

LGMSC 2020**New and Emerging
Landscape Plant Diseases****Brian D. Hudelson****Department of Plant Pathology
University of Wisconsin-Madison/Extension****New and Emerging Plant Diseases
Boxwood Blight**

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

**New and Emerging Plant Diseases
Boxwood Blight**

- **Control**
 - Be cautious about holiday wreaths
 - Grow shrubs other than boxwood
 - Buy from a reputable supplier
 - Buy locally produced boxwood

**New and Emerging Plant Diseases
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'

**New and Emerging Plant Diseases
Boxwood Blight**

- **Control**
 - DO NOT replant in an area where boxwood blight has been a problem
 - Avoid symptomatic plants
 - Keep new plants isolated
 - Space plants far apart
 - DO NOT overhead water

New and Emerging Plant Diseases Boxwood Blight

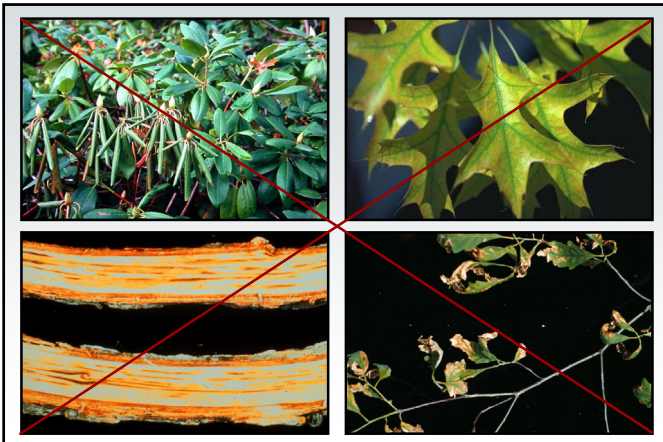
- **Control**
 - Prune out diseased branches
 - Decontaminate (70% alcohol, commercial disinfectants)
 - Remove and destroy infected plants
 - Burn (where allowed)
 - Deep bury (two feet)/Double bag and landfill
 - DO NOT compost

New and Emerging Plant Diseases Boxwood Blight

- **Control**
 - Use fungicides to prevent infections
 - Chlorothalonil (alone or with propiconazole or thiophanate-methyl), fludioxonil, metconazole, tebuconazole
 - Alternate active ingredients (FRAC codes)
 - Apply at 7 day intervals
 - Contact the PDDC if you suspect you have seen this disease

New and Emerging Plant Diseases Sudden Oak Death (Ramorum Blight)

- **Cause:** *Phytophthora ramorum*
- **Hosts**
 - A wide range of woody and herbaceous ornamentals
 - Rhododendrons/Azaleas
 - Roses ('Double Red Knockout')
 - Viburnums
 - Lilacs
 - Oaks



New and Emerging Plant Diseases Sudden Oak Death (Ramorum Blight)

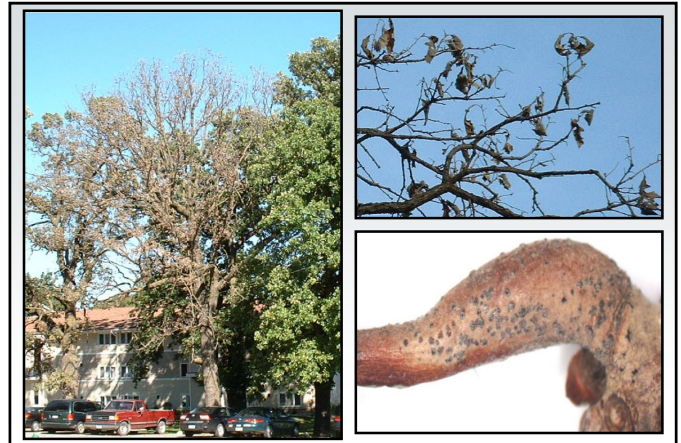
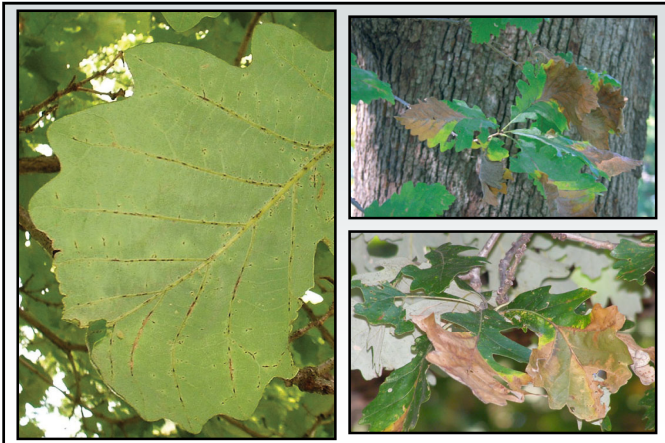
- **Control**
 - Buy woody ornamentals from a reputable source
 - Inspect plants prior to purchase for symptoms of sudden oak death
 - Keep new plants isolated from established plants

