

2023 PDDC Plant Disease Talks

The Bad and the Ugly: Ten Plant Diseases Not to Compost

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Ten Plant Diseases Not to Compost Southern Blight

- Pathogen: *Sclerotium rolfsii*
- Hosts
 - Any herbaceous plant
 - Some woody plants
- Favorable environment: Warm, wet weather



Ten Plant Diseases Not to Compost Southern Blight

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

Ten Plant Diseases Not to Compost Southern Blight

- Control
 - Amend soil with organic matter (?)
 - Allow affected areas to go fallow
 - Use fungicides for control
 - Contract with a professional pesticide applicator
 - Azoxystrobin, flutolanil, flutolanil + thiophanate-methyl, PCNB, tebuconazole, triadimefon
 - Alternate active ingredients (FRAC codes)
 - Apply at 14 – 28 day intervals
 - Pray for a really, really, REALLY cold winter

Ten Plant Diseases Not to Compost Late Blight

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



Ten Plant Diseases Not to Compost 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

Ten Plant Diseases Not to Compost 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>)

Ten Plant Diseases Not to Compost Late Blight

- Control
 - Use fungicides to prevent infections
 - Chlorothalonil, mancozeb
 - Copper
 - Alternate active ingredients (FRAC codes)
 - Start applications based on Blitecast
(<https://wisconsinpotatoes.com/blog-news/>)
 - Apply at 7-14 day intervals

Ten Plant Diseases Not to Compost Impatiens Downy Mildew

- Pathogen: *Plasmopara obducens*
- Hosts
 - Garden impatiens (*I. walleriana*)
 - Balsam impatiens (*I. balsamina*)
 - Jewelweed (*I. pallida*, *I. capensis*)
 - New Guinea impatiens (*I. hawkeri*)
(resistant/tolerant)
- Favorable environment: Wet weather



Ten Plant Diseases Not to Compost Impatiens Downy Mildew

- Control
 - DO NOT grow impatiens in the same location every year
 - Grow tolerant/resistant/immune plants
 - New Guinea impatiens
 - New Guinea impatiens hybrids ('Sunpatiens')
 - Garden impatiens (Beacon and Imara XDR series)
 - Start with clean transplants and seed

Ten Plant Diseases Not to Compost Impatiens Downy Mildew

- Control
 - Keep materials from different sources physically separated
 - DO NOT overcrowd plants
 - DO NOT overhead water
 - Watch carefully for the disease
 - Bag and discard affected plants
 - Symptomatic plants
 - Asymptomatic surrounding plants

Ten Plant Diseases Not to Compost Impatiens Downy Mildew

- Control
 - Disinfect contaminated materials (70% alcohol, disinfectants, bleach)
 - Use fungicides to prevent infections
 - Mancozeb
 - Apply at 7 day intervals

Ten Plant Diseases Not to Compost Boxwood Blight

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



Ten Plant Diseases Not to Compost Boxwood Blight

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

Ten Plant Diseases Not to Compost Boxwood Blight

- **Control**
 - Grow resistant varieties
 - Hybrid boxwood
 - ‘Green Gem’
 - ‘Karzgreen’ (Green Ice®)
 - Japanese littleleaf boxwood
 - ‘Jim Stauffer’
 - ‘Little Missy’
 - ‘Winter Gem’

Ten Plant Diseases Not to Compost Boxwood Blight

- **Control**
 - Grow resistant varieties
 - Korean littleleaf boxwood
 - ‘Eseles’ (Wedding Ring®)
 - ‘Franklin’s Gem’
 - ‘Pincushion’
 - ‘Wee Willie’
 - ‘Winter Beauty’
 - ‘Wintergreen’

Ten Plant Diseases Not to Compost 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

Ten Plant Diseases Not to Compost 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

Ten Plant Diseases Not to Compost 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

Ten Plant Diseases Not to Compost Tobacco Mosaic

- **Pathogen:** *Tobacco mosaic virus* (TMV)
- **Hosts**
 - Many herbaceous ornamentals
 - Many vegetables
- **Favorable environment:** None
- **Transmission:** Mechanical
 - Touch
 - Tools



