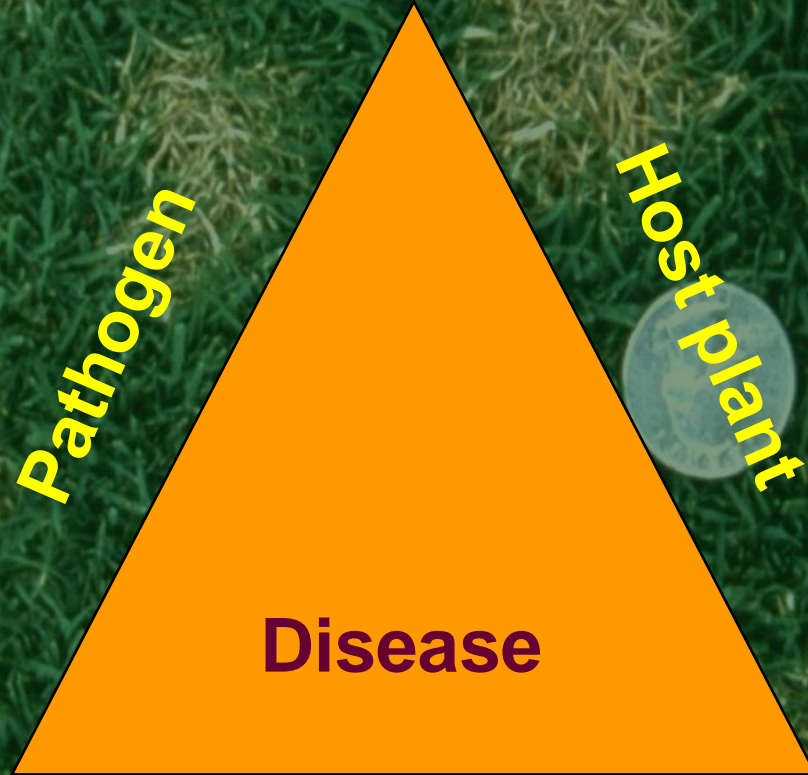


Distinguishing landscape disease & insect problems from environmental stresses - Turfgrass



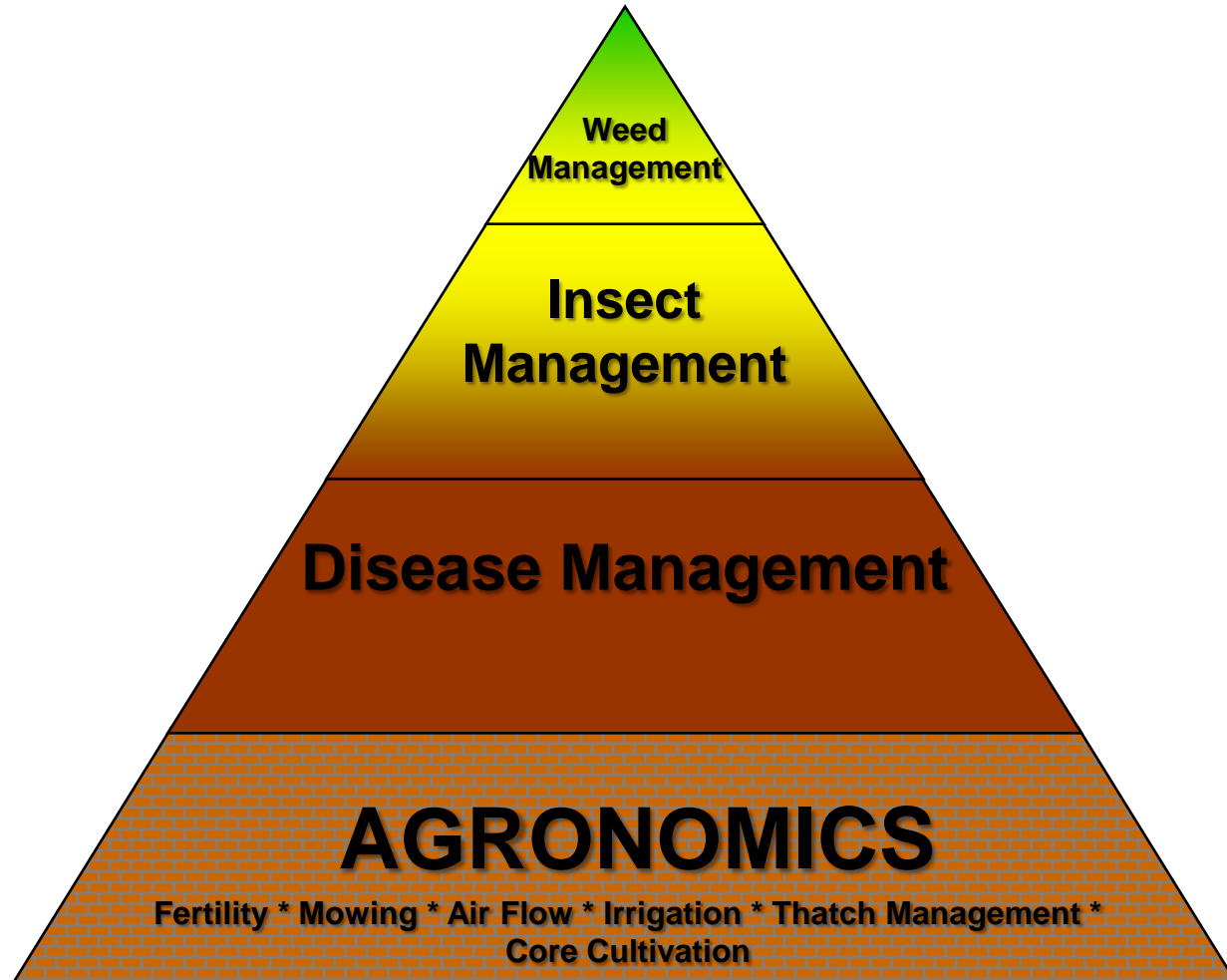
Young-Ki Jo
Assistant Professor & Extension Specialist
Department of Plant Pathology & Microbiology
Texas AgriLife Extension