New and Emerging Plant Diseases Sudden Oak Death (Ramorum Blight)

- **Control**
 - Remove and destroy infected plants
 - Decontaminate (70% alcohol, 10% bleach, commercial disinfectants)
 - Contact the PDDC if you believe you have seen this disease

New and Emerging Plant Diseases Bur Oak Blight

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



New and Emerging Plant Diseases 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

New and Emerging Plant Diseases Bur Oak Blight

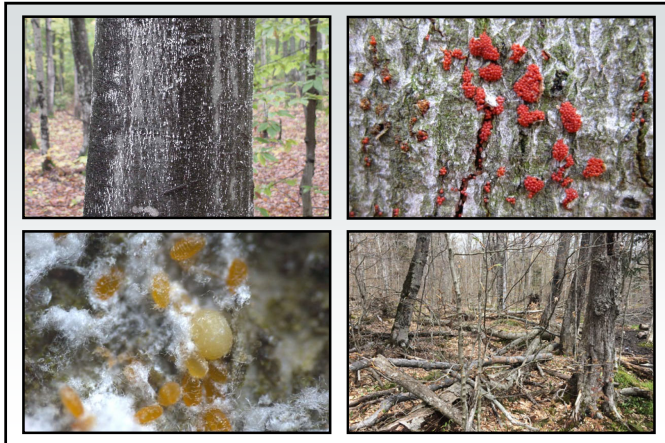
- **Control**
 - Use fungicide injections
 - Propiconazole
 - Prophylactic
 - Late May or early June
 - Every 12-24 months

New and Emerging Plant Diseases Beech Bark Disease

- **Causes**
 - *Neonectria faginata*
 - *Neonectria ditissima*
 - *Bionectria ochroleuca*
- **Hosts**
 - American beech
 - European beech

New and Emerging Plant Diseases Beech Bark Disease

- **Favorable Environment:** None
- **Insect Contributors**
 - Woolly beech scale
(*Cryptococcus fagisuga*)
 - American beech scale
(*Xylococcus betulae*)



New and Emerging Plant Diseases Beech Bark Disease

- **Control**
 - Limit movement of beech wood (firewood)
 - Remove trees in healthy stands
 - Eliminate more susceptible trees (older, structurally unsound, rough-barked)
 - Increase diversity of forest composition
 - Remove affected trees in diseased stands
 - Thins the stand potentially affecting scale levels
 - Limits tree fall/increases wood marketability

New and Emerging Plant Diseases Beech Bark Disease

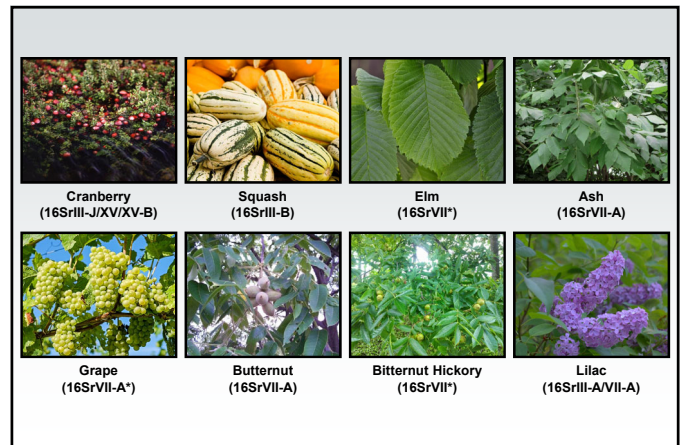
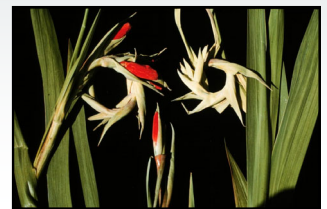
- **Control**
 - Reduce tree stress
 - Water stress
 - Nutrient stress
 - Root disturbance
 - Manage scale infestations
 - Water sprays
 - Use insecticides/insecticidal soaps
 - Hope for eventual resistant varieties

New and Emerging Plant Diseases Phytoplasma 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.”

