

Wisconsin Horticulture Update 2014

## Houseplant Diseases/Disorders

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## Houseplant Diseases/Disorders Root/Crown Rots

- **Pathogens**
  - Pythium spp.
  - Phytophthora spp.
  - Rhizoctonia solani
  - Fusarium spp.
  - Cylindrocarpum spp.
  - Thielaviopsis spp.
- **Hosts: Anything and everything**

## Houseplant Diseases/Disorders Root/Crown Rots

- **Environmental triggers**
  - High soil moisture
  - Cool soil temperatures



## Houseplant Diseases/Disorders Root/Crown Rots

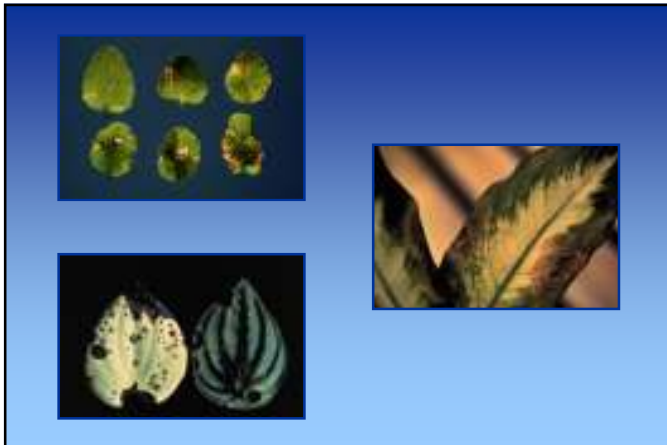
- **Control**
  - Use a soil-less potting mix
  - Moderate soil moisture
    - Use a soil/potting mix with adequate drainage
    - Improve drainage in poorly drained soils/potting mixes
    - DO NOT overwater
  - Decontaminate infested tools, pots, work areas

## Houseplant Diseases/Disorders Root/Crown Rots

- **Control**
  - Use fungicides to prevent infections
    - Etridiazole, metalaxyl, mefenoxam, fosetyl-AI
    - PCNB, thiophanate-methyl, fludioxonil
    - Spray applications or soil drenches
  - Use biopesticides to prevent infections
    - *Trichoderma* spp., *Gliocladium* spp.
    - Incorporate into potting mixes
  - Oftentimes not practical

## Houseplant Diseases/Disorders Fungal Leaf Spots/Blights

- **Pathogens**
  - Many different fungi
  - *Alternaria* spp., *Cercospora* spp., *Phyllosticta* spp., *Colletotrichum* spp., *Drechslera* spp., *Bipolaris* spp., *Helminthosporium* spp., *Fusarium* spp., *ad nauseum*
- **Host: Anything and everything**



## Houseplant Diseases/Disorders Fungal Leaf Spots/Blights

- **Control**
  - DO NOT overcrowd plants
  - DO NOT overhead water
  - DO NOT overwater
  - Remove and destroy infected leaves
  - Remove and destroy infested leaf debris

## Houseplant Diseases/Disorders Fungal Leaf Spots/Blights

- **Control**
  - Use fungicides to prevent infections
    - Chlorothalonil, copper-containing fungicides, mancozeb, maneb, myclobutanil, propiconazole, thiophanate-methyl
    - Neem oil
    - 7-14 day application interval

## Houseplant Diseases/Disorders Powdery Mildews

- **Causes**
  - *Erysiphe* spp.
  - *Uncinula* spp.
  - *Phyllactinia* spp.
  - *Blumeria* spp.
  - *Oidium* spp.
  - *Microsphaera* spp.
  - *Sphaerotheca* spp.
  - *Podosphaera* spp.
  - *Brasiliomyces* spp.
  - *Ovulariopsis* spp.
- **Hosts**
  - Virtually everything
  - Rosemary