IPM Update
January 25, 2011
Harris County, Texas



Disease Triangle

Integrated Turf Health Management



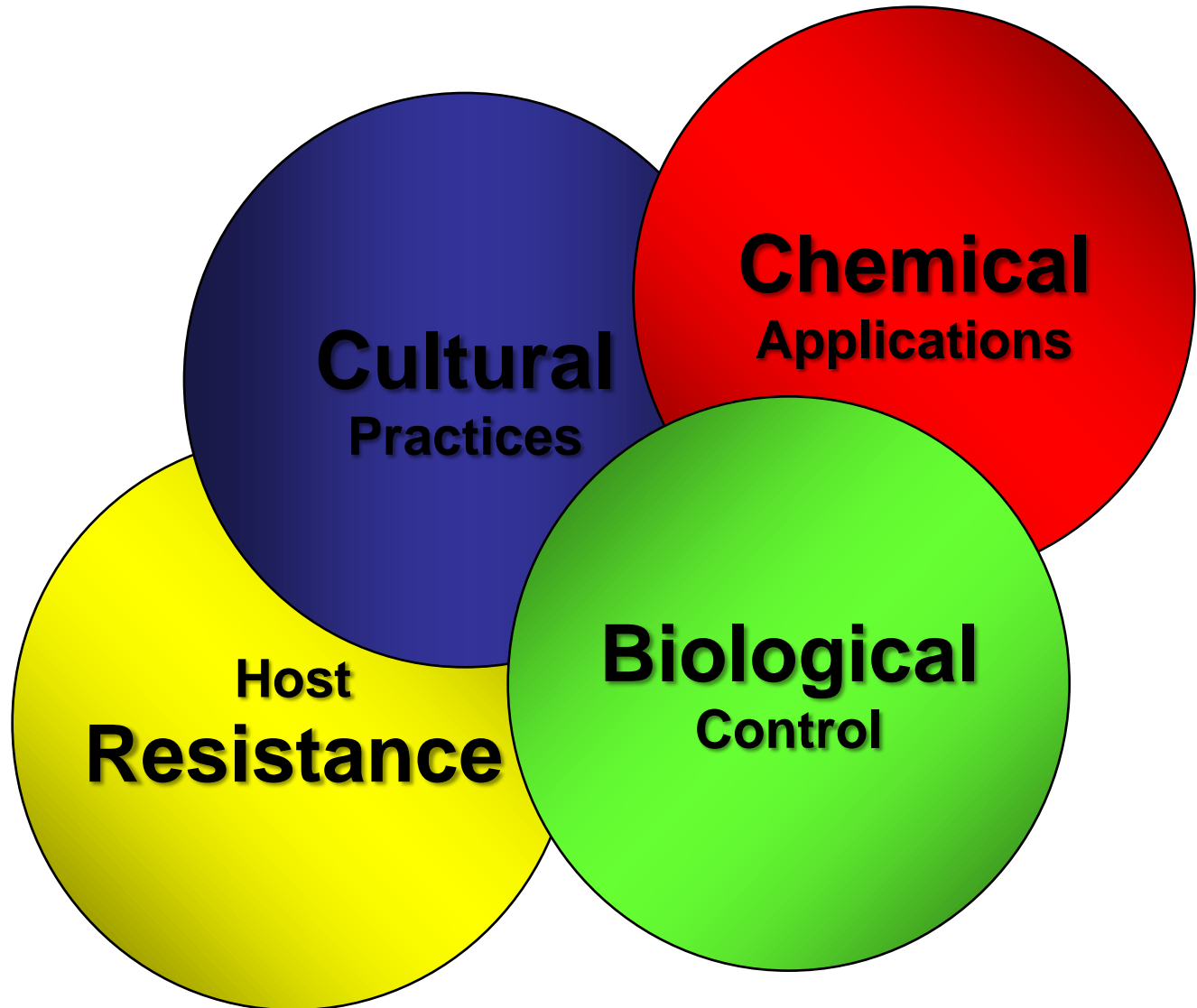




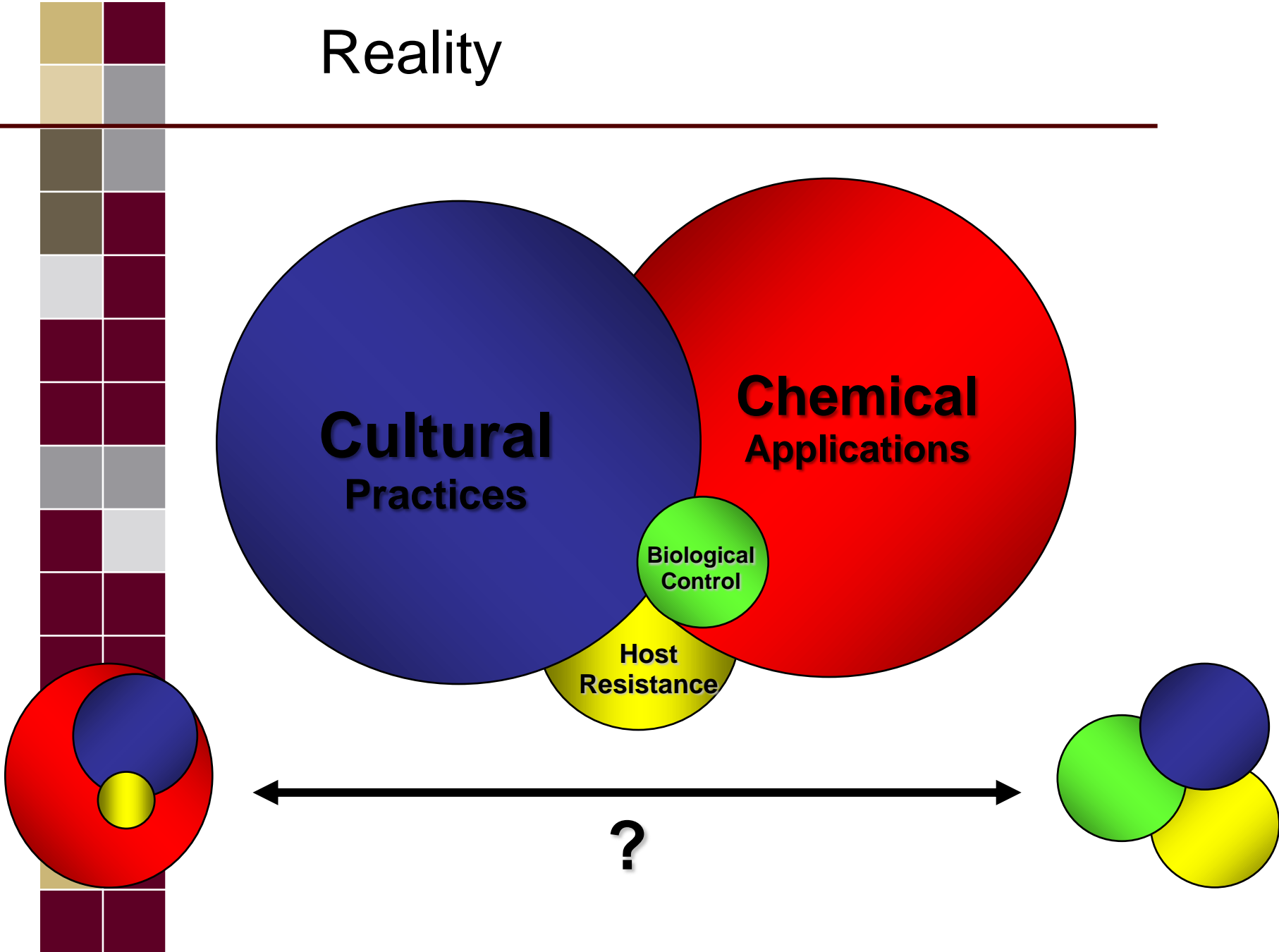
02-17-2010

Crosby

Disease management tools



Reality



Why does grass turn brown?



“The main reasons for brown grass are adverse weather conditions, excessive wear and improper maintenance”





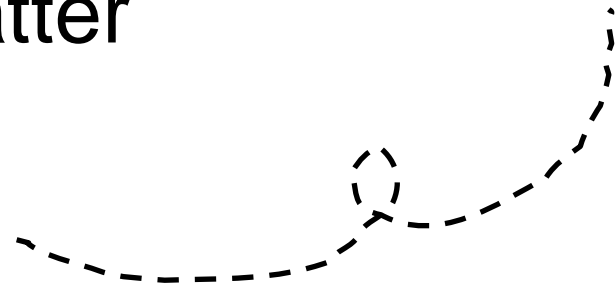
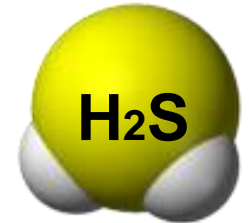


Black Layer



Management of black layer

- Do not add sulfur in any forms
- Do not add organic matter
- Reduce irrigation input
- Soil aeration
- Increase drainage
- Maximize light and air movement
- Maintain soil lower pH





