

Brown County Greenhouse Seminar

New and Emerging Diseases in Greenhouse Plants

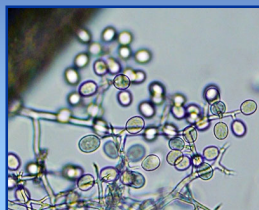
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Madison/Extension

New and Emerging Diseases Impatiens Downy Mildew

- **Causes**
 - *Plasmopara obducens*
 - *Bremiella sphaerosperma*
- **Hosts**
 - Standard garden impatiens (*I. walleriana*)
 - Balsam impatiens (*I. balsamina*)
 - Jewelweed (*I. pallida*, *I. capensis*)
 - New Guinea impatiens (*I. hawkeri*)
(resistant/tolerant)

New and Emerging Diseases Impatiens Downy Mildew

- **Favorable Environment**
 - Cool conditions (59 - 73°F)
 - Long leaf wetness periods (> 6 hrs)
 - High humidity



New and Emerging Diseases Impatiens Downy Mildew

- **Control**
 - Start with clean transplants and seed
 - Keep materials from different sources physically separated
 - DO NOT overcrowd plants (i.e., reduce humidity)
 - DO NOT overhead water (i.e., limit leaf wetness periods)
 - Grow tolerant/resistant/immune plants

New and Emerging Diseases *Impatiens Downy Mildew*

- **Control**
 - Scout frequently
 - Bag and discard affected plants
 - Symptomatic plants
 - Asymptomatic surrounding plants
 - Disinfect contaminated areas
 - Commercial disinfectants
 - 10% bleach
 - 70% alcohol

New and Emerging Diseases *Impatiens Downy Mildew*

- **Control**
 - Use fungicides to prevent infections
 - mefenoxam, fluopicolide, potassium phosphite, mancozeb, pyraclostrobin + boscalid, fluoxastobin, cyazofamid, dimethomorph, fenamidone, azoxystrobin
 - Alternate active ingredients (FRAC codes)
 - Apply at 7 day application intervals
 - Move (i.e., rotate) impatiens production

New and Emerging Diseases *Late Blight*

- **Cause:** *Phytophthora infestans*
- **Hosts**
 - Tomato
 - Potato
- **Environmental trigger**
 - Long periods of leaf wetness
 - High humidity



New and Emerging Diseases *Late Blight*

- **Control**
 - Start with clean transplants
 - Keep materials from different sources physically separated
 - DO NOT overcrowd plants (i.e., reduce humidity)
 - DO NOT overhead water (i.e., limit leaf wetness periods)

New and Emerging Diseases *Late Blight*

- **Control**
 - Grow resistant tomato varieties
 - 'Better Boy', 'Golden Sweet', 'Green Zebra', 'Juliet', 'Legend', 'Magic Mountain', 'Matt's Wild Cherry', 'Pruden's Purple', 'Regal Plum', 'Roma', 'Slava', 'Stupice', 'Sun Sugar', 'Wapsipinicon', 'Wisconsin 55'

New and Emerging Diseases Late Blight

- **Control**
 - Scout frequently
 - Bag and discard affected plants
 - Symptomatic plants
 - Asymptomatic surrounding plants
 - Disinfect contaminated areas
 - Commercial disinfectants
 - 10% bleach
 - 70% alcohol

New and Emerging Diseases Late Blight

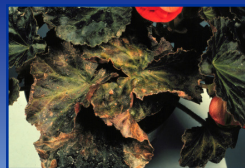
- **Control**
 - Use fungicides to prevent infections
 - Copper, chlorothalonil
 - Applications every 7-14 days

New and Emerging Diseases Viral Diseases

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

New and Emerging Diseases Viral Diseases

- **Pathogens**
 - Narrow-range
 - Cymbidium mosaic virus (CyMV)
 - Odontoglossum ringspot virus (ORSV)
 - Hosta virus X (HVX)



New and Emerging Diseases Viral Diseases

- **Control**
 - Start with clean materials
 - Inspect plants prior to purchase for viral symptoms
 - Test for viruses prior to purchase
[Agdia, Inc. (www.agdia.com)]

New and Emerging Diseases Viral Diseases

- **Control**
 - DO NOT smoke around plants
 - Control insects
 - Keep weeds under control
 - Remove and destroy infected plants/debris

New and Emerging Diseases Viral Diseases

- **Control**
 - Disinfest tools, pots, bench tops, etc.
 - Sodium dodecyl sulfate (sodium lauryl sulfate) + Alconox® (1% + 1%)
 - Trisodium phosphate
 - Alcohol dip followed by flaming
 - Decontaminate recycled water
 - Wash hands regularly, particularly after smoking
 - No chemical treatments for plants are available

New and Emerging Diseases Ralstonia Wilt

- **Cause:** Ralstonia solanacearum
 - races
 - biovars
- **Hosts**
 - Geranium
 - Many other herbaceous plants
 - Potato



New and Emerging Diseases Ralstonia Wilt

- **Control**
 - Start with clean transplants
 - Keep materials from different sources physically separated
 - Disinfest pruning tools
 - Commercial disinfectants
 - 10% bleach
 - 70% alcohol
 - Disinfest hands when working with plants

New and Emerging Diseases *Ralstonia* Wilt

- **Control**
 - If you suspect you have the disease, contact the PDDC/WI DATCP
 - Confirm the disease
 - Remove symptomatic plants
 - Remove co-mingled plants
 - Remove contaminated plant debris
 - Disinfest greenhouses after production

New and Emerging Diseases *Foliar Nematodes*

- **Cause:** *Aphelenchoides* spp.
- **Hosts**
 - Wide host range
 - Houseplants: African violets, ferns, mums, begonias
 - Landscape plants: Hosta, saxifrage relatives



New and Emerging Diseases *Foliar Nematodes*

- **Control**
 - Start with clean propagation materials
 - Keep materials from different sources physically separated
 - Disinfest tools, pots, benches, etc.
 - Commercial disinfectants
 - 10% bleach
 - 70% alcohol
 - Avoid overhead irrigation

New and Emerging Diseases *Foliar Nematodes*

- **Control**
 - Remove symptomatic plants
 - Remove contaminated plant debris
 - Disinfest contaminated areas
 - No chemical treatments for plants are available
 - Try hot water treatments (10 minutes at 125°F)

New and Emerging 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
 (608) 262-2863
pddc@plantpath.wisc.edu
<http://pddc.wisc.edu>
 Follow the clinic on Twitter @UWPDDC