

Laboratory 2 Study Guide (video: 59 minutes)

Study Questions

1. One of the most potent natural carcinogens is produced by a common mold. What is the toxin and what mold is responsible?
2. What differentiates zygomycetes from other true molds (Eumycota)? How do the sporangial contents of zygomycetes differ from those of the Oomycota? Also, how do the sexual stages of these two groups of organisms differ?
3. What is ergot poisoning? What compounds are involved, and under what circumstances can humans and animals be poisoned by ergot? And, by the way, who was Saint Anthony?
4. *Claviceps purpurea* has a very sophisticated life cycle. How does it work? What constitutes the primary inoculum? Secondary inoculum? What kinds of plants do the ergot fungi infect, and what tissues are involved?
5. In many respects, *Sclerotinia sclerotiorum* is quite similar to *Sclerotium rolfsii*. In what ways? How do they differ? Are the two phylogenetically related? Do both fungi prefer the same temperatures? Can their sclerotia be distinguished?
6. In a sense, *Sclerotinia sclerotiorum* has a primary cycle similar to that of *Monilinia fructicola*. In what way? Does *Sclerotinia sclerotiorum* produce conidia?
7. If you see citrus or other fruits with a bluish-green mold growing on them, what is the fungus most likely to be involved? Suppose it was either coal-black or tan-colored instead?
8. Do any members of the genus *Fusarium* cause storage rot problems? If so, do any produce toxins?
9. What two crops are particularly susceptible to *Aspergillus flavus*, and under what conditions does mold gain entry?
10. Do all storage rot pathogens require moist conditions to develop or are some favored by dry conditions instead? Similarly, do all storage rot pathogens develop under relatively warm conditions (i.e. no refrigeration) or do some do well despite refrigeration? If such exceptions exist, name them.

Key Words

Aflatoxin (*Aspergillus flavus*)

Aspergillus
Botrytis
Choenephora (also *Mucor* and *Rhizopus*)
Claviceps purpurea
Ergot
Holy Fire (ergot)
Fusarium toxins (in stored grains)
Penicillium
Perithecium (-ia; of *Claviceps purpurea*)
Rye
Saint Anthony (ergot)
Sclerotinia sclerotiorum
Sclerotium (-ia)
Sporangium (-ia; in zygomycetes)
Symbiosis (between *Claviceps purpurea* and rye)
Zygomycete molds
Zygospor