Chinch bug damage

Houston, June 2008

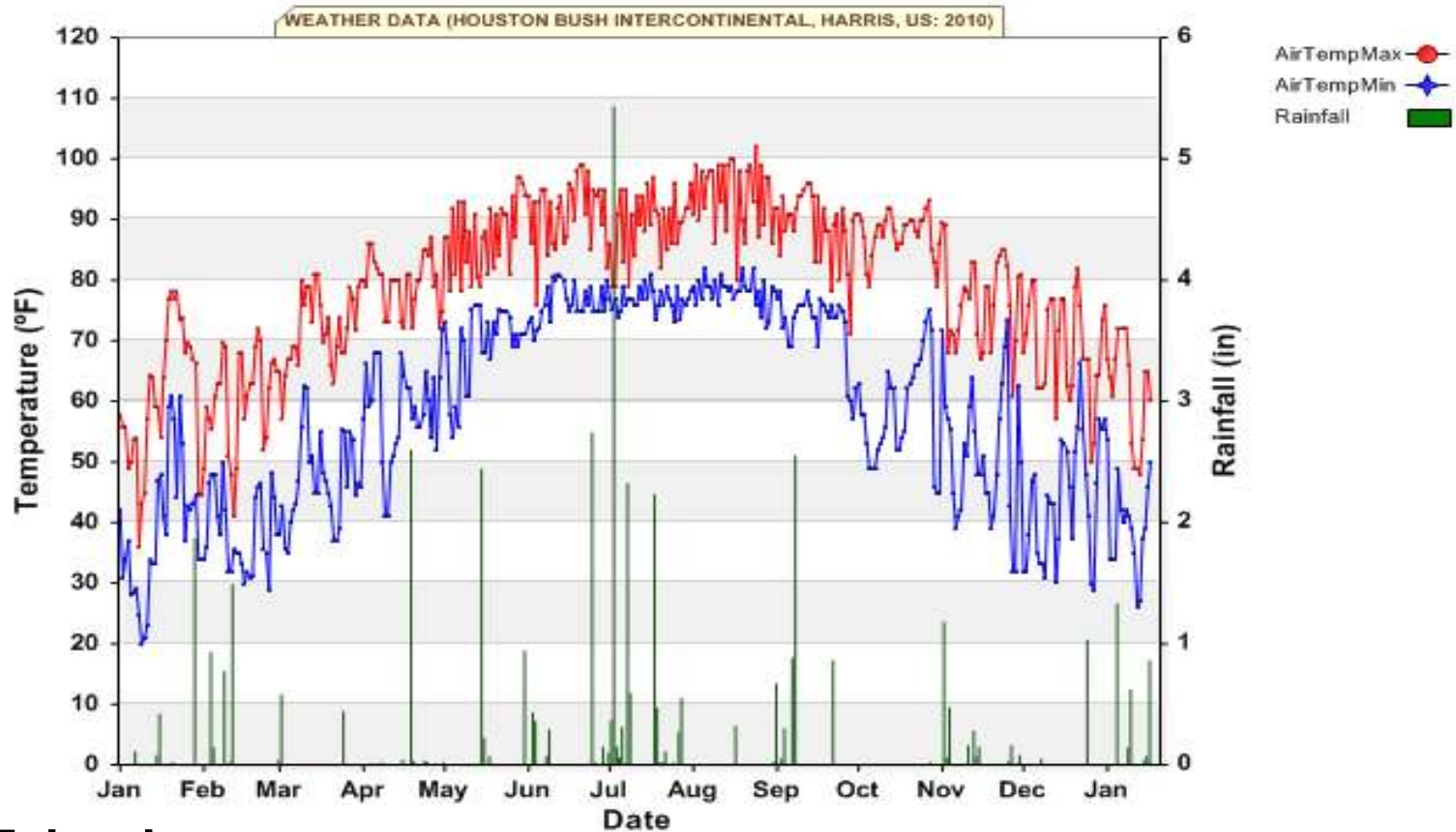
Management of chinch bugs

- Resistant St. Augustine cultivars (Floritam)
- Avoid excess N
- Reduce thatch
- Adequate water
- Insecticide application before damage is too severe for best results



Blissus Insularis

Diseases we need to know



Fairy ring _____

Gray leaf spot _____

Leaf spot _____

Large patch _____

Take-all patch _____



09-08-2010

College Station



Wharton, March 2009



Management of Fairy Ring

- Fertilize with nitrogen
- Spike or core aeration
- Soil surfactants
- Extra irrigation for dry areas
- Preventative/curative fungicide applications for susceptible cultivars
 - Heritage 2 oz
 - Insignia 0.9 oz
 - Prostar 2.2-4.5 oz
- DMI (triadimefon) provide excellent preventative control of puff-ball fungi in putting greens – in the spring (soil temp <55F)



