

1000 Friends of Wisconsin

Common Tree Diseases

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Common Tree Diseases 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)

Common Tree Diseases 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



Common Tree Diseases 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

Common Tree Diseases 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

Common Tree Diseases

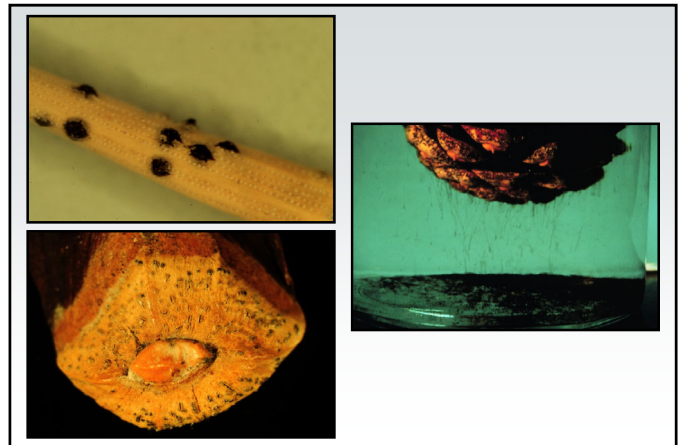
Diplodia (Sphaeropsis) Tip Blight

- Pathogen: *Diplodia pinea*
(*Sphaeropsis sapinea*)
- Hosts (major)
 - Austrian pine
 - Other pines: red, jack, Scots, mugo
- Hosts (minor)
 - Other conifers: cedars, cypresses, firs, spruces, junipers, yews

Common Tree Diseases

Diplodia (Sphaeropsis) Tip Blight

- Favorable environment
 - Wet weather (for infection)
 - Drought (for extensive colonization)



Common Tree Diseases

Diplodia (Sphaeropsis) Tip Blight

- Control
 - DO NOT plant Austrian pines
 - Prevent tree stress, particularly water stress
 - Thin branches to increase airflow
 - Prune diseased branches
 - Decontaminate pruning tools
(70% alcohol, disinfectants, 10% bleach)
 - Remove infected cones (?)

Common Tree Diseases

Diplodia (Sphaeropsis) Tip Blight

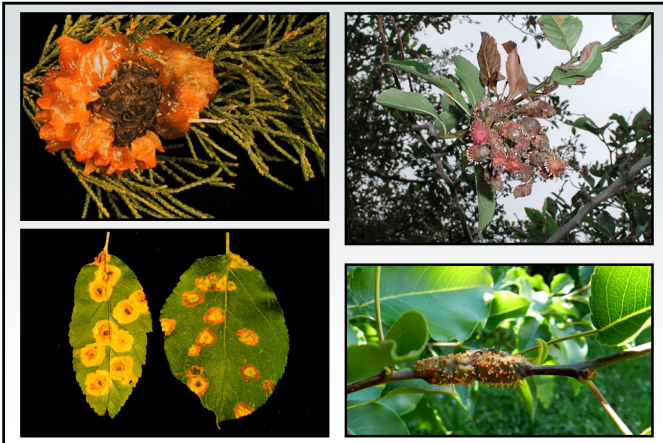
- Control
 - Use fungicides to prevent infections
 - Thiophanate-methyl, chlorothalonil
 - Alternate active ingredients (FRAC Codes)
 - Apply from bud break through shoot elongation
 - Apply at 14 day intervals

Common Tree Diseases Gymnosporangium Rusts

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

Common Tree Diseases Gymnosporangium Rusts

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



Common Tree Diseases 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/>)

Common Tree Diseases Gymnosporangium Rusts

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

Common Tree Diseases 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

Common Tree Diseases Powdery Mildews

• Causes

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

Common Tree Diseases Powdery Mildews

• Hosts

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



Common Tree Diseases 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

Common Tree Diseases 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

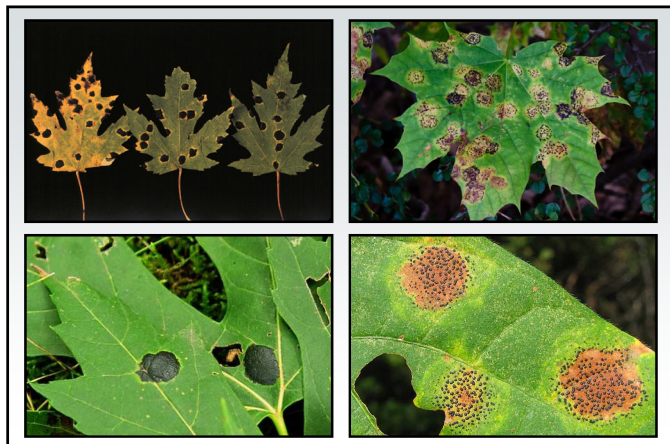
Common Tree Diseases Tar Spot

• Causes

- *Rhytisma americanum*
- *Rhytisma acerinum*

• Hosts: Maples

- Favorable environment: Cool, wet weather

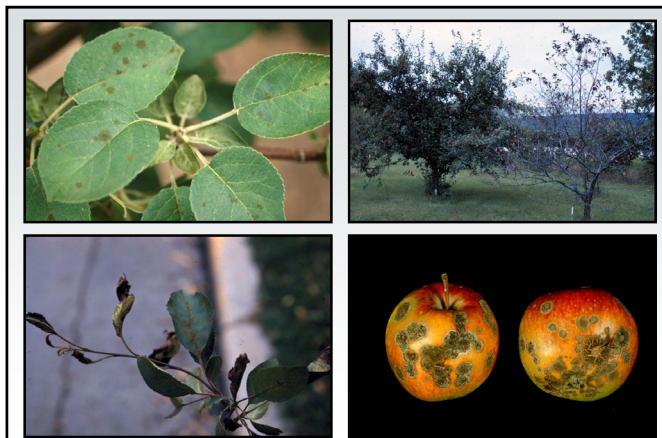


Common Tree Diseases Tar Spot

- **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

Common Tree Diseases Scab (Apple and Pear)

