



## HOMEOWNER PLANT DISEASE CLINIC REPORT

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As the drought worsens throughout the state (moderate to extreme categories in most parts of Georgia), plant disease pressure is low, as is expected. And plant diseases are the least of most people's worries at this point. For the month of May, we have received and diagnosed a total of 84 samples (both commercial and homeowner). The total number of samples for May 2004-06 was 412, 333, and 181, respectively. Total plant disease samples for 2006 were lower because the homeowner clinic was closed during that month. So although the month is not yet over (about 1 ½ weeks remaining), we are well behind previous years in terms of plant samples submitted for diagnosis.

The table below represents Homeowner plant samples submitted to the diagnostic clinic in Athens for diagnosis from late-April to late-May. The disease of the month for May is Powdery Mildew. (I know most people are familiar with this disease but I still get calls and questions about it).

County	Plant	Common Name of Disease (Pathogen)	Type of Sample – DDDI or Physical
Bacon	Centipede	Cultural	Physical
Baker	Unknown – houseplant	Cultural – watering incorrectly	DDDI
Baldwin	Bunch grape	Gall midge ( <i>Contarinia johnsoni</i> )	Physical
Barrow	Fescue sod	No disease	Physical
Bibb	Centipede	Large Patch ( <i>Rhizoctonia solani</i> )	Both
Bibb	Centipede	No disease – cultural	Physical
Bibb	Centipede	No disease – cultural	Physical
Bibb	Centipede	No disease – cultural	Both
Bibb	Magnolia	Algal leaf spot ( <i>Cephaleuros virescens</i> )	DDDI
Bibb	St. Augustine	Take all ( <i>Gaeumannomyces graminis</i> ) and Cultural	Both
Bibb	St. Augustine	Take all ( <i>G. graminis</i> ) and Cultural	Physical

Bibb	Centipede	No disease – cultural	Physical
Bibb	Pachysandra	Possible fungal disease	DDDI
Bibb	Pachysandra	Stem lesion – <i>Rhizoctonia</i> sp.; Leaf spot – <i>Volutella</i> sp.; Foliage – scale	Physical
Bibb	Centipede	Take all ( <i>G. graminis</i> ) and cultural	Physical
Bibb	Centipede	Take all ( <i>G. graminis</i> ) and cultural	Physical
Bibb	Centipede	Take all ( <i>G. graminis</i> ) and cultural	Physical
Candler	Centipede	Take all ( <i>G. graminis</i> ) and cultural	Physical
Carroll	Zoysia	Large Patch ( <i>Rhizoctonia solani</i> )	Physical
Clarke	Leyland Cypress	No disease – possible cold stress & drought	Physical
Clarke	Redbud	No disease – possible burn & incorrect watering	Physical
Cobb	Centipede	Cultural & scale infestation in crown	Physical
Columbia	Snapdragon	Rust ( <i>Puccinia</i> sp.)	DDDI
Dougherty	Centipede	Take all ( <i>G. graminis</i> )	Physical
Effingham	Centipede	No disease – cultural	Physical
Fayette	Zoysia	No disease – cultural	
Fayette	Centipede	Possible Fairy Ring	Physical
Fayette	Bermuda – hybrid	Large Patch ( <i>R. solani</i> )	Physical
Fayette	Zoysia	Cultural problems & <i>Bipolaris/Curvularia</i>	Physical
Forsyth	Spruce	Possible <i>Cytospora</i> canker	DDDI
Fulton	Boxwood	Unable to determine – likely cultural	DDDI
Greene	Centipede	Likely Cultural/Environmental	DDDI
Greene	Centipede	No disease – cultural	Physical
Hall	Juniper	Unable to determine	Physical
Irwin	Onions	Possible fungal disease/rot	DDDI
Jenkins	Petunia	Possible <i>Botrytis</i> blight	DDDI
Laurens	Indian Hawthorne	No disease	DDDI
Macon	Daylily	Possible Bacterial soft rot or <i>Rhizoctonia</i> crown rot	DDDI
Macon	Magnolia	Cultural	DDDI
Monroe	Centipede	Large Patch ( <i>R. solani</i> )	Physical
Morgan	Gardenia	Compounded stresses – cold	DDDI

		damage, nutrition, possible root rot	
Morgan	Hollyhock	Rust ( <i>Puccinia malvacearum</i> )	DDDI
Muscogee	Zoysia	Unable to determine	DDDI
Muscogee	Maple	Anthraco nose ( <i>Gloeosporium</i> sp.)	Both
Muscogee	Japanese Flowering Tree	Unable to determine	Physical
Muscogee	Cleyera	Cultural	DDDI
Pierce	Centipede	Large Patch ( <i>R. solani</i> ) & heavy thatch	Physical
Pulaski	Azalea	Possible <i>Botryosphaeria</i> dieback	DDDI
Troup	Camellia japonica	No disease on leaves submitted	Physical
Troup	Bermuda – hybrid	Large Patch ( <i>R. solani</i> ) & cultural	Physical
Upton	Zoysia	Large Patch ( <i>R. solani</i> ) & heavy thatch	Physical
Wilkes	Camellia sasanqua	Leaf gall ( <i>Exobasidium</i> )	DDDI

