

Extension Zoom Seminar

Foliar Diseases of Trees and Shrubs

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Foliar Diseases of Trees and Shrubs Boxwood Blight

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



Foliar Diseases of Trees and Shrubs Boxwood Blight

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

Foliar Diseases of Trees and Shrubs 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'

Foliar Diseases of Trees and Shrubs Boxwood Blight

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

Foliar Diseases of Trees and Shrubs Boxwood Blight

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

Foliar Diseases of Trees and Shrubs 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 infected boxwoods

Foliar Diseases of Trees and Shrubs Rhizosphaera Needle Cast

- **Pathogens:** *Rhizosphaera kalkhoffii*
Rhizosphaera spp.
- **Look-Alike:** Stigmina Needle Cast (*Stigmina* spp.)
- **Hosts (major)**
 - Colorado blue spruce
 - Other spruces: Black, Engelmann, Serbian, Sitka, white (Black Hills)

Foliar Diseases of Trees and Shrubs Rhizosphaera Needle Cast

- **Hosts (minor)**
 - Pines: Austrian, mugo, eastern white pine
 - Douglas fir
 - Hemlock
 - Balsam fir and other firs
- **Favorable environment**
 - Long periods of needle wetness
 - High humidity



Foliar Diseases of Trees and Shrubs Rhizosphaera Needle Cast

- **Control**
 - DO NOT plant Colorado blue spruce
 - DO NOT crowd trees when planting
 - Plant dwarf spruce varieties
 - Thin healthy branches to increase airflow
 - Prevent tree stress
 - Prune diseased branches

Foliar Diseases of Trees and Shrubs

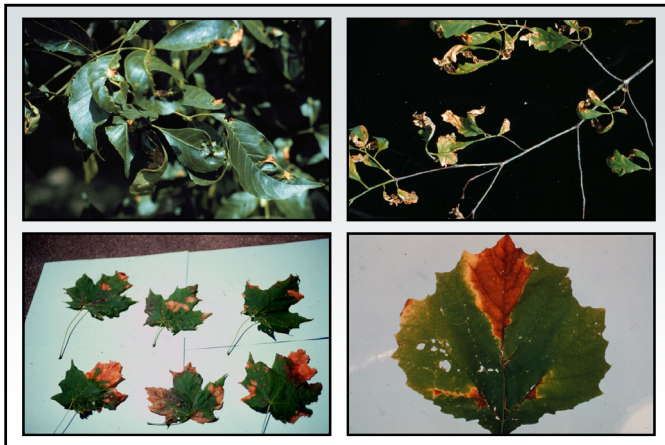
Rhizosphaera Needle Cast

- **Control**
 - Decontaminate pruning tools (70% alcohol, disinfectants, 10% bleach)
 - Use fungicides to prevent infections
 - Copper, chlorothalonil
 - Alternate active ingredients (FRAC Codes)
 - Start applications at bud break
 - Apply at 3-4 week intervals under favorable conditions

Foliar Diseases of Trees and Shrubs

Anthracnose

- **Causes**
 - *Gloeosporium* spp.
 - *Discula* spp.
 - *Colletotrichum* spp.
 - Many other fungi
- **Hosts**
 - Any deciduous tree
 - Ash, maple, oak
 - Sycamore
- **Favorable environment:** Cool, wet weather



Foliar Diseases of Trees and Shrubs

Anthracnose

- **Control**
 - DO NOT panic
 - Remove/destroy diseased leaves and branches
 - Burn (where allowed)
 - Deep bury
 - Hot compost

Foliar Diseases of Trees and Shrubs

Anthracnose

- **Control**
 - Use fungicides to prevent infections
 - Copper, chlorothalonil, mancozeb, thiophanate-methyl
 - Alternate active ingredients (FRAC codes)
 - Apply at bud break, 1/2 and full leaf expansion

Foliar Diseases of Trees and Shrubs

Scab (Apple and Pear)

- **Causes**
 - *Venturia inaequalis*
 - *Venturia pirina*
- **Hosts**
 - Apple/crabapple
 - Pear
 - Mountain ash
- **Favorable environment:** Cool, wet weather



Foliar Diseases of Trees and Shrubs Scab (Apple and Pear)

- **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://pddc.wisc.edu/fact-sheet-listing-all/>)

Foliar Diseases of Trees and Shrubs Scab (Apple and Pear)

- **Control**
 - Remove/destroy diseased leaves
 - Burn (where allowed)
 - Deep bury
 - Hot compost
 - Thin trees to promote air flow

Foliar Diseases of Trees and Shrubs Scab (Apple and Pear)

- **Control**
 - Use fungicides to prevent infections
 - Chlorothalonil, copper, mancozeb, myclobutanil, propiconazole, thiophanate-methyl, sulfur
 - Alternate active ingredients (FRAC codes)
 - Apply from bud break through the end of favorable weather
 - Apply at 7 to 14-day intervals

Foliar Diseases of Trees and Shrubs Powdery Mildews

- **Causes**
 - *Erysiphe* spp.
 - *Uncinula* spp.
 - *Phyllactinia* spp.
 - *Blumeria* spp.
 - *Oidium* spp.
 - *Microsphaera* spp.
 - *Sphaerotheca* spp.
 - *Podosphaera* spp.
 - *Brasiliomyces* spp.
 - *Ovulariopsis* spp.

