

Winter Seminar Series 2019

Ten Plant Diseases to Watch for in 2019

Brian D. Hudelson

Department of Plant Pathology

University of Wisconsin-Madison/Extension



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Ten Plant Diseases to Watch for in 2019 Boxwood Blight

- Cause
 - Calonectria pseudonaviculata
 - Cylindrocladium pseudonaviculatum (Cylindrocladium buxicola)
- Hosts
 - Boxwood
 - Pachysandra
- Favorable Environment: Cool, wet weather

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Ten Plant Diseases to Watch for in 2019 Boxwood Blight

- Control
 - Be cautious about holiday wreaths
 - Use shrubs other than boxwood
 - Buy locally produced boxwood
 - Grow resistant varieties
 - Korean littleleaf boxwood 'Exeles' Wedding Ring®
 - Korean littleleaf 'Winter Gem'
 - Buy from a reputable supplier
 - Avoid symptomatic plants

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Ten Plant Diseases to Watch for in 2019 Boxwood Blight

- Control
 - Keep new plants isolated
 - DO NOT replant in an area where boxwood blight has been a problem
 - Physically separate boxwood plantings
 - Space plants far apart
 - DO NOT overhead water
 - Prune out diseased branches

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Ten Plant Diseases to Watch for in 2019 Boxwood Blight

- Control
 - Disinfect pruning tools and other items
 - 70% alcohol
 - Commercial disinfectants
 - 10% bleach
 - Remove and destroy infected plants
 - Burn (where allowed)
 - Deep bury (two feet)/Double bag and landfill
 - DO NOT compost

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Ten Plant Diseases to Watch for in 2019 Boxwood Blight

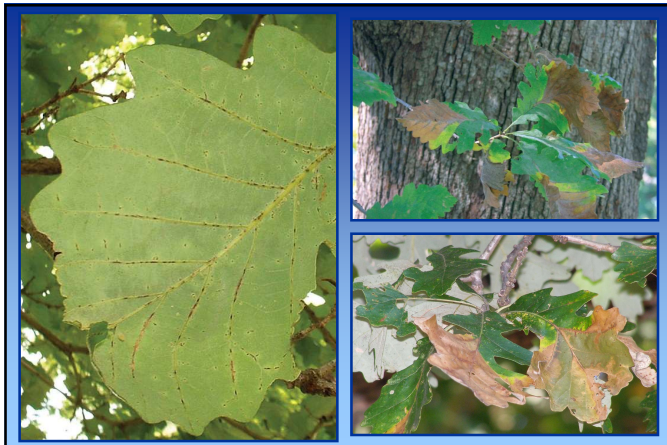
- **Control**
 - Use fungicides to prevent infections
 - Chlorothalonil (alone or with propiconazole or thiophanate-methyl), fludioxonil, metconazole, tebuconazole
 - 7 day application intervals
 - Alternate active ingredients (FRAC codes)
 - Contact the PDDC if you believe you have found boxwood blight!

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Ten Plant Diseases to Watch for in 2019 Bur Oak Blight

- **Cause:** Tubakia iowensis
- **Host:** Bur oak
 - Quercus macrocarpa var. oliviformis
 - Quercus macrocarpa var. macrocarpa
- **Favorable Environment**
 - Cool, wet weather
 - Stress?

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Ten Plant Diseases to Watch for in 2019 Bur Oak Blight

- **Control**
 - Reduce stress
 - Water stress
 - Nutrient stress (chlorosis)
 - Diseases/insect pests
 - Oak wilt
 - Armillaria root disease
 - Leaf diseases (anthracnose, Tubakia leaf spot, etc.)
 - Two-lined chestnut borer

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Ten Plant Diseases to Watch for in 2019 Bur Oak Blight

- **Control**
 - Use fungicide injections
 - Propiconazole
 - Prophylactic or therapeutic
 - Late May or early June
 - Every 12-24 months

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Ten Plant Diseases to Watch for in 2019 Phytoplasmas Diseases

- **Examples**
 - Aster yellows
 - Ash yellows
- **Causes: Miscellaneous phytoplasmas**
- **Hosts**
 - Many herbaceous plants (aster yellows)
 - Ash, lilac (ash yellows)
 - “The more you look, the more you find.”

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Ten Plant Diseases to Watch for in 2019 Phytoplasma Diseases

- **Favorable environment**
 - High leafhopper populations



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Ten Plant Diseases to Watch for in 2019 Phytoplasma Diseases

- **Control**
 - Remove infected plants
 - Destroy infected materials
 - Compost
 - Bury
 - Burn (where allowed)
 - Avoid growing susceptible plants
 - Use insecticides for leafhopper control (?)

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Ten Plant Diseases to Watch for in 2019 Verticillium Wilt

- **Causes**
 - Verticillium dahlia
 - Verticillium albo-atrum
 - Verticillium nonalfalfae
 - Other Verticillium spp.
 - New Verticillium spp.

