

2014 ProGreen Plus Open House

Ten Diseases to Watch for in 2014

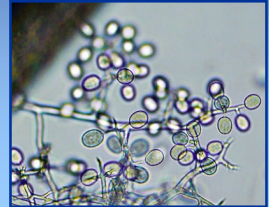
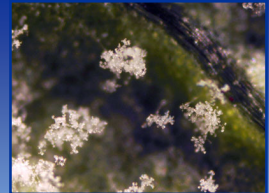
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Ten Diseases to Watch for in 2014 Impatiens Downy Mildew

- Cause: Plasmopara obducens
- Hosts
 - Standard garden impatiens (I. walleriana)
 - Balsam impatiens (I. balsamina)
 - Jewelweed (I. pallida, I. capensis)
 - New Guinea impatiens (I. hawkeri) (resistant/tolerant)
- Environmental trigger: Wet weather



Ten Diseases to Watch for in 2014 Impatiens Downy Mildew

- Control
 - Grow tolerant/resistant/immune plants
 - Start with clean transplants and seed
 - Keep materials from different sources physically separated
 - DO NOT grow impatiens in the same area every year
 - DO NOT overcrowd plants
 - DO NOT overhead water

Ten Diseases to Watch for in 2014 Impatiens Downy Mildew

- Control
 - Watch for disease on a regular basis
 - Bag and discard affected plants
 - Symptomatic plants
 - Asymptomatic surrounding plants
 - Disinfest contaminated materials
 - 10% bleach
 - 70% alcohol
 - Commercial disinfectants

Ten Diseases to Watch for in 2014 *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

Ten Diseases to Watch for in 2014 *Southern Blight*

- **Pathogen:** *Sclerotium rolfsii*
- **Hosts**
 - Many herbaceous annuals and perennials
 - Hosta
 - Bedding plants
 - Some woody ornamentals
- **Environmental trigger:** Mild winters



Ten Diseases to Watch for in 2014 *Southern Blight*

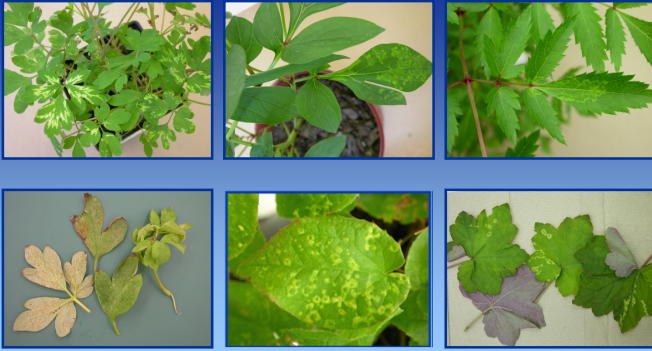
- **Control**
 - Avoid purchasing infected plants
 - Avoid cocoa mulch (?)
 - Remove infected (and healthy) plants
 - Disinfest contaminated materials
 - Use fungicides for control
 - Triadimefon
 - 14 – 28 day intervals
 - Pray for a cold winter!

Ten Diseases to Watch for in 2014 *Tobacco Rattle*

- **Cause:** Tobacco Rattle Virus
- **Hosts**
 - Herbaceous ornamentals
 - Hosta
 - Astilbe, bleeding heart, columbine, coral bells, daffodils, epimedium, gladiolus, hyacinth, marigold, peony, tulip, vinca
 - Vegetables
 - Beans, beet, pepper, potato, spinach

Ten Diseases to Watch for in 2014 *Tobacco Rattle*

- **Environmental trigger:** None
- **Transmission**
 - Stubby-root nematodes
 - *Trichodorus* spp.
 - *Paratrichodorus* spp.
 - Mechanical inoculation
 - Grafting
 - Seed



Anette Phibbs, WI DATCP

Ten Diseases to Watch for in 2014 Tobacco Rattle

- **Control**
 - **DO NOT** buy symptomatic plants
 - **Grow non-susceptible plants**
 - Annual phlox, carnation, devil's trumpet (downy thorn-apple), sweet William, zinnia, zombie cucumber
 - **Remove and destroy infected plants**

Ten Diseases to Watch for in 2014 Tobacco Rattle

- **Control**
 - **Disinfest contaminated materials**
 - Sodium dodecyl sulfate (sodium lauryl sulfate) + Alconox® (1% + 1%)
 - Trisodium phosphate
 - Alcohol dip followed by flaming
 - **DO NOT** attempt to control stubby-root nematodes

Ten Diseases to Watch for in 2014 Aster Yellows

- **Pathogen:** Aster yellows phytoplasma
- **Hosts**
 - Many plants in the Asteraceae (aster family)
 - Many plants in many other plant families
- **Environmental trigger:** None
- **Transmission:** Aster leafhopper



Ten Diseases to Watch for in 2014 Aster Yellows

- **Control**
 - Remove and destroy infected plants
 - Control leafhopper vector (?)