Foliar Diseases of Trees and Shrubs Powdery Mildews

- **Hosts**
 - Virtually everything
 - Not conifers
- **Favorable environment:** High humidity



Foliar Diseases of Trees and Shrubs Powdery Mildews

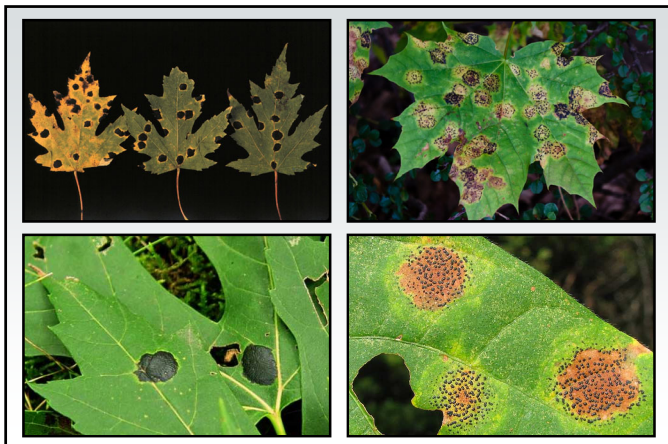
- **Control**
 - Remove/destroy diseased leaves
 - Burn (where allowed)
 - Deep bury
 - Hot compost
 - Reduce humidity
 - Plant less densely
 - Thin canopies
 - Use resistant cultivars/varieties

Foliar Diseases of Trees and Shrubs Powdery Mildews

- **Control**
 - Use fungicides to prevent infections
 - Dinocap, dithiocarbamates, myclobutanil, triadimefon, triforine, sulfur or thiophanate-methyl
 - Baking soda (1.5 Tbsp/gal) and light weight horticultural oil (3 Tbsp/gal)
 - Alternate active ingredients (FRAC codes)
 - Apply when humidity >60-70%
 - Apply at 7 to 14-day intervals

Foliar Diseases of Trees and Shrubs Tar Spot

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



Foliar Diseases of Trees and Shrubs Tar Spot

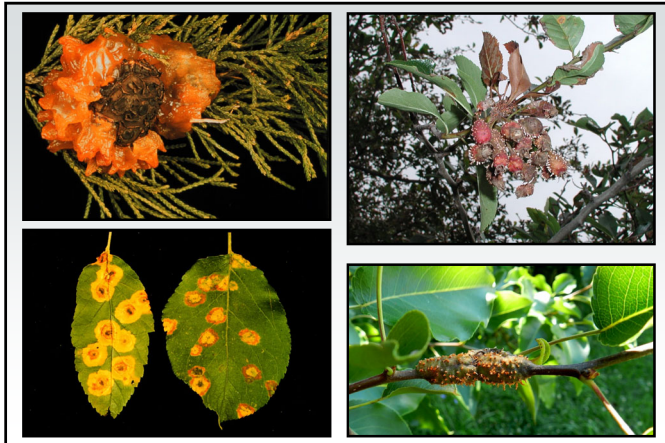
- **Control**
 - DO NOT panic
 - Remove/destroy diseased leaves
 - Burn (where allowed)
 - Deep bury
 - Hot compost
 - Use fungicides to prevent infections
 - Copper
 - Apply at bud break, 1/2 and full leaf expansion

Foliar Diseases of Trees and Shrubs Gymnosporangium Rusts

- Pathogens: *Gymnosporangium* spp.
 - *Gymnosporangium juniperi-virginianae* (Cedar-apple rust)
 - *Gymnosporangium globosum* (Cedar-hawthorn rust)
 - *Gymnosporangium clavipes* (Cedar-quince rust)

Foliar Diseases of Trees and Shrubs Gymnosporangium Rusts

- Hosts
 - Junipers
 - Rosaceous plants
 - Apple, crabapple
 - Hawthorn
 - Quince
 - Pear
 - Serviceberry
- Favorable environment: Wet weather



Foliar Diseases of Trees and Shrubs Gymnosporangium Rusts

- Control
 - Grow only junipers or rosaceous hosts
 - Use resistant cultivars/varieties
 - “Juniper Diseases” (<https://store.extension.iastate.edu/Product/Juniper-Diseases>)
 - “Home Fruit Cultivars for Northern Wisconsin” (<https://learningstore.extension.wisc.edu/>)
 - “Home Fruit Cultivars for Southern Wisconsin” (<https://learningstore.extension.wisc.edu/>)

