

PLP 3002  
Downy mildews  
Powdery mildews  
Sooty mildews

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Downy mildews (Oomycetes)  
Akin to Phytophthora, Pythium

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Downy mildew  
of grapes  
(*Plasmopara viticola*)

- Introduced from Americas to Europe
- Bordeaux mixture (copper sulfate and lime) in 1880s
- Native grapes tolerant, but not Old World ones

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## General characteristics

- Foliage blights
- Spores depend on film of water on plant tissues
- Hyphae intercellular; send haustoria into adjacent cells
- Sporangiohores emerge from stomata
- Control (protective sprays)

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## Powdery mildews (Ascomycetes)

- Superficial hyphae (haustoria in epidermis)
- Telemorphs (cleistothecia; ascospores = primary inoculum)
- Anamorphs Oidium spp. (conidia = secondary inoculum)
- Powdery mildews prefer dry weather

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## Powdery mildews (Ascomycetes)

- All are obligate parasites and have narrow host ranges.
- Hyphae superficial (spray anytime)

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## Sooty molds

- Ascomycete complex with dark hyphae
  - Abetted by suctorial insects (aphids, scales, whiteflies, etc.)
- Fungi are not parasitic
- Sooty mold control contingent upon insect control.

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