05.10.2010

Woodlands



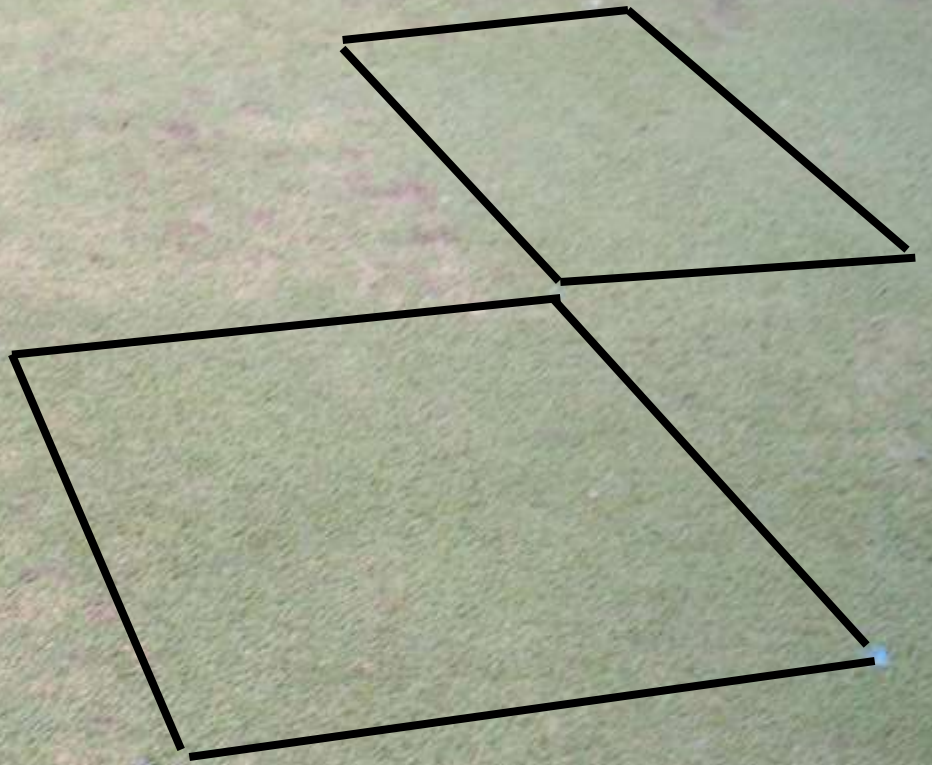
06.03.2010

Blessing



Management of Gray leaf spot

- Avoid fertility with quick-release nitrogen
- Reduce leaf wetness duration
- Curative fungicide applications
 - Strobilurin (Heritage, Compass)
 - Thiophanate-methyl (3336)
 - DMI + contact (chlorothalonil, mancozeb)



Woodlands, 09/13/2009

Fungicide efficacy for foliar leaf spot diseases

Best	Good
Prostar 3 oz	Heritage 2 oz Insignia 0.9 oz
Propiconazole 4 oz Banner MAXX 4 oz	Daconil Ultrex 2.5 oz
Eagle 2 oz	Triton 0.3 oz 26GT 4 oz
Headway 3 oz Tartan 2 oz	3336 5 oz



Management Practices for Foliar Diseases

- Curative fungicide applications
