THE UNIVERSITY OF GEORGIA
COOPERATIVE EXTENSION
Colleges of Agricultural and Environmental Sciences & Family and Consumer Sciences

August 2008

HOMEOWNER PLANT DISEASE CLINIC REPORT

Holly Thornton, Homeowner IPM Specialist

With fall rapidly approaching, I am excited about cooler temperatures, college football, and reduced plant sample submission. During the fall, I usually travel quite a bit across the state giving presentations to Master Gardeners, Extension Agents, and commercial landscapers. Therefore, I do not have much time to spend in the diagnostic clinic. Sample numbers may not drop dramatically though until late October given the recent rains throughout the state. Be on the lookout for signs of excessive moisture in landscape situations – folks forgetting to turn off sprinklers during the recent downpours, standing water, drainage issues. These situations can all lead to root rot diseases and general decline in many landscape plants.

Below you will find the table of samples submitted to the diagnostic clinic in Athens, along with the disease of the month, which is *Cercospora* leaf spot of hydrangea. ENJOY!

August 2008 Homeowner Samples

County	Plant	Common Name of Disease (Pathogen)	Type of Sample – DDDI or Physical
Bacon	Gogi berry	Anthracnose (*Colletotrichum* sp.)	Physical
Bartow	Red tip	Possible chemical damage	DDDI
Bartow	Tree	Sooty mold	DDDI
Ben Hill	Blue Star Creeper	No disease	Physical
Bibb	Confederate Jasmine	Armillaria root rot (*Armillaria* sp.)	Physical
Bibb	Mushroom	Fungal heart rot – unknown	DDDI
Camden	Canary Island Date Palm	Pestalotiopsis leaf spot (Pestalotiopsis sp.); False Smut (Graphiola sp.); Spider mites	Physical
Camden	St. Augustine	Take all root rot (*Gaeumannomyces graminis* var. *graminis*); chinch bugs	Both
Catoosa	Peach fruits	Possible Peach Scab & water	DDDI

County	Plant	Common Name of Disease (Pathogen)	Type of Sample – DDDI or Physical
		stress	
Clarke	Japanese Maple	Possible frost cracks	DDDI
Clarke	Mushroom	Possible *Spongipellis* sp.	Both
Cobb	Juniper – Blue Pacific	Cultural – very dry	Both
Cobb	Tomato	Possible herbicide damage	Both
Coffee	Crape Myrtle & Red Maple	Unable to determine	DDDI
Cook	Juniper	No disease	Physical
Coweta	Red Oak	Burn & insect damage	DDDI
Coweta	Okra, Cantaloupe, Beans	Some sort of burn	DDDI
DeKalb	Arborvitae	Bot canker (*Fusicoccum* sp.) & root stress	Physical
DeKalb	Tomato	Fusarium wilt (*Fusarium* sp.)	Physical
Dooly	Bradford pear	No disease	Physical
Dooly	Pear & Leyland Cypress	Pear – possible burn; Leyland – no disease	Physical
Dougherty	Unknown shrub	Armillaria root rot (*Armillaria* sp.)	Physical
Dougherty	St. Augustine	Take all root rot (*G. graminis*) & Large Patch (*Rhizoctonia* sp.)	Physical
Dougherty	St. Augustine	Take all root rot (*G. graminis*)	Physical
Dougherty	Zoysia grass	Cultural problems (excess thatch) & ETRI fungi	Physical
Elbert	African Violet	Possible cold water damage	DDDI
Elbert	Apples	Possible White or Bot rot	DDDI
Evans	Centipede	Fungal polypore – unknown	Physical
Fayette	Knock-out Rose	Unable to determine – plant root ball dead	Physical
Fayette	Ilex crenata	Unable to determine	DDDI
Fayette	Bermuda	Unable to determine	DDDI
Fulton	Bermuda	Unable to determine	DDDI
Fulton	Osmanthus	Scale and/or fungal leaf spot	DDDI
Fulton	Azalea (bonsai)	No disease	Physical
Fulton	Fern	Unable to determine	DDDI
Grady	Weigala, Fig, Japanese Magnolia	No disease – likely herbicide damage to all	Both
Gilmer	Bean	Unable to determine	DDDI
Greene	Pear	Fire blight (*Erwinia amylovora*)	Physical
Greene	Maple	Unable to determine	DDDI
Gwinnett	Zoysia	Possible drought stress	DDDI
Gwinnett	Anise	Possible scorch	DDDI