Foliar Diseases of Trees and Shrubs Gymnosporangium Rusts

- Control
 - Remove galls
 - Decontaminate pruning tools (70% alcohol, disinfectants, 10% bleach)
 - Destroy infected materials
 - Burn (where allowed)
 - Deep bury

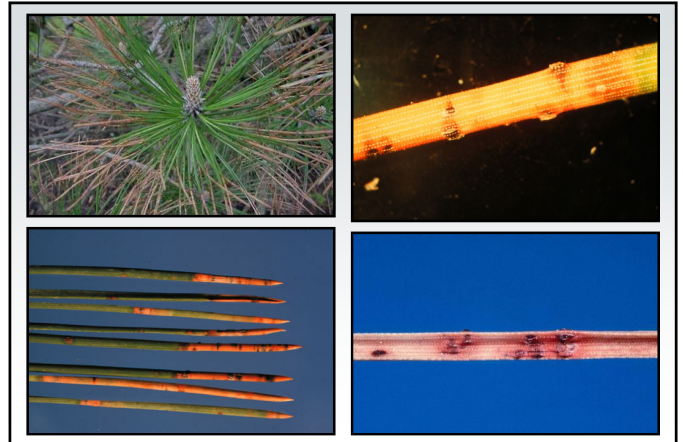
Foliar Diseases of Trees and Shrubs Gymnosporangium Rusts

- Control
 - Use fungicides to prevent infections (?)
 - Treat rosaceous hosts
 - Chlorothalonil, copper, ferbam, mancozeb, propiconazole, sulfur, and triadimefon
 - Alternate active ingredients (FRAC Codes)
 - Apply when flowers first show color, when half of flowers open, at petal fall, 7 to 10 days after petal fall, and 10 to 14 days later

Foliar Diseases of Trees and Shrubs

Dothistroma Needle Blight

- Pathogen: *Dothistroma pini*
- Hosts
 - Austrian pine
 - Mugo pine
 - Ponderosa pine
- Favorable environment: Wet weather



Foliar Diseases of Trees and Shrubs

Dothistroma Needle Blight

- Control
 - Plant disease-free trees
 - Plant resistant/immune tree species
 - Destroy infected materials
 - Burn (where allowed)
 - Deep bury
 - Hot compost

Foliar Diseases of Trees and Shrubs

Dothistroma Needle Blight

- Control
 - Use fungicides to prevent infections
 - Copper
 - Start application(s) in early June
 - Apply 1 treatment, or 2 treatments spaced 3-4 weeks apart

Foliar Diseases of Trees and Shrubs

Black Spot

- Cause: *Marssonina rosae*
- Host: Rose
- Favorable environment: Cool, wet weather



Foliar Diseases of Trees and Shrubs

Black Spot

- **Control**
 - Plant resistant rose varieties
 - Promote rapid drying of leaves and canes
 - DO NOT overcrowd plants
 - Prune to thin established plants
 - DO NOT overhead water
 - DO NOT overwater

Foliar Diseases of Trees and Shrubs

Black Spot

- **Control**
 - Remove/destroy diseased leaves and canes
 - Burn (where allowed)
 - Deep bury
 - Hot compost
 - Decontaminate pruning tools
(70% alcohol, disinfectants, 10% bleach)

Foliar Diseases of Trees and Shrubs

Black Spot

- **Control**
 - Use fungicides to prevent infections
 - Chlorothalonil, copper, mancozeb, maneb, myclobutanil, propiconazole, thiophanate-methyl
 - Neem oil
 - Baking soda (1.5 Tbsp/gal) and light weight horticultural oil (3 Tbsp/gal)
 - Alternate active ingredients (FRAC Codes)
 - Apply at 7 to 14-day intervals

Foliar Diseases of Trees and Shrubs

Taphrina Diseases of Stone Fruits

- **Causes**
 - *Taphrina deformans*
(Peach leaf curl)
 - *Taphrina cerasi*
(Cherry leaf curl)
 - *Taphrina communis*
(Plum pockets)

Foliar Diseases of Trees and Shrubs

Taphrina Diseases of Stone Fruits

- **Host**
 - Peach, nectarine (peach leaf curl)
 - Cherry (cherry leaf curl)
 - Plum (plum pockets)
- **Favorable environment: Wet weather**



Foliar Diseases of Trees and Shrubs
Taphrina Diseases of Stone Fruits

- **Control**
 - Remove and destroy symptomatic fruits
 - Burn (where allowed)
 - Bury
 - Hot compost
 - Prune/thin trees to improve air flow
 - Decontaminate pruning tools
(70% alcohol, disinfectants, 10% bleach)

Foliar Diseases of Trees and Shrubs
Taphrina Diseases of Stone Fruits

- **Control**
 - Use fungicides to prevent infections
 - Chlorothalonil, copper, ferbam
 - Apply after leaf fall and/or before leaf emergence

Foliar Diseases of Trees and Shrubs
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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