

PLP 3002

Root and stem rots, cankers

Featured pathogens

- **Phytophthora spp. (Oomycete)**
 - *P. parasitica*
 - *P. infestans*
- **Sclerotium rolfsii (Deuteromycete)**
- **Fusarium solani (Deuteromycete)**
 - All three are facultative saprophytes
 - Like seedling blights, damping-off fungi
 - More aggressive to older plants

Symptoms

- **Root necroses (root rots)**
- **Stem cankers, stem girdling**
- **Foliar necroses (blights)**
- **Tuber rot (potato late blight)**

Signs

- **Phytophthora** (pale, moist mycelium)
- **Sclerotium rolfsii** (white mycelium spherical sclerotia)
- **Fusarium solani** (signs not evident)

Life cycles and structures

- **Phytophthora** (like *Pythium*)
 - Moderate host ranges
 - Some prefer cool, wet conditions
 - Sporangia (inoculum dispersal)
 - Germinate directly OR
 - Produce zoospores
 - Oospores (dormancy)
 - Antheridia
 - Oogonia

Life cycles and structures

- **Sclerotium rolfsii** (like *Rhizoctonia*)
 - Very wide host range
 - Mycelium white (not 90 degree)
 - Truly a hot-weather pathogen
 - Asexual stage without spores
 - Sexual stage (Basidiomycota)

Life cycles and structures

- **Fusarium solani**
 - Moderately wide host range
 - Asexual stages
 - macroconidia
 - microconidia
 - chlamydospores
 - Sexual stage (Ascomycota)

Controls

- **Fungicides**
 - Methyl bromide
 - Mercurials
 - Metalaxyl (Oomycota)
 - Bordeaux mixture (Oomycota)

Controls

- **Avoid contamination (e.g. hoses)**
- **Avoid over-watering**
- **Crop rotation**
- **Disease forecasting (late blight)**
- **Use certified planting stock**
- **Use sterile pots and soil**