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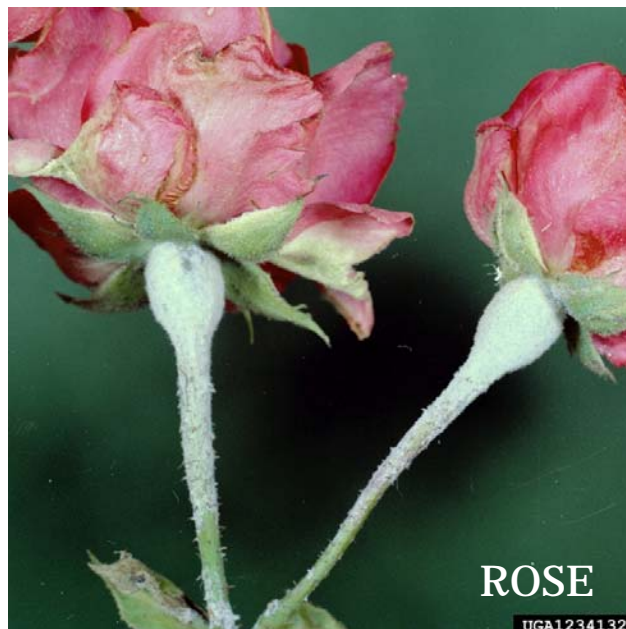
## POWDERY MILDEW

Powdery mildew is a well-known pathogen in most landscape settings. Most homeowners quickly learn about powdery mildew and want to eliminate it as soon as possible, as it can be somewhat unsightly. **Generally, this disease causes little harm to the plants it infects and rarely causes death to plants.** The interesting thing is, although powdery mildew may be on various different plants in a landscape at once (roses, phlox, crape myrtle, fruit trees, oaks, etc.), the fungi infecting these plants are all different organisms. Powdery mildew fungi are very host-specific and the most commonly seen powdery mildew fungal genera are: *Erysiphe*, *Sphaerotheca*, *Phyllactinia*, *Microsphaera*, *Podosphaera*, and *Uncinula*. Most often, the conidial stage, the genus *Oidium*, is seen in the landscape on various hosts.

Most ornamental plants are subject to infection by this obligate parasite. The host list for powdery mildew is very long (~10,000 species of plants). Some of the common hosts (both woody and herbaceous) here in Georgia are: azaleas, dogwood, oaks, euonymus, honeysuckle, lilac, privet, roses, maple, sycamore, viburnums, chrysanthemums, dahlias, delphiniums, kalanchoes, phlox, begonias, snapdragons, and zinnias. Powdery mildew can also be a problem on vegetables, fruits, and nuts. The fungus can infect various plant parts including: leaves, stems, fruits, and flowers.

**Symptoms** of powdery mildew infection are the same regardless of the host plant involved. Superficial white or gray powdery fungal growth will appear over affected plant parts. The patches of white powdery growth can be on one or both sides of leaf surfaces.

Infected leaves may have yellow or purple spots at times when the fungus is not actively producing spores. Severe infections can result in dry, brown, shriveled up leaves and plant parts. Leaves may drop off the plant and fruit and flowers may become distorted.