Ten Diseases to Watch for in 2014 Ralstonia Wilt

- **Cause:** Ralstonia solanacearum
 - races
 - biovars
- **Hosts**
 - Geranium
 - Many other herbaceous plants
 - Potato
- **Environmental trigger:** Milder winters



Ten Diseases to Watch for in 2014 Ralstonia Wilt

- **Control**
 - Start with clean propagation materials
 - Keep plants from multiple sources separated
 - Disinfest pruning tools and hands
 - Contact the PDDC if you believe you have found this disease!
 - Remove and destroy infected plants (with assistance from WI DATCP and USDA APHIS)

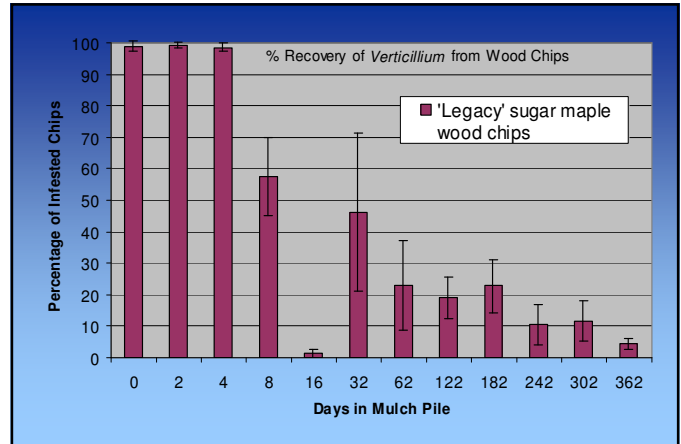
Ten Diseases to Watch for in 2014 Verticillium Wilt

- **Causes:** Verticillium dahliae
Verticillium albo-atrum
- **Hosts**
 - Many woody ornamentals (maple, ash, redbud, smoke bush)
 - Many herbaceous plants
 - Many vegetables (tomato, potato, eggplant)
- **Environmental trigger:** Wet weather



Ten Diseases to Watch for in 2014 *Verticillium Wilt*

- **Control**
 - Use appropriate plants in suspect areas
 - Pine, juniper, fir, spruce
 - Beech, birch, ginkgo, hackberry, hawthorn, hickory, honey locust, mountain ash, white oak, bur oak, poplar, serviceberry, sycamore, willow
 - Pretest soils/mulches/composts
 - Control broad-leaf weeds
 - Avoid municipal mulches



- **Wood Chips as an Inoculum Source**
 - **Amur maple**
 - 30.0%/25.0% (Trtd)
 - 0.0%/0.0% (Non-Trtd)
 - **Green Ash**
 - 23.7%/10.5% (Trtd)
 - 0.0%/0.0% (Non-Trtd)
 - **Redbud**
 - 10.7%/13.3% (Trtd)
 - 0.0%/0.0% (Non-Trtd)

Ten Diseases to Watch for in 2014 *Verticillium Wilt*

- **Control**
 - Prevent plant stress
 - Prune diseased (wilted) areas
 - Disinfest tools after use
 - Practice good general plant maintenance
 - Remove diseased plants
 - Destroy infected materials
 - Burn
 - Composting (?)

Ten Diseases to Watch for in 2014 "Cedar-Apple" Rusts

- **Cause:** *Gymnosporangium* spp.
- **Hosts**
 - Junipers
 - Rosaceous plants: apple, crabapple, hawthorn, quince, pear!
- **Environmental trigger:** Wet weather



Ten Diseases to Watch for in 2014 “Cedar-Apple” Rusts

- **Control**
 - Use resistant cultivars/varieties
 - Remove galls
 - Use fungicides to prevent infections
 - Ferbam, triadimefon
 - Mid May through mid June (rosaceous hosts)
 - Early July through August (juniper hosts)
 - 7-21 day application interval

Ten Diseases to Watch for in 2014 “Boxwood Dieback”

- **Causes: Many and varied**
 - Cold/winter injury
 - Small animal injury
 - Fungal pathogens
 - Volutella buxi (Volutella blight)
 - Cylindrocladium pseudonaviculatum (Box blight)
 - (Cylindrocladium buxicola)
- **Host: Boxwood**
- **Environmental trigger: Wet weather**



Ten Diseases to Watch for in 2014 “Boxwood Dieback”

