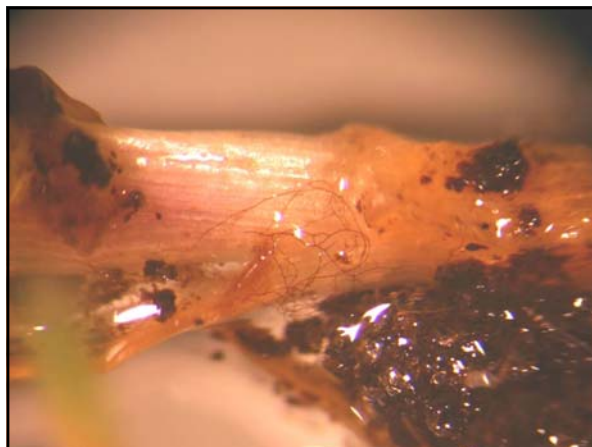
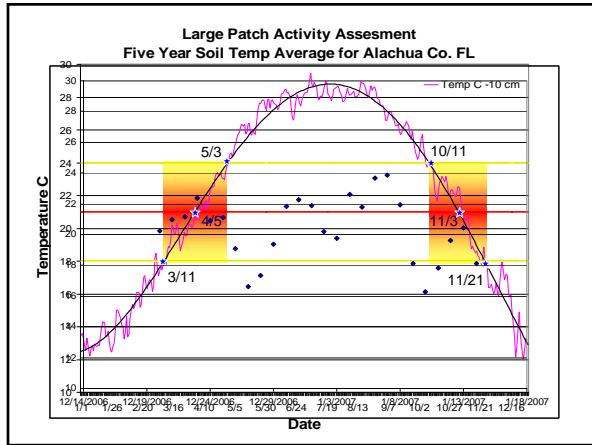
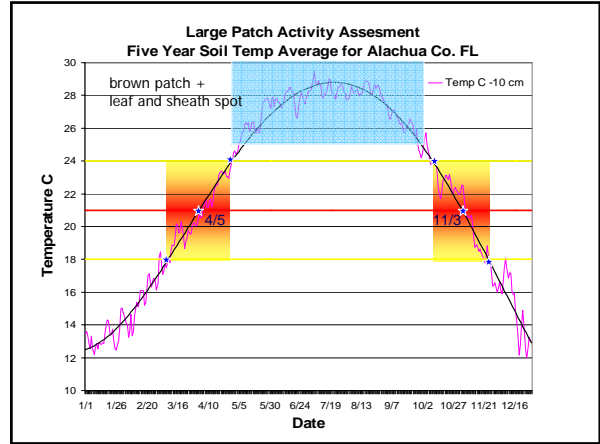


Disease Management in Florida Zoysiagrass

Florida Turfgrass Association
Conference and Show 9/07

Phil Harmon
Assistant Prof. and Extension Specialist
Plant Pathology Dept., UF Gainesville





Zoysiagrass large patch trial 2006

Trt #	Fungicide	Rate oz/M	vol gal/M	interval	sprays
1	Untreated				10/12, 11/9
2	Insignia 20 WG	0.9	0.5	28	10/12, 11/9
3	Insignia 20 WG	0.9	2	28	10/12, 11/9
5	Heritage TL	2	2	28	10/12, 11/9
6	Heritage TL	1	2	28	10/12, 11/9
7	Heritage 50 WG	0.2	2	28	10/12, 11/9
8	Heritage 50 WG	0.4	2	28	10/12, 11/9
9	Endorse	4	2	14	10/12, 10/26, 11/9
10	Cleary's 3336 +	4	2	21	10/12, 11/1





Characterization of Turfgrass *Rhizoctonia* spp.

- Cooperative project directed by Lawrence Datnoff
- Student is Norma Flor
- Morphological and molecular methods

Bipolaris Leaf Spot Melting Out

Systemic

- strobilurins
- DMI's
- dicarboxamides

Contact

- fludioxonil
- mancozeb
- chlorothalonil

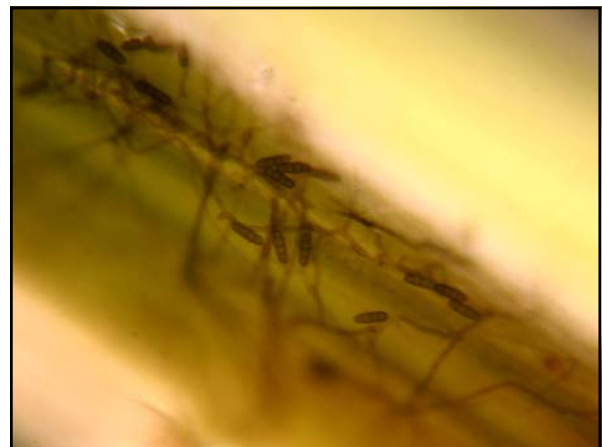
Cultural

- Potassium fertilizers
- limit leaf wetness
- thatch reduction

Problematic:

