

## PLP 3002

### Leafspot Diseases

---

---

---

---

---

---

---

---

### Early blight and other Alternaria diseases

- Cercospora and Helminthosporium leafspots
- Entomosporium leafspot of Indian Hawthorne
- Southern corn leaf blight (Bipolaris/Helminthosporium maidis)
- Brown spot of rice (Helminthosporium oryzae)

---

---

---

---

---

---

---

---

### Symptoms

- Spots and occasionally blights
- Zonate (Alternaria)
- With dark borders (Cercospora, Helminthosporium)
- Shothole

---

---

---

---

---

---

---

---

## Damage induced by reducing photosynthetic capacities

- Some produce toxins also

---

---

---

---

---

---

---

---

## Signs

- Usually not obvious

---

---

---

---

---

---

---

---

## Life cycles

- Alternaria (Deuteromycete)
- Distinctive, dark-colored multicellular spores
- Can be controlled in greenhouses with UV-absorbing film (inhibits sporulation)

---

---

---

---

---

---

---

---

## Cercospora (Deuteromycete)

- Many species (dicots and monocots)
- Often lesions have black borders, tan centers

---

---

---

---

---

---

---

---

## Helminthosporium complex (Deuteromycete)

- Like Cercospora, but confined to grasses
- Many produce virulent plant toxins

---

---

---

---

---

---

---

---

## Helminthosporium oryzae

- a.k.a Cochliobolus miyabeanus (Ascomycete name)
- Sexual stage a perithecium (filamentous ascospores)
- Rice brown spot
  - Bengal famine of 1942-3
  - starved 2 million people

---

---

---

---

---

---

---

---

## Southern corn leaf blight (1970s)

- *Bipolaris* (formerly *Helminthosporium*)  
*maidis*
- a.k.a *Cochliobolus heterostrophus*  
(Ascomycete name)
- Sexual stage a perithecium (filamentous  
ascospores)
- Genetic recombination led to 1970s  
blight epidemic

---

---

---

---

---

---

---

---