Ten Plant Diseases Not to Compost Tobacco Mosaic

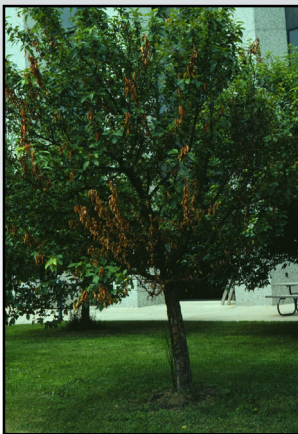
- Control
 - Buy plants from a reputable source
 - Inspect plants for symptoms
 - Test plants prior to purchase
 - DO NOT smoke around plants
 - Wash hands routinely with soap and water
 - Keep weeds under control
 - Landfill diseased plants and plant debris

Ten Plant Diseases Not to Compost Tobacco Mosaic

- Control
 - Disinfest contaminated materials
 - 1% Sodium dodecyl sulfate (sodium lauryl sulfate) + 1% Alconox® (2½ Tbsp + 2¼ Tbsp/gal)
 - Trisodium phosphate (14 dry oz/gal)
 - 20% low fat dry milk (Carnation®) + 0.1% polysorbate 20 (9½ cups + ¼ tsp/gal)
 - Alcohol dip followed by flaming
 - DO NOT use chemical controls on plants

Ten Plant Diseases Not to Compost Fire Blight

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



Ten Plant Diseases Not to Compost Fire Blight

- Control
 - Plant resistant varieties
 - “Home Fruit Cultivars for Northern Wisconsin” (<https://learningstore.extension.wisc.edu/>)
 - “Home Fruit Cultivars for Southern Wisconsin” (<https://learningstore.extension.wisc.edu/>)
 - “Top Ornamental Crabapples for Wisconsin” (<https://hort.extension.wisc.edu/>)
 - Prune diseased branches

Ten Plant Diseases Not to Compost Fire Blight

- **Control**
 - Decontaminate pruning tools (70% alcohol, disinfectants, bleach)
 - Destroy infected materials
 - Burn (where allowed)
 - Deep bury
 - DO NOT over-fertilize with nitrogen

Ten Plant Diseases Not to Compost Fire Blight

- **Control**
 - Use bactericides to prevent infections (?)
 - Copper, streptomycin
 - **Apply**
 - Pre-bloom (copper)
 - During flowering (streptomycin)
 - **Apply every**
 - Two applications at spaced 4 days apart (copper)
 - Multiple applications spaced 3-4 days apart (streptomycin)

Ten Plant Diseases Not to Compost Verticillium Wilt

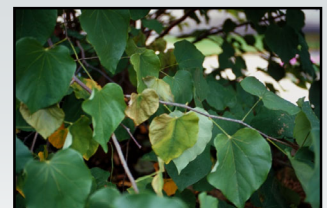
- **Pathogens**
 - *Verticillium dahliae*
 - *Verticillium albo-atrum*
 - Other *Verticillium* spp.
 - New *Verticillium* spp.

Ten Plant Diseases Not to Compost Verticillium Wilt

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

Ten Plant Diseases Not to Compost Verticillium Wilt

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





Ten Plant Diseases Not to Compost 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
 - Clean up leaf litter
 - Avoid municipal mulches

Ten Plant Diseases Not to Compost 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
 - Prevent stress
 - Prune diseased (wilted) areas

Ten Plant Diseases Not to Compost Verticillium Wilt

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

Ten Plant Diseases Not to Compost Crown Gall

- Pathogens
 - *Agrobacterium tumefaciens*
 - *Agrobacterium vitis*
- Hosts
 - Plants in 93 plant families
 - Trees and shrubs (deciduous and coniferous)
 - Herbaceous plants
- Favorable environment: None



Ten Plant Diseases Not to Compost Crown Gall

- Control
 - DO NOT buy infected plant
 - Buy well-adapted, winter-hardy plants
 - Avoid wounding plants during transplant
 - Consider root dips of *A. radiobacter*
 - Prune out galls
 - Decontaminate pruning tools (70% alcohol, disinfectants, bleach)

Ten Plant Diseases Not to Compost Crown Gall

- Control
 - Remove plants (including roots) and soil
 - Destroy infected materials
 - Burn (where allowed)
 - Landfill
 - Plant nonsusceptible plants
 - DO NOT use bactericides

Ten Plant Diseases Not to Compost Ralstonia wilt

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



Ten Plant Diseases Not to Compost 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

Ten Plant Diseases Not to Compost Sudden Oak Death (Ramorum Blight)

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



Ten Plant Diseases Not to Compost
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

Ten Plant Diseases Not to Compost
Sudden Oak Death (Ramorum Blight)

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

Ten Plant Diseases Not to Compost
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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