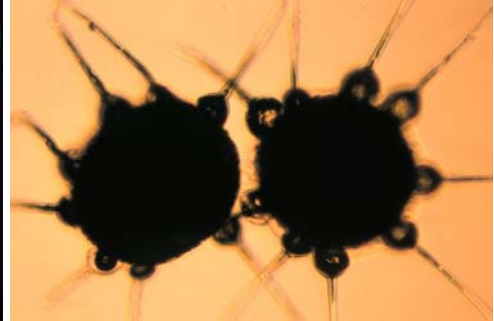
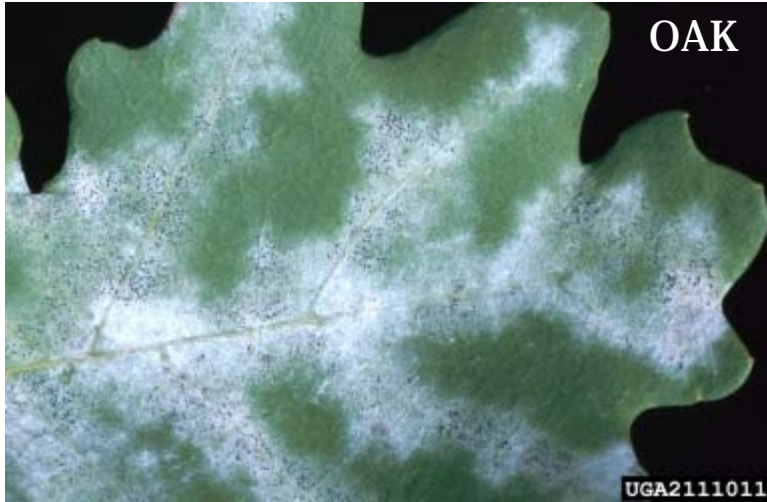


Unlike most other fungal pathogens that require free moisture to germinate and infect plant tissues, spore germination and infection for powdery mildew fungi is **decreased** in the presence of free moisture on the plant surface. Some powdery mildew infections are most severe when relative humidity is low (50 to 70%), but this is variable; other powdery mildew fungi will infect when relative humidity is high (~85%).

This disease tends to be more a problem in drier places. When rainfall increases, the incidence of this disease decreases! (I chose this disease for the month of May because it has been so dry, and I feel like we are going to see more and more of this pathogen if temperatures continue to remain somewhat mild with no chance of rain).

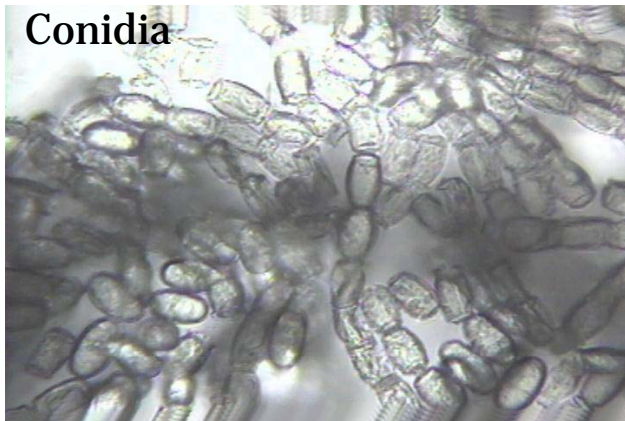






The black dots on this infected oak leaf (above) are cleistothecia (shown to the right) – the fruiting structures of the sexual stage of the disease. They are pinhead-sized, spherical structures that turn from white to black, with age. Inside those structures, sexual spores are produced.

Most often, as stated earlier, the asexual stage of the disease will be found on infected plants and the spores will resemble the cylindrical, single-celled, barrel-shaped spores shown below.



Signs on Pecan & Apple (shown below):



In terms of **environmental conditions** that favor the disease development and spread, moderate temperatures (60 to 80 °F – warm days & cool nights), high humidity, and drier weather all promote the occurrence of this disease. Overcrowding and shading will also promote the incidence of powdery mildew infections. Therefore, one will more than likely not see this disease during Georgia summers in a landscape setting.

The fungal pathogen overwinters/survives in infected plant parts that remain on the plant and on fallen debris.

## **MANAGEMENT:**

### Cultural

- 1) Purchase resistant varieties if available!!!! (#1 way to manage disease).
- 2) Prune out diseased tissues, remove dead tissues, and rake and remove any fallen plant tissues (leaves, woody tissue, etc.). (This is the source of survival for the fungus).
- 3) Maintain healthy plants – includes good air circulation around and within the plants, good soil drainage, proper watering practices (morning, 8-12” deep, avoid wetting foliage, and especially during times of drought).

### Chemical – generally not necessary

- 4) Begin sprays as soon as disease is detected.
- 5) Spray on a regular basis.
- 6) Preventative sprays work best.
- 7) Good coverage is important (both sides of the leaves & all leaves).
- 8) Active ingredients: Triadimefon, Myclobutanil, Thiophanate-methyl, sulfurs, and coppers.

## **REFERENCES:**

- 1) Agrios. 2005. 5<sup>th</sup> edition.
- 2) Ohio State Fact Sheet - <http://ohioline.osu.edu/hyg-fact/3000/3047.html>.
- 3) Images – Bugwood ([www.invasive.org](http://www.invasive.org)).
- 4) J. Williams-Woodward. UGA – Plant Pathology Extension Website.