers seen in Georgia. Wood rots are caused by several different fungal organisms. They are primarily wound colonizers and can grow in and on both living and dead trees under moist conditions. Virtually any type of wound that exposes the inner wood tissue, such as pruning cuts, ice or wind damage, mowing or weed whacker damage, construction damage, insect wounds, damaged roots, and more, will predispose the tree to attack by any of the wood-rotting fungi. Wood rots spread from these initial infection sites to the heartwood or sapwood of the tree causing discoloration, disintegration, and eventual decay and death of the tree. This process of decay may take anywhere from 3 to 5 years to more than 100 years. Wood rots are classified depending on the part of the tree attacked, i.e. root and butt rots or stem rots. There also are white rots and brown rots, and soft rots. The white rots will most often attack hardwoods (deciduous trees) and utilize lignin as a food source and leave behind the cellulose. Affected wood is soft and spongy in texture. The brown rots will attack mostly softwoods (conifers) and digest cellulose leaving behind the lignin of the cell walls, resulting in a dry rot that crumbles under pressure.

Oftentimes the only indication of a wood rot occurs when major limbs and entire trees are blown-down during heavy wind and rain storms. Symptoms of trees colonized by wood rots include a gradual decline in vigor, sparse foliage, dieback of twigs and branches, which are structurally weak and eventual death of the tree. Wood rots predispose the trees to secondary colonization by other microorganisms and insects. It is very important to note that the fungal fruiting structures (conks or mushrooms), which are seen at the trunk base or wound site, can not be used as predictors to estimate when the tree will die. Although the mushrooms usually do not appear until the decay is well advanced, it does not indicate the tree will die immediately. Most wood rots form conks annually. However, these can become inconspicuous as they darken and harden with age resembling the surface roots of the tree (see the *Inonotus* image below). Trees can live many, many years with wood rot fungi, depending on the extent of colonization by the fungus, the size of the tree, the response of the host tree to the wound (quick healing), the presence of antagonists to the fungus involved, and additional factors related to the general health of the tree (location, proper installation and care, etc).

The following are images of common wood rots seen throughout Georgia.

Inonotus dryadeus (weeping conk fungus) – causes a white rot of roots on living oak trees & rot of dead trees and logs



Close-up of fresh *Inonotus dryadeus* conk on pin oak roots

Inconspicuous older conk of *Inonotus dryadeus*



Ganoderma curtisii – root and basal rot in conifers and hardwoods



Images by: Dr. David Porter



Ganoderma lucidum (artist's conk) – causes a root and basal rot in conifers and hardwoods



Grifola frondosa (Hen of the Woods) – white butt rot in conifers and hardwoods

Images by: Dr. David Porter



Hericium erinaceus (Lion's Mane) – parasitic on hardwoods (esp. Oak)

Heterobasidion annosum – parasitic on living conifers; root and butt rot; most damaging and severe root pathogen on pines in the South.



Management for wood rots in infected trees is extremely limited. The tree will eventually die from the fungal infection but there is no definite time period for when this will occur; it could be months, but more often it is many, many years. Conks or mushrooms of the fungal pathogens will reappear from year to year around the same time. Management, therefore, should be aimed at the following cultural practices to prevent infection from occurring:

- 1) Select and grow trees suitable for a particular site and/or area. Plant vigorous, disease-free stock; plant at the proper depth and in well-drained soil.
- 2) Mulch around trees to limit grass growth directly beside trees and therefore, potential hazards and/or injuries that could result from mowing or edging the lawn.
- 3) Provide adequate irrigation and fertilization to keep the trees in good health.
- 4) Prune young trees to promote good structure and to prevent the need to remove large limbs from older trees (which leaves large wounds for subsequent infections).
- 5) Remove all dead, dying, or diseased branches during the dormant season by making proper pruning cuts (prune outside the branch bark ridge, leaving the 'collar' that surrounds the base of each branch to aid in wound healing).
- 6) In general, AVOID wounding the trees at all costs. This will prevent the entrance and colonization by the wood-rotting fungi.

INSTRUCTIONS for SUBMITTING 'HOMEOWNER' SAMPLES ON-LINE through the DDDI SYSTEM:

- 1) Go to the DDDI homepage: <http://www.dddi.org/uga/>.
- 2) Log on with your username & password. If you do not have one, request an account.
- 3) Once logged on, look under the heading 'Submit a Sample', find and click on the 'Plant Pathology' category, then click on 'Physical Plant Pathology Homeowner'.
- 4) Enter information for all required fields (indicated in red or with an asterisk*).
- 5) It is important to note here: **you must also select your name from the County Agent drop-down list**. Otherwise, the system defaults to Jeff Aaron, who happens to be the first agent on the list.
- 6) When completed correctly and completely, a five-digit sample number will be generated. **This sample number is important for us to track the homeowner sample in the system.**
- 7) Print the report associated with the sample number.
- 8) Place this report with the physical sample in the appropriate size box or container. Instructions on shipping samples can be found at our departmental webpage, in the GA Pest Management Handbook, or at: <http://www.plant.uga.edu/Extension/Clinics/tips.htm>.
- 9) Ship to:
Plant Disease Clinic
Attn: Holly Thornton
UGA Plant Pathology Department
2106 Miller Plant Sciences Building
Athens, GA 30602-7274

