

## 2024 PDDC Plant Disease Talks

### Orchid Diseases

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### Orchid Diseases Black Rot

- Pathogens
  - *Phytophthora cactorum*
  - *Pythium ultimum*
- Favorable environment
  - Excessive moisture
  - Cool temperatures



### Orchid Diseases Black Rot

- Control
  - Avoid symptomatic plants
  - Isolate new plants from established plants
  - Decontaminate pots, work surfaces, tools (70% alcohol, disinfectants, bleach)
  - Use a proper potting mix
  - DO NOT use garden soils

### Orchid Diseases Black Rot

- Control
  - DO NOT overwater
  - Limit water splash
  - Promote good air circulation
  - Remove diseased plant material and debris

### Orchid Diseases Black Rot

- Control
  - Use fungicides to prevent infections
    - Poultices (?)
      - Copper sulfate + lime
      - Cinnamon
    - Spray treatments
      - Metalaxyl/mefenoxam, fosetyl-AI, etridiazole
      - Mancozeb, captan
  - Alternate active ingredients (FRAC codes)
  - Apply according to label instructions

## Orchid Diseases Leaf Spots/Blights

- Pathogens
  - *Phyllosticta* spp.
  - *Colletotrichum* spp.
  - *Cercospora* spp.
  - *Septoria* spp.
  - *Guignardia* spp.
  - *Diplodia* spp.
  - *Uredo* spp.
  - *Pseudomonas* spp.
- Favorable environment
  - Excessive moisture
  - High humidity



## Orchid Diseases Leaf Spots/Blights

- Control
  - Avoid symptomatic plants
  - Isolate new plants from established plants
  - DO NOT get water on leaves
  - DO NOT overwater
  - Promote good air circulation
  - Remove diseased plant material and debris (where possible)

## Orchid Diseases Leaf Spots/Blights

- Control
  - Use fungicides to prevent infections
    - Chlorothalonil, copper, mancozeb, thiophanate-methyl, fludioxonil, captan, ferbam
  - Apply to protect new leaves
  - 7-14 day application interval
  - Alternate active ingredients (FRAC codes)
  - Apply during periods of high moisture

## Orchid Diseases Botrytis Blight/Gray Mold

- Pathogen: *Botrytis cinerea*
- Favorable environment
  - Excessive moisture
  - High humidity



## Orchid Diseases Botrytis Blight/Gray Mold

- Control
  - Isolate new plants from established plants
  - DO NOT get water on flowers
  - DO NOT overwater
  - Promote good air circulation
  - Remove diseased plant material and debris

## Orchid Diseases Botrytis Blight/Gray Mold

- Control
  - Use fungicides to prevent infections
    - Chlorothalonil, copper, fludioxonil, iprodione, mancozeb, maneb, thiophanate-methyl, triflumizole, vinclozolin
    - 7-14 day application interval
    - Alternate active ingredients (FRAC codes)
    - Apply during periods of high moisture
    - Apply when “perfect” flowers are desired

## Orchid Diseases Viruses

- Pathogens
  - *Odontoglossum ringspot virus* (ORSV)
  - *Cymbidium mosaic virus* (CymMV)
  - *Tobacco mosaic virus* (TMV)
  - *Cucumber mosaic virus* (CMV)
  - *Impatiens necrotic spot virus* (INSV)
  - *Tomato spotted wilt virus* (TSWV)
  - Others

## Orchid Diseases Viruses

- Favorable environment: None
- Transmission
  - Touch: TMV
  - Mechanical: ORSV, CymMV
  - Aphid: CMV
  - Thrips: INSV, TSWV



## Orchid Diseases Viruses

- Control
  - Avoid symptomatic plants
  - Isolate new plants from established plants
  - Request testing of plants prior to purchase
    - Enzyme-Linked Immunosorbent Assay (ELISA)
    - Dip-stick tests
    - Polymerase Chain Reaction (PCR)
  - Discard infected plants

## **Orchid Diseases** **Viruses**

- **Control**

- **Dinfest contaminated materials**

- 1% sodium dodecyl sulfate (sodium lauryl sulfate)  
+ 1% Alconox® (2½ Tbsp + 2¼ Tbsp/gal)
    - Trisodium phosphate (14 dry oz/gal)
    - 20% low fat dry milk (Carnation®) +  
0.1% polysorbate 20 (9½ cups + ¼ tsp/gal)
    - Alcohol dip followed by flaming

## **Orchid Diseases** **Where to Go for Help**

**Plant Disease Diagnostics Clinic**  
**Department of Plant Pathology**  
**University of Wisconsin-Madison**  
**1630 Linden Drive**  
**Madison, WI 53706-1598**  
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