- Reduce shade
- Reduce the leaf wetness period
- Increase fertility level
- Reduce PGR



10.08.2008
Discovery green park, Houston



**Bermudagrass fairway
Houston 3.2.2010**



02.20.2008

Bryan

Management of large patch cultural practices

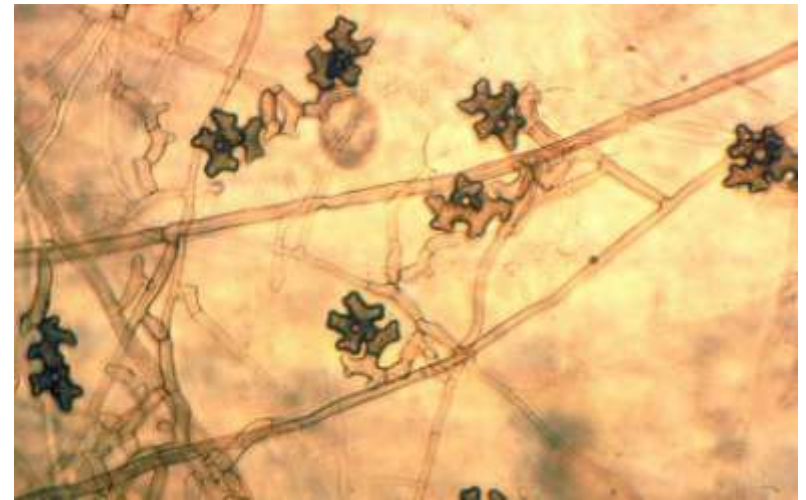
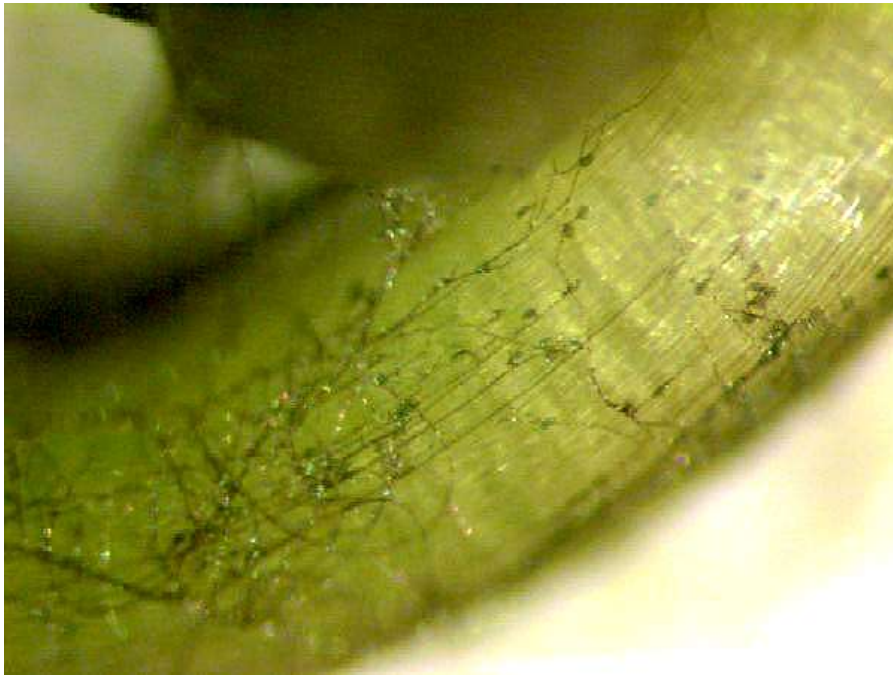
- Remove clippings on infected areas
- Avoid excessive nitrogen applications (quick-release N) in cool weather
- Improve surface and subsurface drainage
- Increase light penetration, air circulation for drying of the grass surface
- Core aeration
 - To increase soil drainage
 - To improve soil oxygen
 - To reduce thatch buildup