## Houseplant Diseases/Disorders Powdery Mildews

- **Control**
  - Remove diseased plant material and debris
  - Reduce humidity
    - Space plants farther apart
    - Increase air flow
  - Grow resistant cultivars/varieties (when available)

## Houseplant Diseases/Disorders Powdery Mildews

- **Control**
  - Use fungicides to prevent infections
    - Dinocap, dithiocarbamates, myclobutanil, triadimefon, triforine, sulfur or thiophanate-methyl
    - Baking soda (1.5 Tbsp/gal) and light weight horticultural oil (3 Tbsp/gal)
    - Apply when humidity >60-70%
    - 7-14 day application interval

## Houseplant Diseases/Disorders Xanthomonas Leaf Diseases

- **Cause:** Xanthomonas campestris
  - pv. poinsetticola
  - pv. begoniae
  - pv. pelargonii
- **Hosts:**
  - poinsettiae
  - Begonia
  - Geranium
  - hederae
  - dieffenbachiae
  - Ivies
  - Dumbcane et al.



## Houseplant Diseases/Disorders *Xanthomonas* Leaf Diseases

- **Control**
  - Purchase disease-free plants
  - Follow strict sanitation procedures when working with plants
  - Remove symptomatic plants
  - Remove contaminated plant debris
  - Disinfest areas where plants have grown

## Houseplant Diseases/Disorders Viral Diseases

- **Pathogens**
  - Many, with more discovered all the time
  - Wide host range
    - *Impatiens necrotic spot virus (INSV)*
    - *Tomato spotted wilt virus (TSWV)*
    - *Tobacco mosaic virus (TMV)*
    - *Cucumber mosaic virus (CMV)*
    - *Dasheen mosaic virus (DsMV)*

## Houseplant Diseases/Disorders Viral Diseases

- **Pathogens**
  - Narrow host range
    - *Cymbidium mosaic virus (CyMV)*
    - *Odontoglossum ringspot virus (ORSV)*



## Houseplant Diseases/Disorders Viral Diseases

- **Control**
  - Buy plants from a reputable source
  - Inspect plants prior to purchase for presence of disease
  - Have plants tested for viruses prior to purchase (Agdia, Inc., [www.agdia.com](http://www.agdia.com))
  - DO NOT smoke around your plants
  - Wash hands routinely
  - Control insect vectors

## Houseplant Diseases/Disorders Viral Diseases

- **Control**
  - Remove/isolate infected plants/plant debris
  - Disinfest tools , benches, pots
    - 1% Sodium dodecyl sulfate (sodium lauryl sulfate) + 1% Alconox® (2½ Tbsp + 2¾ Tbsp/gal)
    - 20% low fat dry milk (Carnation®) + 0.1% polysorbate 20 (9¼ cups + ¾ tsp/gal)
    - Trisodium phosphate (14 dry oz/gal)
    - Alcohol dip followed by flaming

## Houseplant Diseases/Disorders Nutrient Abnormalities

- **Causes**
  - Nutrient deficiencies
  - Nutrient toxicities
- **Affected plants: Virtually anything**



## Houseplant Diseases/Disorders Nutrient Abnormalities

- **Management**
  - Fertilize properly
  - Water properly
  - Maintain proper soil pH
  - Repot plants on a regular basis
  - Pot plants into “inert” containers

## *Houseplant Diseases/Disorders Adverse Environmental Conditions*

- **Causes**
  - Temperature stress
  - Water stress
  - Light stress
- **Affected plants: Virtually anything**



## *Houseplant Diseases/Disorders Adverse Environmental Conditions*

- **Management**
  - Maintain plants at proper temperatures
  - Water plants appropriately
  - Grow plants in appropriate light
  - Avoid extreme changes in environmental factors

## *Houseplant Diseases/Disorders Where to Go for Help*

*Plant Disease Diagnostics Clinic  
Department of Plant Pathology  
University of Wisconsin-Madison  
1630 Linden Drive  
Madison, WI 53706-1598  
(608) 262-2863  
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