County	Plant	Common Name of Disease (Pathogen)	Type of Sample – DDDI or Physical
Gwinnett	Knock-out Rose	Black spot (*Diplocarpon rosae*); Dieback – root rot/canker	DDDI
Gwinnett	Tomato	Unable to determine	DDDI
Gwinnett	Japanese Maple	Leaf spot (*Phyllosticta* sp.) & burn	DDDI
Harris	Emerald Zoysia	Take all root rot (*G. graminis*); Large Patch (*Rhizoctonia* sp.); Cultural – overwatering & thatch	Physical
Harris	Zoysia	Take all root rot (*G. graminis*)	Physical
Henry	Cucumber	No disease – some sort of burn	Both
Henry	Bermuda	Cultural issues – thatch & compaction; Chinch bugs	Both
Henry	Bermuda	Cultural issues – thatch & mowing height	Both
Henry	Bermuda	Take all root rot (*G. graminis*)	Both
Henry	Muscadine	No disease	Both
Henry	Cherry tree	Unable to determine	DDDI
Henry	Bermuda	Possible Fairy Ring (clamp connection fungi); minor Large Patch (*Rhizoctonia* sp.)	Both
Jasper	Raspberries	Unable to determine	DDDI
Jasper	St. Augustine	Slime mold	DDDI
Jasper	St. Augustine	Take all root rot (*G. graminis*)	Physical
Laurens	Bradford pear	No disease	DDDI
Laurens	Galls (at base of pear)	No disease – woody tissue	Both
Lee	Elm trees	Cultural stress – buried too deep	DDDI
Macon	Vinca	Aerial blight (*Phytophthora* sp.); Root rot (*Rhizoctonia* sp.)	Both
Monroe	Centipede	Possible Fairy Ring (clamp connection fungi)	Both
Muscogee	Emerald Zoysia	Possible burn; minor Large Patch (*Rhizoctonia* sp.)	Both
Muscogee	Zoysia	ETRI (ectotrophic root infecting fungi); cultural – thatch & overwatering	Physical
Newton	Centipede	Unable to determine	DDDI
Paulding	Zoysia	Unable to determine – possible fairy ring	DDDI
Peach	St. Augustine	Possible Fairy Ring (clamp connection fungi)	Physical
Schley	Apple	Possible Bot canker (*Botryosphaeria* sp.)	DDDI

County	Plant	Common Name of Disease (Pathogen)	Type of Sample – DDDI or Physical
Schley	Dogwood	No disease – leaf scorch	DDDI
Thomas	Hydrangea	Leaf spot or Anthracnose (*Cercospora* or *Colletotrichum*)	DDDI
Troup	Tea Olive	Anthracnose (*Colletotrichum* sp.)	Physical
Walker	Fescue	Unable to determine	DDDI
Walton	Mushroom	Unknown gilled mushrooms	DDDI
Ware	Centipede	Minor Take all root rot (*G. graminis*)	Physical
Ware	Centipede	Take all root rot (*G. graminis*); Cultural – mowing height & thatch	Physical
Ware	Centipede	ETRI (ectotrophic root infecting fungi) – roots; Cultural – dry & thatch	Physical
Whitfield	Peach tree	Gummosis	DDDI
NA	Watermelon	Leaf spot (*Cercospora* sp.) & water stress	Physical
Total samples (mid-July to mid-August) = 77 DDDI = 35 Physical = 27 Both = 15			

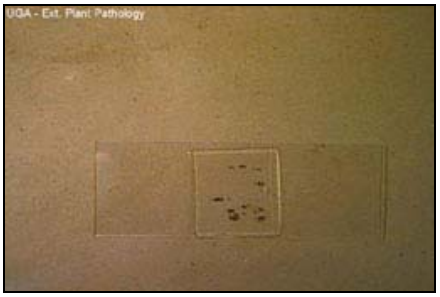
Cercospora leaf spot on Hydrangea

There are many fungal leaf spot pathogens that affect a very wide range of host plants. One very common leaf spot on hydrangea is *Cercospora* leaf spot caused by the fungal pathogen, *Cercospora hydrangeae*. This fungal leaf spot can affect most hydrangeas and is generally an aesthetic issue for homeowners. The pathogen will rarely kill the plant but can reduce plant vigor by defoliation. It is generally more problematic in low maintenance landscape situations or when homeowners overhead irrigate their plants.

