

2014 Polk County Talk

Ten Diseases to Watch for in 2014

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Ten Diseases to Watch for in 2014 Powdery Mildews

• Cause

- *Erysiphe* spp. – *Microsphaera* spp.
- *Uncinula* spp. – *Sphaerotheca* spp.
- *Phyllactinia* spp. – *Podosphaera* spp.
- *Blumeria* spp. – *Brasiliomyces* spp.
- *Oidium* spp. – *Ovulariopsis* spp.

• Hosts: Virtually everything

• Environmental trigger: High humidity



Ten Diseases to Watch for in 2014 Powdery Mildews

• Control

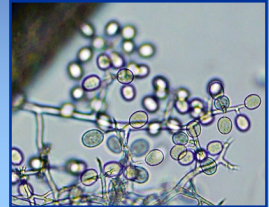
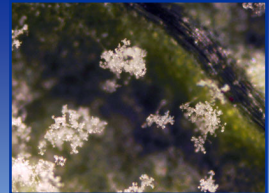
- Remove diseased plant material and debris
 - Burn (where allowed)
 - Deep bury
 - Hot compost
- Reduce humidity
 - Plant less densely
 - Thin existing stands
- Use resistant cultivars/varieties

Ten Diseases to Watch for in 2014 Powdery Mildews

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

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
 - Mancozeb
 - Apply at 7 day application intervals

Ten Diseases to Watch for in 2014 Tomato Leaf Blights

- **Causes**
 - Alternaria solani (early blight)
 - Septoria lycopersici (Septoria leaf spot)
 - Phytophthora infestans (late blight)
- **Hosts**
 - Tomato
 - Potato (early blight, late blight)
- **Environmental trigger: Wet weather**



Ten Diseases to Watch for in 2014 Tomato Leaf Blights

- **Control (early blight, Septoria leaf spot)**
 - Remove and destroy infested debris
 - Move tomatoes to new location (?)
 - Plant resistant varieties (?)
 - Space plants far apart
 - DO NOT overhead water
 - DO NOT overmulch
 - Remove infected leaf tissue (?)

Ten Diseases to Watch for in 2014 Tomato Leaf Blights

- **Control (early blight, Septoria leaf spot)**
 - Use fungicides to prevent infections
 - Chlorothalonil, copper
 - Applications every 7-14 days

Ten Diseases to Watch for in 2014 Tomato Leaf Blights

- **Control (late blight)**
 - Remove and destroy
 - Infected plants, fruits, tubers
 - Volunteer tomato and potato plants
 - Weed hosts
 - **DO NOT** use last year's potatoes as seed potatoes
 - **DO** use certified seed potatoes

Ten Diseases to Watch for in 2014 Tomato Leaf Blights

- **Control (late blight)**
 - 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'

Ten Diseases to Watch for in 2014 Tomato Leaf Blights

- **Control (late blight)**
 - Use fungicides to prevent infections
 - Chlorothalonil, copper
 - Applications every 7-14 days

Ten Diseases to Watch for in 2014 Tobacco Rattle

- **Cause: Tobacco Rattle Virus**
- **Hosts**
 - **Herbaceous ornamentals**
 - Astilbe, bleeding heart, columbine, coral bells, daffodils, epimedium, gladiolus, hyacinth, hosta, 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

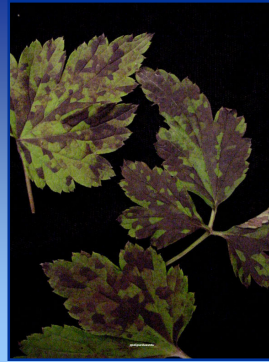


Ten Diseases to Watch for in 2014 Aster Yellows

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

Ten Diseases to Watch for in 2014 Foliar Nematode

- Cause: Aphelenchoides spp.
- Hosts
 - Many types of herbaceous plants
 - Houseplants
 - African violets, ferns, chrysanthemum
 - Landscape plants
 - Hosta, coral bells, miterwort, begonia



