Forage Diseases

Outline
- What is plant disease?
- What forage diseases do we deal with in central Florida?
- How do we manage forage diseases?

What is Plant Disease?
Anything that prevents a plant from performing to its maximum potential.

Types of diseases
- Abiotic (disorders)
  - Disease caused by a non-living agent
  - Sun scorch, nutrient deficiencies, chemical burn
- Biotic
  - Disease caused by a living agent
  - Fungi, bacteria, nematodes, viruses (pathogens)

What size are plant pathogens?

Common plant pathogens and their size relative to each other and to a plant cell

Plant diseases require

*Generally, plant disease is favored by warm weather and high humidity.
Disease not a major problem for North Florida forages

- Only 14 forage disease samples submitted to the Florida F пит disease Clinic since 2005

Rust

Hosts
- Ryegrass
- Oats
- To a lesser extent in most other forages

Management
- Resistant varieties/Cultivars
- Ryegrass “Florida Rust Resistant”
- Oats “Rust Resistant”
- Hybrid 72
- Avoid susceptible varieties/Cultivars
- Bermudagrass - common Alabama, Mondo, St. Augustine

Dollar Spot

Host: Bahiagrass
- Argentine cultivars less susceptible than Pensacola and Tifton 9 (visual observation)
- Causal Agent: Sclerotinia homoeocarpa

Epidemiology: First occurs in summer rainy season

Symptoms:
- Hourglass-shaped tan lesions with dark brown margins
- Trifoliate leaves may die as disease progresses
- Signs:
  - Mycelium protruding from lesion
  - Apathecia
**Dollar Spot**
- Distribution:
  - Jackson Co.
  - Washington Co.
  - Gadsden Co.
  - Leon Co.
  - Walton Co.
  - Calhoun Co.
  - Gulf Co.

**Helminthosporium Leaf Spot**
- Hosts: Many forages
- Causal Agent: Bipolaris, Drechslera and Eiseherhidi um spp.
- Fungi
- Epidemiology: Occurs mostly during mild, wet fall and winters. Can appear any time of the year.

**Helminthosporium Leaf Spot**
- Symptoms:
  - Many with each pathogen/host pair
  - Spots range in size from very small (pinhead size), pale brown to purple lesions
  - Expanded lesions with bleached centers that girdle the leaf blade
  - Severely infected leaves turn purple or reddish brown in color, giving the turf an overall purple cast
  - Leaves eventually wither and dry to a light tan color
  - Lesions on stems are dark purple to black
  - Turf areas thin and die.

**Fungal Diseases of Rye (Secale cereale L.)**

**Bacterial, Nematode and Viral Diseases of Rye (Secale cereale L.)**

**Ergot**
- Causal Agent: Claviceps paspalli
Ergot

- Epidemiology:
  - Favored by hot, damp weather

- Management:
  - Resistance
  - Argentine Bahiagrass more susceptible than other cultivars

Ergot Alkaloids and Livestock

- Gangrenous ergotism (i.e., tissue-foot)
  - Results in loss of extremities such as hooves, ear tips, and tail switches
- Subtle and chronic decreases in livestock productivity (i.e., summer slump)
  - Characterized by decreases in milk, offering productivity, reproductive performance, milk production, and dairy herds
- Fat necrosis
  - Often only diagnosed following necropsy.

Dependent on many factors, e.g., the animal’s age, health, metabolism, etc...

Plant Disease Management

- Cultural Controls:
  - Proper nutrient management
  - Avoid excess nitrogen during critical disease development periods
  - Rotate crop within disease affected (low plant tissue)

- Chemical Controls:
  - Chlorothalonil
  - Thiram
  - Mancozeb
  - Maneb
  - Propiconazole
  - Proconazole
  - Micraclor
  - Microzeb
  - Inhibitors

Disease typically do not cause enough damage to warrant a fungicide application in perennial grasses.

Crop rotation: Treatment threshold levels in certain eye seed production fields
Questions?