New and Emerging Plant Diseases Phytoplasma Diseases

- Favorable environment: None
- Transmission: Leafhoppers



New and Emerging Plant Diseases Phytoplasma Diseases

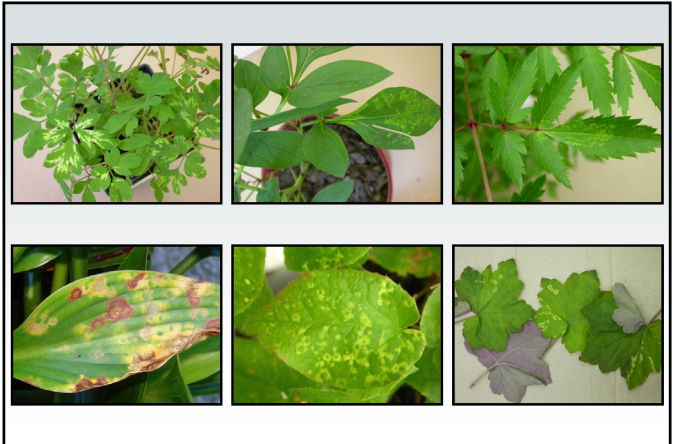
- Control
 - Remove infected plants
 - Destroy infected materials
 - Compost
 - Bury
 - Burn (where allowed)
 - Avoid growing susceptible plants
 - Use insecticides for leafhopper control (?)

New and Emerging Plant Diseases 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

New and Emerging Plant Diseases Tobacco Rattle

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



New and Emerging Plant Diseases 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

New and Emerging Plant Diseases Tobacco Rattle

- **Control**
 - Decontaminate
 - 1% Sodium dodecyl sulfate (sodium lauryl sulfate) + 1% Alconox® (2½ Tbsp + 2¼ 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

New and Emerging Plant Diseases Tobacco Rattle

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

New and Emerging Plant Diseases Thousand Cankers Disease

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

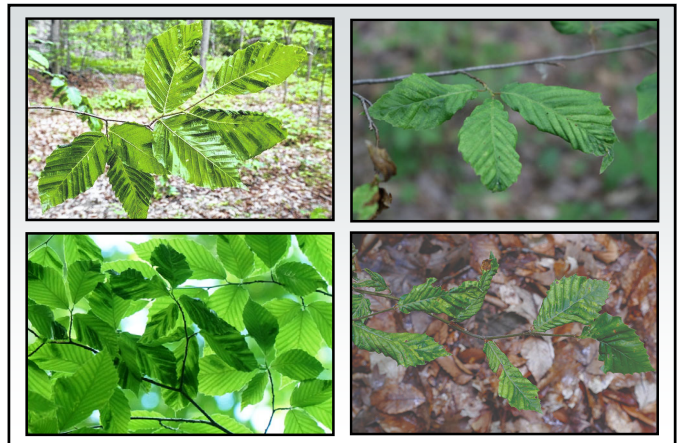


New and Emerging Plant Diseases Thousand Cankers Disease

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

New and Emerging Plant Diseases Beech Leaf Disease

- **Cause:** *Litylenchus crenatae* subsp. *mccannii*
- **Hosts**
 - American beech
 - European beech
 - Asian beech
- **Favorable environment:** None



New and Emerging Plant Diseases Beech Leaf Disease

- **Control**
 - Limit movement of beech wood
 - Avoid symptomatic nursery stock
 - Remove affected trees
 - Hope for eventual resistant varieties
 - Contact the PDDC if you believe you have seen this disease

New and Emerging Plant 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@wisc.edu
<https://pddc.wisc.edu>
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