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Ten Plant Diseases to Watch for in 2019 *Verticillium Wilt*

• *Hosts*

- *Many woody ornamentals*
 - *Common:* Maple, ash, redbud, smokebush
 - *Newer:* Seven son flower, wafer-ash, buttonbush
- *Many herbaceous plants*
 - *Common:* Purple coneflower, blazing star
 - *New:* Vervain ('Quartz White')
- *Many vegetables*
 - Tomato, potato, pepper, EGGPLANT, cucurbits

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Ten Plant Diseases to Watch for in 2019 *Verticillium Wilt*

• *Favorable environment*

- *Cool, wet weather (for infection)*
- *Hot, dry weather (for symptom development)*

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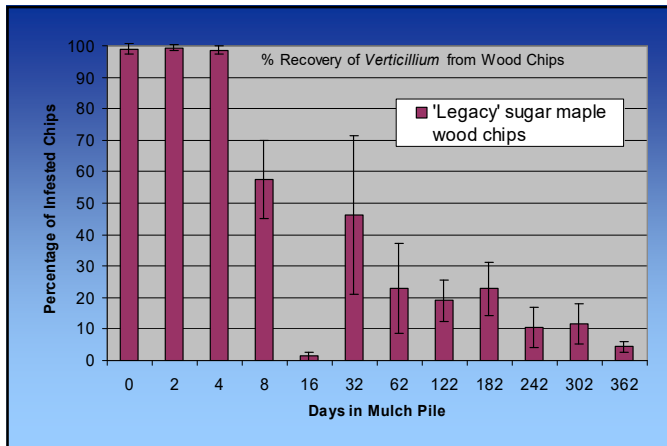
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Ten Plant Diseases to Watch for in 2019 *Verticillium Wilt*


• *Control*

- *Avoid Verticillium-infested areas*
- *Pretest soils/mulches/composts for the presence of Verticillium*
- *Fumigate heavily infested soils*
- *Keep broad-leaf weeds under control*
- *Avoid municipal mulches*

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

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Ten Plant Diseases to Watch for in 2019 *Verticillium* Wilt

- **Control**
 - Use immune/resistant plants
 - **CONIFERS:** Pines, spruces, firs, junipers
 - **DECIDUOUS TREES/SHRUBS:** Beech, birch, ginkgo, hackberry, hawthorn, hickory, honey locust, mountain ash, white oak, bur oak, poplar, serviceberry, sycamore, willow
 - **HERBACEOUS ORNAMENTALS:** Call for info.
 - Prevent stress
 - Prune diseased (wilted) areas

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Ten Plant Diseases to Watch for in 2019 *Verticillium* Wilt

- **Control**
 - Decontaminate pruning tools
 - 70% alcohol (spray disinfectants)
 - Commercial disinfectants
 - 10% bleach
 - Make plants comfortable until they die
 - Remove and destroy diseased plants
 - Burn (where allowed)
 - DO NOT use fungicides

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Ten Plant Diseases to Watch for in 2019 *Fire Blight*

- **Cause:** *Erwinia amylovora*
- **Hosts**
 - Many woody rosaceous plants
 - Apple, crabapple, pear, mountain ash, cotoneaster
- **Favorable environment**
 - Wet (but not too wet) weather
 - Hail (or other wounding)

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Ten Plant Diseases to Watch for in 2019 **Fire Blight**

- **Control**
 - Plant resistant varieties where available
 - “Top Ornamental Crabapples for Wisconsin” (<https://pddc.wisc.edu/fact-sheet-listing-all/>)
 - “Apple Cultivars for Wisconsin” (<https://learningstore.uwex.edu/Assets/pdfs/A2105.pdf>)
 - “Home Fruit Cultivars for Northern Wisconsin” (<https://learningstore.uwex.edu/Assets/pdfs/A2488.pdf>)
 - “Home Fruit Cultivars for Southern Wisconsin” (<https://learningstore.uwex.edu/Assets/pdfs/A2582.pdf>)

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Ten Plant Diseases to Watch for in 2019 **Fire Blight**

- **Control**
 - Prune diseased branches
 - Decontaminate pruning tools
 - 70% alcohol (spray disinfectants)
 - Commercial disinfectants
 - 10% bleach
 - Destroy infected materials
 - Burn (where allowed)
 - Deep bury

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Ten Plant Diseases to Watch for in 2019 **Fire Blight**

- **Control**
 - DO NOT over-fertilize with nitrogen
 - Use bactericides to prevent infections (?)
 - Copper-containing fungicides, streptomycin
 - Apply during flowering
 - Apply every 7-14 days (3-4 days)

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Ten Plant Diseases to Watch for in 2019 **Bacterial Wetwood**

- **Cause: Miscellaneous bacteria**
 - Enterobacterium spp.
 - Klebsiella spp.
 - Pseudomonas spp.
- **Hosts**
 - Common: Elm, birch, poplar
 - Other: Aspen, maple, mulberry
- **Favorable Environment: None**

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Ten Plant Diseases to Watch for in 2019 **Bacterial Wetwood**

- **Control**
 - DO NOT panic
 - Learn to ignore the problem
 - Insert tubing to help with drainage
 - DO NOT use chemical treatments