On bermudagrass and zoysiagrass in summer causes small purple patches, can be severe

In fall and winter "melting out" occurs involves crown rot



Take-all, Bermuda Decline

Systemic

- azoxystrobin
- thiophanate-methyl
- pyraclostrobin
- myclobutanil
- triadimefon
- propiconazole

water products in with 0.25" of water

can have negative effect on turf, use preventative rates only once per season, do not use propiconazole on putting greens summer

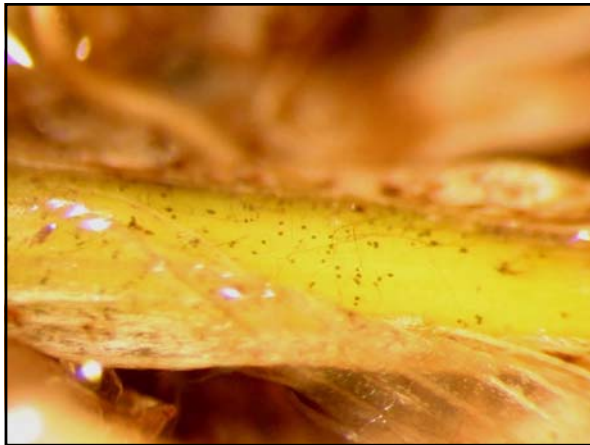
Problematic:

On St. Augustinegrass sod and bermudagrass golf greens in summer

Disease worst where other stresses exist

Often occurs in a complex with damaging nematode pops., Pythium root rot

Fungicides with activity should be rotated in a preventative summer fungicide program



Pythium Root Rot

Systemic

- fosetyl-Al
- mefenoxam
- propamocarb

Contact

- etridiazole
- chloroneb

Problematic:

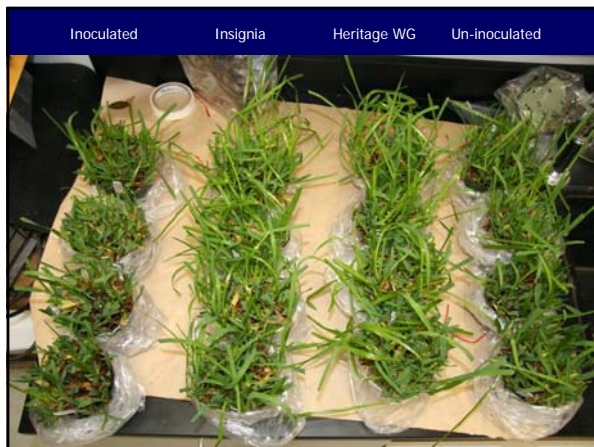
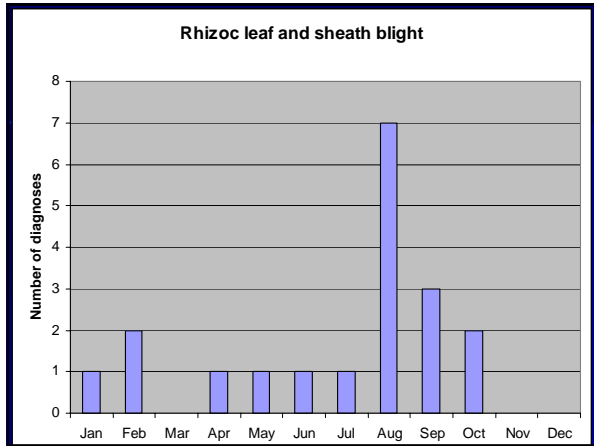
On bermudagrass golf greens in summer also winter

Water management important dry = stress wet = root rot

Often occurs in a complex with damaging nematode pops., G.g.g.

Fungicides with activity should be rotated in a preventative summer fungicide program to avoid selecting insensitive populations





Fairy Ring

Systemic

- azoxystrobin
- flutolanil
- pyraclostrobin

Use a wetting agent, irrigate the product in with 0.25" water
Most likely will require repeat apps

Problematic:

On golf greens, generally starts 3 to 4 years after a re-grass

Can be a major problem that is difficult to manage

Most problematic early summer through early fall

Water management, good fertility keys to mask symptoms

Need more research.



Management

- fungicides can be effective if delivered to the fungus in repeat applications
 - tank mixing wetting agent improves performance, irrigate in with .1 in.
 - high pressure injection or application after core aeration shown to be an option
 - thatch management important
- Evaluation of New Fungicides and Surfactants for the Management of Fairy Ring Associated with *Lycoperdon* sp. in Bermudagrass, Carol M. Stiles, Philip F. Harmon, Matthew O. Brecht, and Lawrence E. Datnoff, Plant Pathology Department, University of Florida



Thanks.

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Questions?

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