Fungicides for Large Patch

Good
Headway 3 oz Disarm 0.5 oz Tartan 2 oz
Propiconazole 4 oz Banner MAXX 4 oz Triton 0.3 oz
Insignia 0.9 oz Heritage 2 oz
Chlorothalonil 3.5 oz Daconil Ultrex 2.5 oz
Prostar 2.2-3 oz 3336 5 oz

Take-all patch



Lobed hyphopodia
(*Gaeumannomyces graminis* var.
graminis)



Unlobed hyphopodia
(*G. graminis* var. *avenae*)

Hyphopodia:

Specialized, usually flattened hyphae of an epiphytic fungus for attachment to or penetration of a host

Management of take-all patch cultural practices

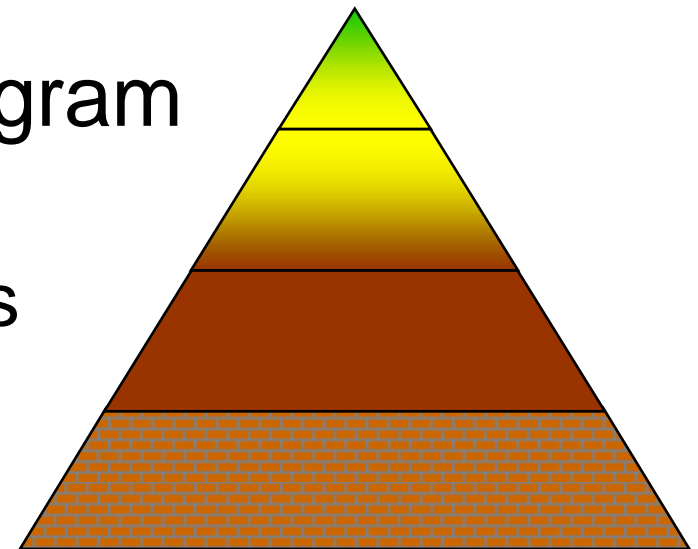
- Fertilize with acidifying fertilizers (ammonium nitrate/sulfate) to maintain a soil pH below 7
- Control thatch accumulation by core aeration, topdressing, and verticutting
- Micronutrient amendment: Manganese (2 lb/acre) in fall and spring
- Avoid excessive irrigation and nitrogen

Management of take-all patch chemical practices

- Preventative application: late fall or early spring
 - Azoxystrobin, pyraclostrobin, trifloxystrobin
 - DMIs (Banner Maxx, Eagle, Rubigan, Bayleton)
 - Benzimidazole (3336)
- High volume (>3 gal/M) of water or post-treatment irrigation (1/4 inch)

Disease Management

- Cultural practices to reduce stress on turfgrass
 - Proper irrigation
 - Balanced fertility
 - Improve soil drainage
 - Thatch management
- Proper fungicide program
 - Correct diagnostics
 - Consult professionals



plantclinic.tamu.edu



A close-up photograph of a spider web on a green plant stem. The web is composed of numerous small, clear droplets of silk, creating a dense, intricate pattern. The background is a blurred green, suggesting a natural outdoor setting. The word "Questions?" is overlaid in the center of the image in a bold, black, sans-serif font.

Questions?