

2023 PDDC Plant Disease Talks

New and Emerging Plant Diseases

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New and Emerging Plant Diseases Lipstick Rust (Japanese Apple Rust)

- Pathogen: *Gymnosporangium yamadae*
- Hosts
 - Junipers
 - *Juniperus chinensis*
 - *Juniperus chinensis* var. *procumbens*
 - *Juniperus chienensis* var. *sargentii*
 - *Juniperus squamata*

New and Emerging Plant Diseases Lipstick Rust (Japanese Apple Rust)

- Hosts
 - *Malus* spp.
 - *M. asiatica*
 - *M. halliana*
 - *M. platycarpa*
 - *M. pumila* var. *domestica*
 - *M. spontanea*
 - *M. toringo*
 - *M. yunnanensis*
 - *M. baccata*
 - *M. micromalus*
 - *M. prunifolia*
 - *M. scheideckeri*
 - *M. theifera*
 - *M. transitoria*
- Favorable environment: Wet weather



New and Emerging Plant Diseases Lipstick Rust (Japanese Apple Rust)

- Control
 - Grow only junipers or rosaceous hosts
 - Carefully inspect junipers prior to purchase
 - Remove galls
 - Decontaminate pruning tools (70% alcohol, disinfectants, bleach)

New and Emerging Plant Diseases Lipstick Rust (Japanese Apple Rust)

- Control
 - Destroy infected materials
 - Burn (where allowed)
 - Deep bury
 - DO NOT use fungicides
 - Contact the PDDC if you suspect you have seen this disease

New and Emerging Plant Diseases Boxwood Blight

- Pathogen
 - *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'
 - 'Karzgreen' (Green Ice®)
 - Japanese littleleaf boxwood
 - 'Jim Stauffer'
 - 'Little Missy'
 - 'Winter Gem'

New and Emerging Plant Diseases Boxwood Blight

- Control
 - Grow resistant varieties
 - Korean littleleaf boxwood
 - 'Eseles' (Wedding Ring®)
 - 'Franklin's Gem'
 - 'Pincushion'
 - 'Wee Willie'
 - 'Winter Beauty'
 - '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 Ralstonia wilt

- **Pathogen:** *Ralstonia solanacearum*
 - races
 - biovars
- **Hosts**
 - Geranium
 - Many other herbaceous plants
 - Potato
- **Favorable environment:** Warm weather

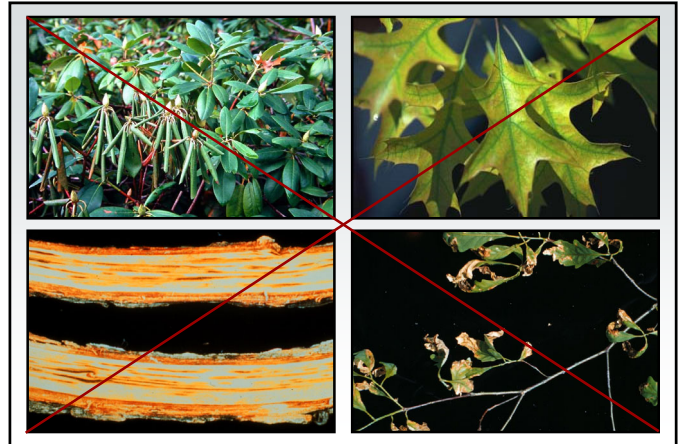


New and Emerging Plant Diseases Ralstonia wilt

- **Control**
 - Start with clean propagation materials
 - Follow strict sanitation procedures when working with plant materials
 - Keep plants from different sources separated
 - Disinfect pruning tools
 - Disinfect hands when working with plants
 - Contact the PDDC if you suspect you have seen this disease

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

- **Pathogen:** *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
Ramorum Blight (Sudden Oak Death)