Depending on the type of hydrangea (oakleaf, bigleaf, etc.), the leaf spot symptoms may vary. Spotting generally begins at the base of the plant on older leaves and works its' way up the plant. The spots are generally small, circular, and scattered across the leaf surface. They tend to have tan centers and dark brown or purple borders (see images). The leaf spots can oftentimes be irregular or angular shaped.

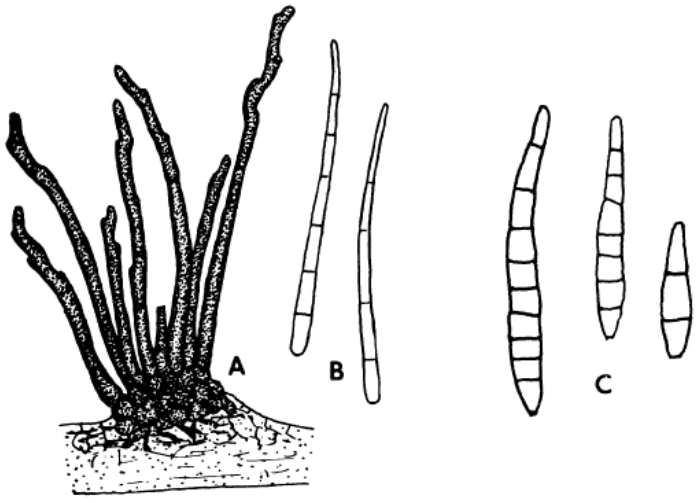
Verifying the presence of this particular fungal pathogen is very straightforward.

1. Place the leaf under the dissecting scope;
2. Look for the presence of tiny black structures within the tan/black/purple leaf spots;
3. Using your scalpel, pick several of those tiny black structures and place on a prepared microscope slide (place a small droplet of water or acid fuschin on the center of the slide);
4. Place a coverslip over the droplet (see below);



5. Using the compound microscope, search for spores of the fungal pathogen (see below).

Cercospora sp. conidia generally vary in size, but are usually hyaline (clear) elongated (filiform) and several-celled. The conidia are borne on dark, clustered conidiophores that appear to burst out of the leaf spots. Below are drawings of the fungal conidia from the Illustrated Genera of Imperfect Fungi (4^{th} edition).



CERCOSPORA

Once the presence of this fungal disease is verified, it is important to stress to the homeowner the following about the survival and management of this fungal pathogen:

- The fungus survives in fallen diseased leaves that remain on the ground. Therefore, **sanitation** to remove the dying and diseased leaves will help prevent subsequent infections or outbreaks.
- The conidia of the fungus are **spread by splashing water**. This can be from rain, which is impossible to control, or from overhead irrigation. It is important to minimize the amount of leaf wetness. If at all possible, install soaker hoses or drip irrigation to prevent water-splash on the leaves. If your lawn irrigation system just barely hits the hydrangeas, then, yes, this will be problematic and can create an environment that supports the reproduction and growth of this fungal pathogen. Late summer rains can also perpetuate this disease.
- In severe cases, as previously mentioned, defoliation can occur, which reduces vigor and growth of the plant.
- Fungicide applications are rarely warranted due to the fact that the symptoms usually do not appear until late summer. Protectant fungicides are available for homeowners who just have to spray something or for severe cases of this fungal leaf spot. They include (listed by active ingredient): Chlorothalonil, Myclobutanil, Mancozeb, and Thiophanate-methyl. Begin spraying when spotting is first seen and follow the label for repeat applications (usually every 10-14 days).

REFERENCES:

- Illustrated Genera of Imperfect Fungi. 4th edition. Barnett and Hunter.
- Diseases of Hydrangea. ACES Publication. ANR-1212. 2001.