

LGMSC 2019

Ten Plant Diseases to Watch for in 2019

Brian D. Hudelson
Department of Plant Pathology
University of Wisconsin-Madison/Extension



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
 - Buy from a reputable supplier
 - Avoid symptomatic plants

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

Ten Plant Diseases to Watch for in 2019 Boxwood Blight

- Control
 - Grow resistant varieties
 - Hybrid boxwood 'Green Gem'
 - Common boxwood 'Katerberg' North Star®
 - Korean littleleaf boxwood
 - 'Eseles' Wedding Ring®
 - 'Franklin's Gem'
 - 'Winter Gem'
 - 'Wintergreen'



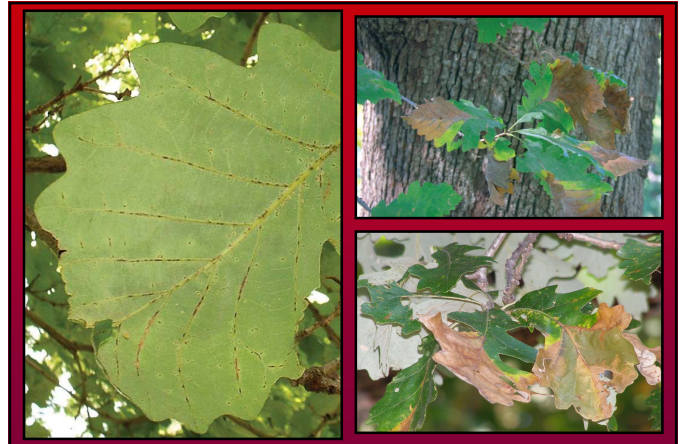
Ten Plant Diseases to Watch for in 2019 Boxwood Blight

- 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

Ten Plant Diseases to Watch for in 2019

Boxwood Blight

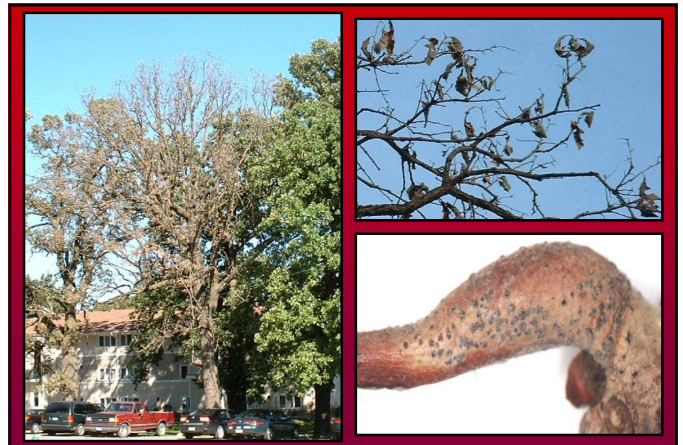
- **Control**
 - Disinfest pruning tools and other items (70% alcohol, 10% bleach, disinfectants)
 - Remove and destroy infected plants
 - Burn (where allowed)
 - Deep bury (two feet)/Double bag and landfill
 - DO NOT compost



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!



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?

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

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



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.”



Ten Plant Diseases to Watch for in 2019 Phytoplasmas Diseases

- **Favorable environment**
 - High leafhopper populations



Ten Plant Diseases to Watch for in 2019 Phytoplasmas Diseases

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

Ten Plant Diseases to Watch for in 2019 Verticillium Wilt

• Causes

- *Verticillium dahliae*
- *Verticillium albo-atrum*
- *Verticillium nonalfalfae*
- Other *Verticillium* spp.
- New *Verticillium* spp.



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



Ten Plant Diseases to Watch for in 2019 Verticillium Wilt

• Favorable environment

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

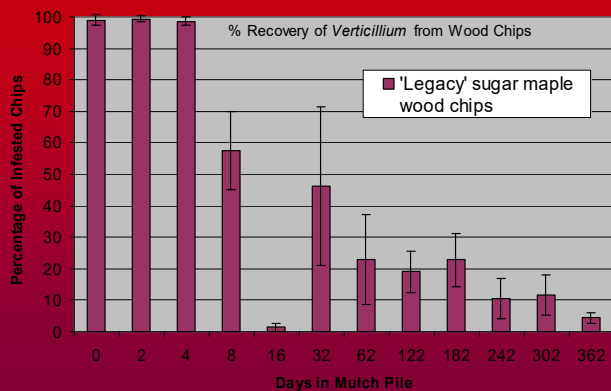


Ten Plant Diseases to Watch for in 2019 Verticillium Wilt

- **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

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



Ten Plant Diseases to Watch for in 2019 Verticillium Wilt

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



• 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 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)



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)

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>)

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**

Ten Plant Diseases to Watch for in 2019 Fire Blight

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



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



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

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



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



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

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, 10% bleach, disinfectants)

Ten Plant Diseases to Watch for in 2019 Tobacco Rattle

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

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



Ten Plant Diseases to Watch for in 2019 Tobacco Rattle

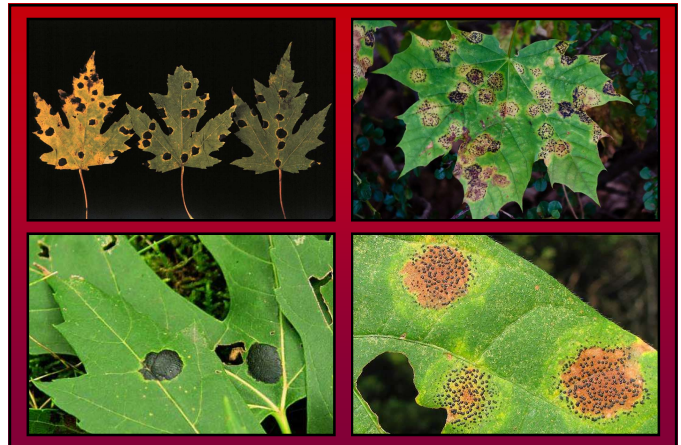
- **Control**
 - DO NOT buy symptomatic plants
 - Grow non-susceptible plants
 - Annual phlox, carnation, devil's trumpet (downy thorn-apple), sweet William, zinnia, zombie cucumber
 - Remove and destroy infected plants
 - Burn (where allowed)
 - Deep bury
 - Hot compost

Ten Plant Diseases to Watch for in 2019 Tar Spot

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

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 + ¼ tsp/gal)
 - Trisodium phosphate (14 dry oz/gal)
 - Alcohol dip followed by flaming



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

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

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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