Ten Diseases to Watch for in 2014 Foliar Nematode

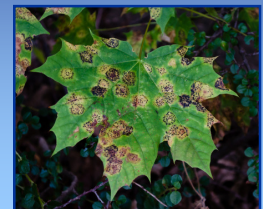
- Control
 - Inspect plants prior to purchase for symptoms
 - Avoid overhead irrigation
 - Remove symptomatic plants and infested plant debris
 - Burn (where allowed)
 - Deep bury (landfill)
 - Hot compost

Ten Diseases to Watch for in 2014 Foliar Nematode

- Control
 - Disinfest contaminated materials
 - 10% bleach
 - 70% alcohol
 - Commercial disinfectants
 - Hot water treatments (10 minutes at 125°F)

Ten Diseases to Watch for in 2014 Tar Spot

- Causes
 - Rhytisma americanum
 - Rhytisma acerinum
- Hosts: Maples
- Environment trigger: Wet weather



Ten Diseases to Watch for in 2014 Tar Spot

- **Control**
 - DO NOT panic
 - Remove diseased leaves
 - Use fungicides to prevent infections
 - Copper-containing fungicides
 - 3 applications at bud break, 1/2 expansion of leaves, full leaf expansion

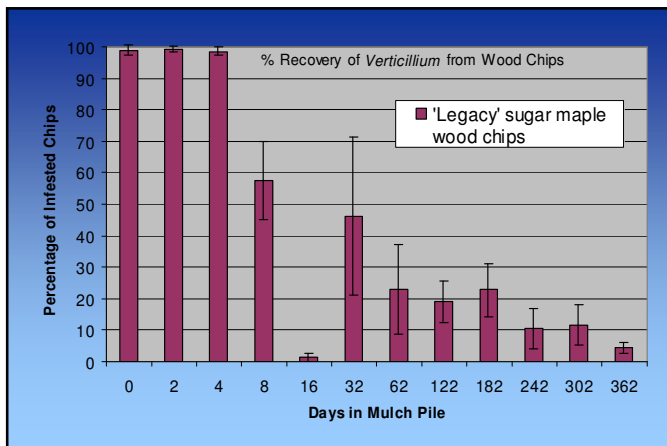
Ten Diseases to Watch for in 2014 Verticillium Wilt

- **Causes**
 - Verticillium dahliae
 - Verticillium albo-atrum
- **Hosts**
 - Many woody ornamentals
 - Many herbaceous plants
 - Many vegetables
- **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

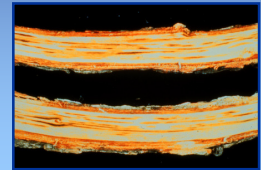
- **Control**
 - Prevent plant stress
 - Prune diseased (wilted) areas
 - Disinfest tools after use
 - Practice good general plant maintenance
 - Remove diseased plants
 - Destroy infected materials
 - Burn
 - Composting (?)

Ten Diseases to Watch for in 2014 Oak Wilt

- **Cause**
 - *Ceratocystis fagacearum*
 - *Chalara* sp.
- **Hosts**
 - Oaks
 - Chinese chestnut
- **Environmental trigger: Wet weather**

Ten Diseases to Watch for in 2014 Oak Wilt

- **Transmission**
 - Oak bark beetles
 - *Pseudopityophthorus minutissimus*
 - *Pseudopityophthorus pruinosis*
 - Sap beetles
 - *Carpophilus* spp.
 - *Colopterus* spp.
 - *Cryptarcha* spp.
 - Root grafts
 - *Epuraea* spp.
 - *Clischrochilus* spp.



Ten Diseases to Watch for in 2014 Oak Wilt

- **Control**
 - Avoid pruning or wounding oaks when they are physiologically active
 - Paint wounds as needed
 - Remove diseased (and healthy) oaks
 - Disrupt root grafts
 - Use oak wood appropriately

Ten Diseases to Watch for in 2014 *Oak Wilt*

- **Control**
 - Use fungicide injections
 - Propiconazole
 - Prophylactic or therapeutic
 - Every 12-24 months

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 *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