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



Common Tree Diseases 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/>)

Common Tree Diseases Scab (Apple and Pear)

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

Common Tree Diseases 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

Common Tree Diseases Black Knot

- **Cause:** *Apiosporina morbosa*
- **Hosts:** *Prunus* spp.
 - Plums
 - Cherries
- **Favorable environment:** Wet weather



Common Tree Diseases Black Knot

- **Control**
 - DO NOT plant infected *Prunus* stock
 - Buy black knot-resistant varieties if available
 - Amur chokecherry (*Prunus maackii*)
 - Sargent's cherry (*Prunus sargentii*)
 - Accolade flowering cherry (*Prunus* 'Accolade')
 - Remove volunteer plums/cherries
 - Prune diseased branches

Common Tree Diseases Black Knot

- **Control**
 - Decontaminate pruning tools (70% alcohol, disinfectants, 10% bleach)
 - Destroy infected materials
 - Burn (where allowed)
 - Deep bury
 - DO NOT use fungicides

Common Tree Diseases Golden Canker

- **Cause:** *Cryptodiaporthe corni*
- **Host:** Pagoda dogwood
- **Favorable environment**
 - Water stress
 - Heat stress



Common Tree Diseases Golden Canker

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

Common Tree Diseases Golden Canker

- **Control**
 - Reduce plant stress
 - Consider tree placement
 - Water adequately
 - Fertilize appropriately
 - DO NOT use fungicides

Common Tree Diseases Bacterial Canker

- **Causes**
 - *Pseudomonas syringae* pv. *syringae*
 - *Pseudomonas syringae* pv. *mors-prunorum*
- **Hosts:** Stone fruits (plum, cherry, peach)
- **Favorable environment**
 - Wet weather
 - Cold temperatures
 - Wounding

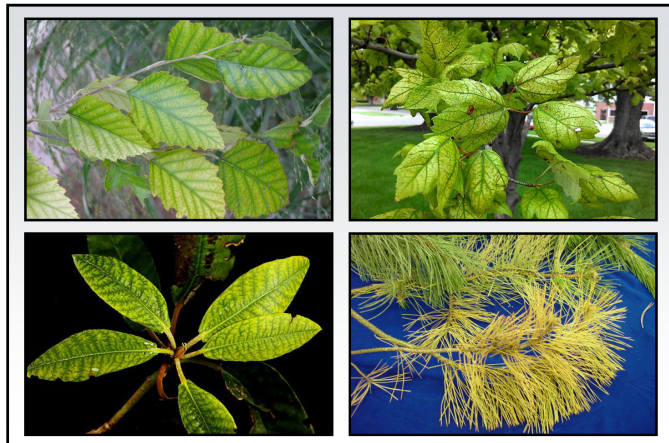
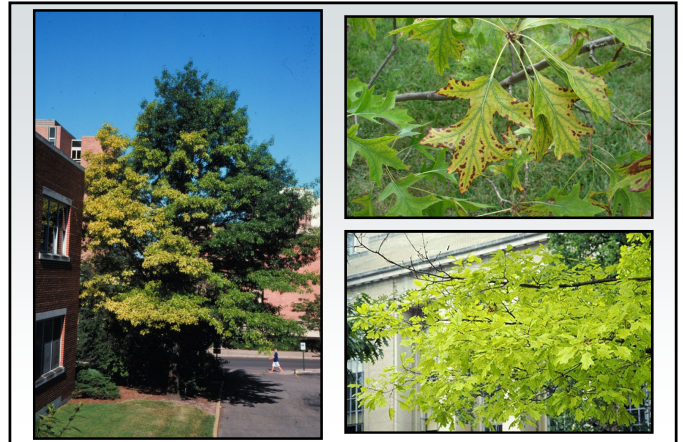


Common Tree Diseases Bacterial Canker

- **Control**
 - Minimize wounding
 - Prune diseased branches
 - Decontaminate pruning tools (70% alcohol, disinfectants, 10% bleach)
 - Destroy infected materials
 - Burn (where allowed)
 - Deep bury
 - DO NOT use bactericides

Common Tree Diseases Chlorosis

- Cause: Micronutrient (Fe or Mn) deficiency
- Affected plants
 - Oaks (especially pin oak)
 - Red Maples
 - Rhododendrons
 - Other woody (and herbaceous) plants



Common Tree Diseases Chlorosis

- Management
 - Plant the right plant in the right location
 - Monitor soil pH and soil nutrients
 - Decrease pH using sulfur or aluminum sulfate
 - Add chelated Fe and/or Mn as needed
 - Make sure trees are adequately watered
 - Minimize damage to tree root systems

Common Tree 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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