

## Laboratory 3 Study Guide (video: 1 hour 3 minutes)

### Study Questions

1. What types of plants do the damping off fungi (and oomycetes) target, and what types of symptoms do they cause?
2. How can one distinguish *Rhizoctonia* from *Pythium* based on microscopic examination of diseased tissue?
3. What type of sexual spores do the teliospores of *Rhizoctonia* produce? Does *Rhizoctonia* produce asexual spores?
4. How do *Pythium* and *Rhizoctonia* survive under adverse conditions?
5. How were mercurial compounds and methyl bromide used to control damping off? Why are they either banned or being cut back drastically for plant disease control?
6. In some agricultural situations, the severity of damping off diseases can be worse when seedlings are sown in sterile than ordinary field soil. How could that be?
7. Are compounds containing copper, such as Metalaxyl, equally effective for controlling all damping off pathogens, or just certain ones? Specify.
8. Do most damping off pathogens tend to have relatively broad or narrow host ranges?
9. What is meant by “tired” or “exhausted” soil? How do these terms relate to the cultural control of damping off pathogens?
10. Are *Aphanomyces*, *Rhizoctonia* and *Pythium* the only genera of plant pathogens that can cause seedling blights? Are all these pathogens confined to the roots and stems of plants, or, under ideal conditions, can they also cause damage to leaves, flowers, and/or fruit?

### Key Words

Antagonists (as biological control agents to control damping off)

Antheridium

*Aphanomyces*

Basidiomycete

Canker symptoms

Coenocytic hyphae

Copper compounds (to control oomycetes)

Crop rotation  
Cultural control of damping off  
Damping off (pre- and post-emergence) symptoms  
Deuteromycete  
Economic considerations to control damping off  
Fallow  
Flagellum (-a)  
Foliar blight symptoms  
Mercury as seed treatment)  
Methyl bromide fumigant  
Metalaxyl (to control oomycetes)  
Nitrogen (as an abettor of damping off disease)  
Oogonium  
Oomycete  
Oospore  
Ozone layer (in atmosphere)  
*Pythium*  
*Rhizoctonia*  
Root rot symptoms  
Sclerotia  
Seedling diseases  
Septate hyphae  
Soil "exhaustion" (a.k.a. "tired" soil)  
Soil sterilization  
Sporangium  
*Thanatephorus* (as teliomorphic name of *Rhizoctonia*)  
Zoosporangium  
Zoospore