- **Control**
 - Produce and use cold hardy varieties
 - ‘Green Gem’
 - ‘Green Mound’
 - ‘Wilson’ (Northern Charm™) (?)
 - ‘Glencoe’ (Chicagoland Green®) (?)
 - Water adequately
 - Reduce stress
 - Control small animal populations

Ten Diseases to Watch for in 2014 “Boxwood Dieback”

- **Control**
 - Be cautious when buying boxwood from areas where Cylindrocladium pseudonaviculatum is established
 - Inspect new plants for symptoms
 - Keep new plants isolated from established plants
 - Physically separate boxwood plantings with non-host species

Ten Diseases to Watch for in 2014 “Boxwood Dieback”

- **Control**
 - Space plants far apart
 - DO NOT overhead water
 - Prune out diseased branches
 - Disinfest pruning tools
 - Remove and destroy severely infected plants

Ten Diseases to Watch for in 2014 "Boxwood Dieback"

- **Control**
 - Use fungicides treatments
 - Azoxystrobin, chlorothalonil, fludioxonil, iprodione, kresoxim-methyl, mancozeb, pyraclostrobin, thiophanate-methyl, triflumidazole
 - 7 day application intervals

Ten Diseases to Watch for in 2014 Thousand Cankers Disease

- **Cause:** Geosmithia morbida
- **Hosts**
 - Black walnut
 - Other walnuts
- **Environmental trigger:** None
- **Transmission**
 - Walnut twig beetle
(Pityophthorus juglandis)

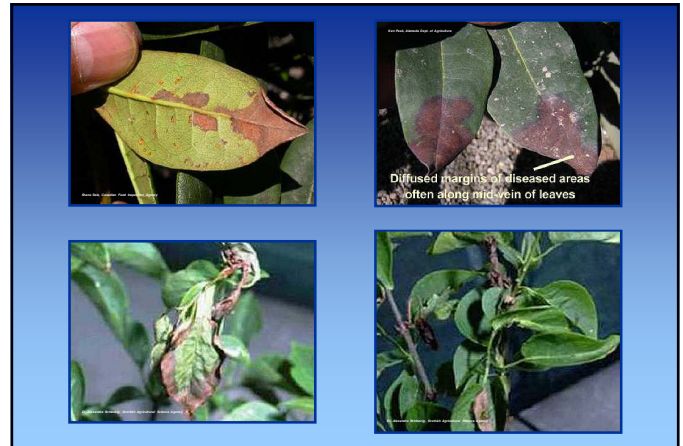
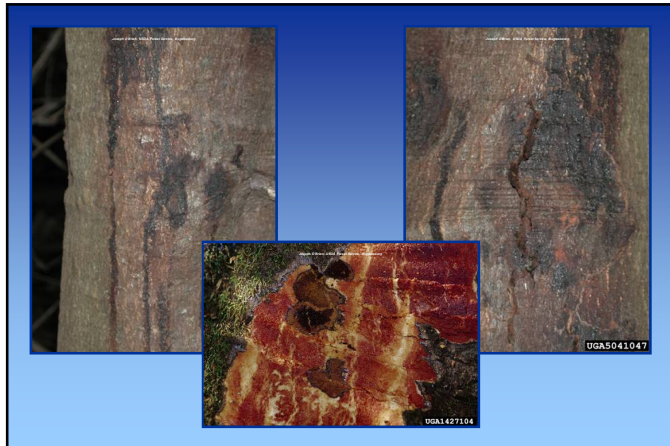


Ten Diseases to Watch for in 2014 Thousand Cankers Disease

- **Control**
 - DO NOT transport walnut wood/products from areas known to have the disease
 - Remove and destroy affected trees
 - No effective fungicide strategies known
 - No effective insecticide strategies known
 - Contact the PDDC if you believe you have found this disease!

Ten Diseases to Watch for in 2014 Ramorum Blight (Sudden Oak Death)

- **Cause:** Phytophthora ramorum
- **Hosts**
 - Coast live oak, California black oak, Shreve oak, tanoak, big leaf maple, rhododendron, huckleberry, California bay laurel, madrone, manzanita, huckleberry, California honeysuckle, toyon, California buckeye, California coffeeberry, arrow wood, Viburnum spp., and many others
 - Northern red oak, northern pin oak (by inoculation)
 - Host list continues to expand



Ten Diseases to Watch for in 2014 Ramorum Blight (Sudden Oak Death)

• *Control*

- *Buy plants from a reputable sources*
- *Carefully inspect plants prior to purchase*
- *Keep new plants isolated*
- *Contact the PDDC if you believe you have found this disease!*
- *Remove and destroy infected plants (with assistance from WI DATCP and USDA APHIS)*

Ten Diseases to Watch for in 2014 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