

## Laboratory Lecture 4 Study Guide (video: 1 hour 1 minute)

**Errata:** The slide showing infected pineapple plants does not belong here; ignore it. Also, the generic name of the pathogen, "*Psuedomonas*" should be spelled "*Pseudomonas*".

### Study Questions

1. The stem, root rot, and canker diseases featured here can all cause wilt symptoms. How are these wilt symptoms different from those caused by the true vascular wilts?
2. What type of sexual spores do the deuteromycetes, *Fusarium* and *Sclerotium*, produce? Are they commonly encountered under natural conditions?
3. What type of dormancy spores are produced by *Phytophthora*? *Fusarium*? *Sclerotium*?
4. Is temperature an important factor to consider in disease development by *Phytophthora infestans*? *Sclerotium rolfsii*? If so, specify why.
5. How is *Sclerotium rolfsii* similar to *Rhizoctonia solani*, and how is it different? (Consider fungal morphology and color, relationships, pathology and host range.) Likewise, compare and contrast *Phytophthora* and *Pythium*.
6. Recently new mating types of *Phytophthora infestans* have been introduced into North America? List two reasons why this is of concern to potato growers.
7. Are *Phytophthora*, *Sclerotium rolfsii*, and *Fusarium solani* readily air-borne or not? If not, where does most of the inoculum originate?
8. Are signs of *Sclerotium rolfsii* readily evident? What makes them so distinctive for this fungus? Likewise, are signs of *Fusarium solani* equally evident?
9. *Phytophthora* infections of periwinkle spread particularly aggressively within nurseries during the summer months. What spore form do you believe is most active in this regard? Why?
10. Would *Metalaxyl* fungicide be as effective for *Sclerotium rolfsii* and *Fusarium solani* as it is for *Phytophthora* and *Pythium*? Explain your answer.

### Key Words

Ascomycota  
antheridium (-ia)  
Bordeaux mixture

Canker symptoms  
Chlamydospores  
Coenocytic hypha  
Conidium (-ia, macro- and micro-)  
Cortical invader  
Deuteromycota  
Facultative saprophyte  
Foliar symptoms  
*Fusarium solani*  
germ tube  
Mercury  
Metalaxyl  
Methyl bromide  
Oogonium (-ia)  
Oomycota  
Oospore  
Ozone  
*Phytophthora (parasitica and infestans)*  
Root rot symptoms  
Septate hypha  
Sclerotium  
*Sclerotium rolfsii*  
Sporangium (-ia)  
Tuber rot symptoms  
Wilt symptoms (i.e. stem girdling)