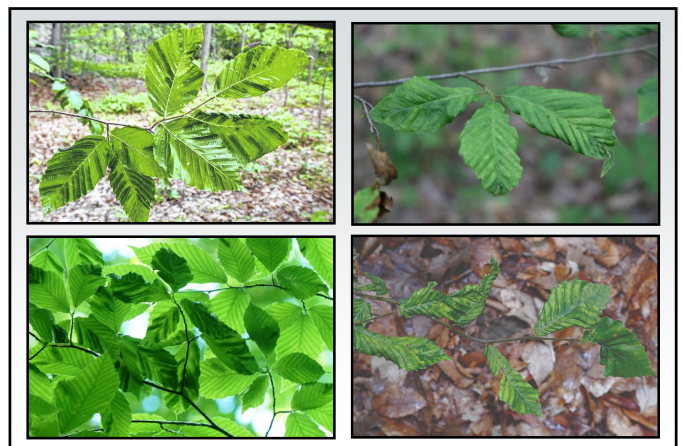
- **Control**
 - Buy woody ornamentals from a reputable source
 - Inspect plants prior to purchase for symptoms of sudden oak death
 - Keep new plants isolated from established plants

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

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

New and Emerging Plant Diseases
Beech Leaf Disease

- **Pathogen:** *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 Thousand Cankers Disease

- Pathogen: *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 Late Blight

- Pathogen: *Phytophthora infestans*
- Hosts
 - Potato
 - Tomato
- Favorable environment: Cool, wet weather



New and Emerging Plant Diseases Late Blight

- **Control**
 - Remove any infected plants and plant parts
 - Infected tomato/potato plants including fruits and tubers
 - Volunteer tomato and potato plants
 - Weed hosts
 - Destroy any infected plants and plant parts
 - Burn (where allowed)
 - Double bag and landfill

New and Emerging Plant Diseases Late Blight

- **Control**
 - DO NOT use last year's potatoes as seed
 - DO use certified seed potatoes
 - Grow resistant tomato varieties
 - “Late Blight Management in Tomato with Resistant Varieties”
(<https://eorganic.org/node/10822>)

New and Emerging Plant Diseases Late Blight

- **Control**
 - Use fungicides to prevent infections
 - Chlorothalonil, copper, mancozeb
 - Alternate active ingredients (FRAC codes)
 - Start applications based on Blitecast
(<https://wisconsinpotatoes.com/blog-news/>)
 - Apply at 7-14 day intervals
 - Contact the PDDC if you believe you have seen this disease

New and Emerging Plant Diseases Soybean Rust

- **Pathogen:** *Phakopsora pachyrhizi*
- **Hosts**
 - Over 90 known hosts
 - Soybean
 - Kudzu

New and Emerging Plant Diseases Soybean Rust

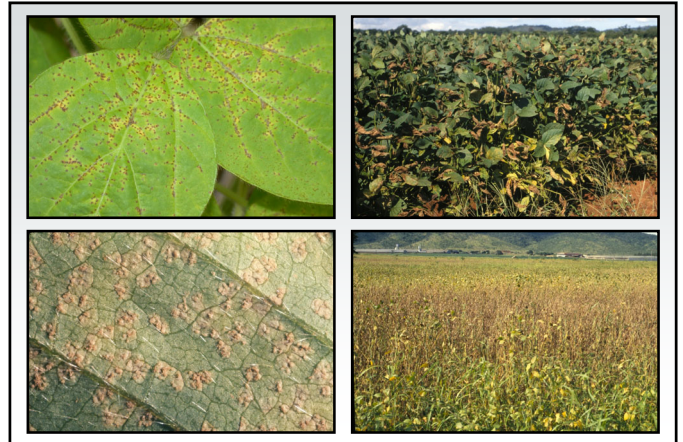
- **Hosts**
 - Common potential Wisconsin hosts
 - Snap/kidney bean (*Phaseolus vulgaris*)
 - White clover (*Trifolium repens*)
 - Purple crownvetch (*Coronilla varia*)
 - Lupine (*Lupinus* spp.)
 - Pea (*Pisum sativum*)
 - Yellow sweetclover (*Mellilotus officinalis*)