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Ten Plant Diseases to Watch for in 2019 *Armillaria Root Disease*

- **Pathogens:** *Armillaria* spp.
- **Hosts**
 - Many trees and shrubs
 - Some herbaceous plants
- **Favorable environment**
 - Drought stress
 - Stress due to defoliation
 - Other stresses

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Ten Plant Diseases to Watch for in 2019 *Armillaria Root Disease*

- **Control**
 - Reduce tree/shrub stress where possible
 - Water adequately
 - Fertilize properly
 - Control foliar pathogens
 - Control foliar insect pests
 - DO NOT wound trees
 - Remove *Armillaria*-infested materials
 - DO NOT use fungicides

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Ten Plant Diseases to Watch for in 2019 *Southern Blight*

- **Pathogen:** *Sclerotium rolfsii*
- **Hosts**
 - Anything herbaceous
 - Some (particularly young) woody ornamentals
- **Favorable environment**
 - Warm soil temperatures
 - Wet soils

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Ten Plant Diseases to Watch for in 2019 Southern Blight

- **Control**
 - DO NOT buy infected/infested plants
 - Avoid cocoa mulch (?)
 - Remove infected plants, mulch and soil
 - Double bag
 - Landfill
 - Disinfest contaminated materials
 - 70% alcohol
 - Commercial disinfectants
 - 10% bleach

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Ten Plant Diseases to Watch for in 2019 Southern Blight

- **Control**
 - Amend soil with organic matter (?)
 - Use fungicides for control
 - Contract with a professional pesticide applicator
 - Azoxystrobin, fludioxonil, fluoxastrobin, flutolanil, mancozeb, PCNB, propiconazole, tebuconazole, thiophanate-methyl, triadimefon
 - Alternate active ingredients (FRAC codes)
 - Apply 14 – 28 day intervals
 - Pray for a really, really, REALLY cold winter

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Ten Plant Diseases to Watch for in 2019 Tobacco Rattle

- **Cause: Tobacco Rattle Virus**
- **Hosts**
 - Ornamentals
 - Astilbe, bleeding heart, columbine, coral bells, daffodils, epimedium, gladiolus, hyacinth, marigold, peony, tulip, vinca
 - Vegetables
 - Beans, beet, pepper, potato, spinach
- **Favorable environment: None**

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Ten Plant Diseases to Watch for in 2019 Tobacco Rattle

- **Transmission**
 - Plant propagation
 - Stubby-root nematodes
 - Trichodorus spp.
 - Paratrichodorus spp.
 - Mechanical
 - Grafting
 - Seed

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Ten Plant Diseases to Watch for in 2019 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
 - Burn (where allowed)
 - Deep bury
 - Hot compost

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Ten Plant Diseases to Watch for in 2019 Tobacco Rattle

- **Control**
 - Disinfest contaminated materials
 - 1% Sodium dodecyl sulfate (sodium lauryl sulfate) + 1% Alconox® (2½ Tbsp + 2¾ Tbsp/gal)
 - 20% low fat dry milk (Carnation®) + 0.1% polysorbate 20 (9½ cups + ¾ tsp/gal)
 - Trisodium phosphate (14 dry oz/gal)
 - Alcohol dip followed by flaming

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Ten Plant Diseases to Watch for in 2019 Tobacco Rattle

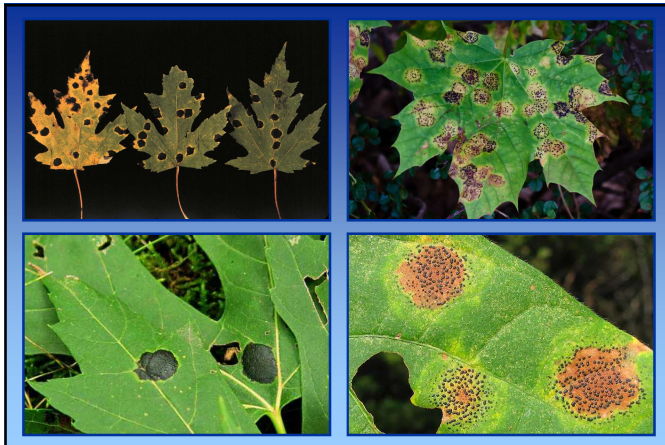
- **Control**
 - DO NOT use chemical controls on plants
 - DO NOT attempt to control stubby-root nematodes

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Ten Plant Diseases to Watch for in 2019 Tar Spot

- **Causes:** *Rhytisma americanum*
Rhytisma acerinum
- **Hosts:** Maples
- **Favorable environment:** Cool, wet weather

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Ten Plant Diseases to Watch for in 2019 Tar Spot

- **Control**
 - DO NOT panic
 - Remove/destroy diseased leaves
 - Burn (where allowed)
 - Deep bury
 - Hot compost
 - Use fungicides to prevent infections
 - Copper-containing fungicides
 - Apply at bud break, 1/2 and full leaf expansion

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Ten Plant Diseases to Watch for in 2019 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@wisc.edu
<https://pddc.wisc.edu>

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