New and Emerging Plant Diseases Soybean Rust

- **Hosts**
 - Less common potential Wisconsin hosts
 - American bird's-foot trefoil (*Lotus unifoliolatus*)
 - Crimson clover (*Trifolium incarnatum*)
 - Korean clover (*Kummerowia stipulacea*)
 - Chinese lespedeza (*Lespedeza cuneata*)
 - Rattlebox (*Crotalaria* spp.)
 - Ticktrefoil (*Desmodium* spp.)
 - Winter vetch (*Vicia villosa*)

New and Emerging Plant Diseases Soybean Rust

- Favorable environment
 - Long periods of leaf wetness
 - Moderate temperatures (59-77°F)
 - High relative humidity (75-80%)



New and Emerging Plant Diseases Soybean Rust

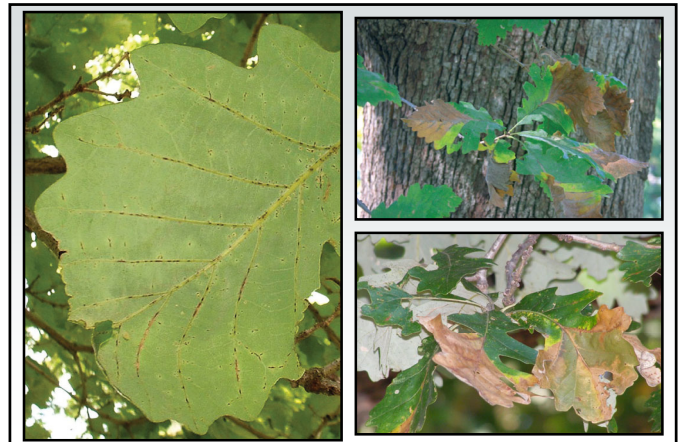
- Control
 - Monitor closely for the disease
 - Use fungicides to as needed
 - Azoxystrobin, pyraclostrobin, trifloxystrobin
 - Flutriafol, metconazole, propiconazole, prothioconazole, tebuconazole
 - Chlorothalonil
 - Alternate active ingredients (FRAC codes)
 - Two or more applications may be needed

New and Emerging Plant Diseases Soybean Rust

- Control
 - Modify planting dates
 - Plant early with an early maturing variety
 - Plant later so flowering/pod development occurs during dry periods
 - Modify plant spacing
 - Widen rows
 - Decrease stand counts
 - Use resistant varieties (?)

New and Emerging Plant Diseases Bur Oak Blight

- Pathogen: *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 Phytoplasma Diseases

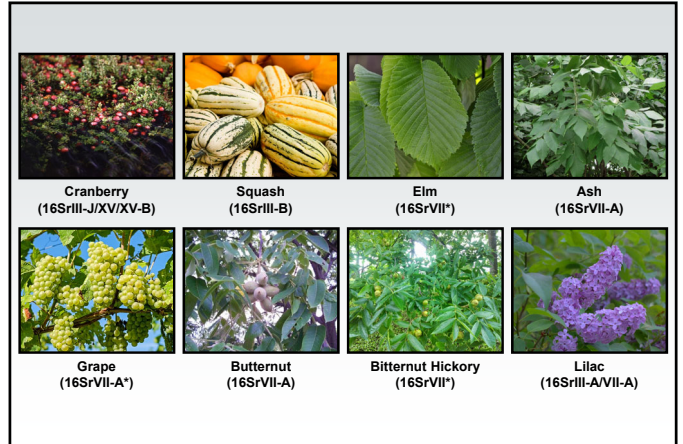
- **Examples**
 - Aster yellows
 - Ash yellows
- **Pathogens: Miscellaneous phytoplasmas**
- **Hosts**
 - Many herbaceous plants (aster yellows)
 - Ash, lilac (ash yellows)
 - “The more you look, the more you find.”

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

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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