

Portage County Presentation

Top Ten Plant Diseases of 2020

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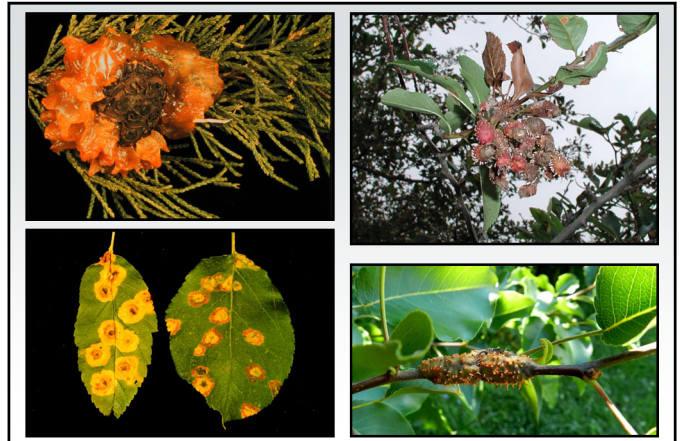


Top Ten Plant Diseases of 2020 Gymnosporangium Rusts

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

Top Ten Plant Diseases of 2020 Gymnosporangium Rusts

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



Top Ten Plant Diseases of 2020 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/>)

Top Ten Plant Diseases of 2020 Gymnosporangium Rusts

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

Top Ten Plant Diseases of 2020 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

Top Ten Plant Diseases of 2020 Elderberry Rust

- **Pathogen:** *Puccinia bolleyana*
- **Hosts**
 - Elderberry
 - Sedges
- **Favorable environment:** Wet weather

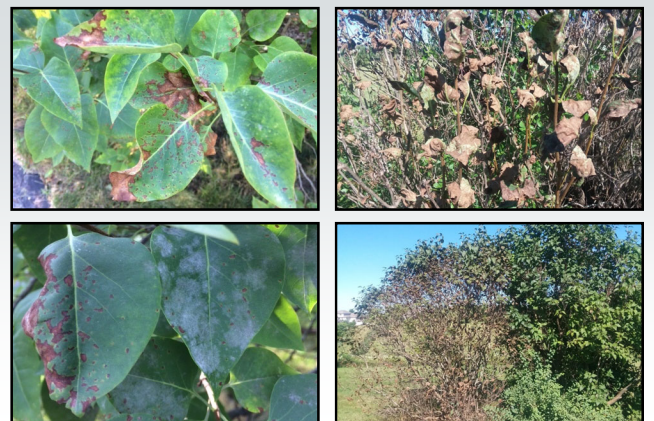


Top Ten Plant Diseases of 2020 Elderberry Rust

- **Control**
 - Prune out galls
 - Decontaminate pruning tools (70% alcohol, disinfectants, 10% bleach)
 - Remove sedges
 - DO NOT use fungicides

Top Ten Plant Diseases of 2020 Septoria Leaf Spot

- **Cause:** *Septoria* sp.
- **Host:** Lilac
- **Favorable environment:** Wet weather



Top Ten Plant Diseases of 2020 Septoria Leaf Spot

- **Control**
 - Space lilacs to promote good air flow
 - Routinely thin shrubs
 - Decontaminate pruning tools
(70% alcohol, disinfectants, 10% bleach)
 - Avoid overhead watering
 - Reduce stress

Top Ten Plant Diseases of 2020 Septoria Leaf Spot

- **Control**
 - Destroy infected materials
 - Burn (where allowed)
 - Deep bury
 - Hot compost
 - Use fungicides to prevent infections
 - Chlorothalonil, copper, mancozeb
 - Apply from bud break through the end of favorable weather
 - Apply at 7 to 14-day intervals

Top Ten Plant Diseases of 2020 Planting-Related Decline

- **Causes**
 - Impatience
 - Improper plant techniques
 - Overly deep planting
 - Failure to remove burlap, wire basket, wires
 - Lack of watering post installation
- **Hosts: Any tree or shrub**



Top Ten Plant Diseases of 2020 Planting-Related Decline

- **Management**
 - Plant small trees
 - Plant bare-root trees
 - Prepare balled and burlaped trees properly
 - Remove burlap
 - Remove wire basket
 - Remove wires/cords
 - Expose the root flare

Top Ten Plant Diseases of 2020 Planting-Related Decline

- **Management**
 - **Mulch properly**
 - Use high quality mulches
 - Use the right amount of mulch
 - **Water properly**
 - Apply two inches of water per week
 - Water from bud break through summer and into the fall
 - Continue this watering for at least three years

Top Ten Plant Diseases of 2020 Fire Blight

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



Top Ten Plant Diseases of 2020 Fire Blight

- **Control**
 - **Plant resistant varieties**
 - “Home Fruit Cultivars for Northern Wisconsin” (<https://learningstore.uwex.edu/>)
 - “Home Fruit Cultivars for Southern Wisconsin” (<https://learningstore.uwex.edu/>)
 - “Top Ornamental Crabapples for Wisconsin” (<https://pddc.wisc.edu/fact-sheet-listing-all/>)
 - **Prune diseased branches**

Top Ten Plant Diseases of 2020 Fire Blight

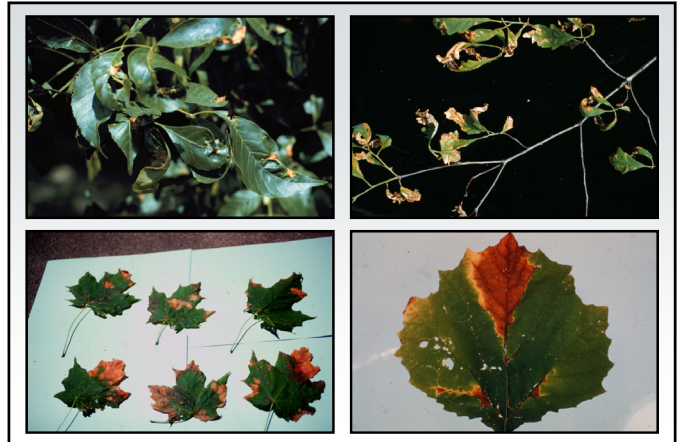
- **Control**
 - **Decontaminate pruning tools** (70% alcohol, disinfectants, 10% bleach)
 - **Destroy infected materials**
 - Burn (where allowed)
 - Deep bury
 - **DO NOT over-fertilize with nitrogen**

Top Ten Plant Diseases of 2020 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)

Top Ten Plant Diseases of 2020 Anthracnose

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



Top Ten Plant Diseases of 2020 Anthracnose

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

Top Ten Plant Diseases of 2020 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

Top Ten Plant Diseases of 2020 Scab (Apple and Pear)

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



Top Ten Plant Diseases of 2020 Scab (Apple and Pear)

- **Control**
 - Plant resistant varieties
 - “Home Fruit Cultivars for Northern Wisconsin” (<https://learningstore.uwex.edu/>)
 - “Home Fruit Cultivars for Southern Wisconsin” (<https://learningstore.uwex.edu/>)
 - “Top Ornamental Crabapples for Wisconsin” (<https://pddc.wisc.edu/fact-sheet-listing-all/>)

Top Ten Plant Diseases of 2020 Scab (Apple and Pear)

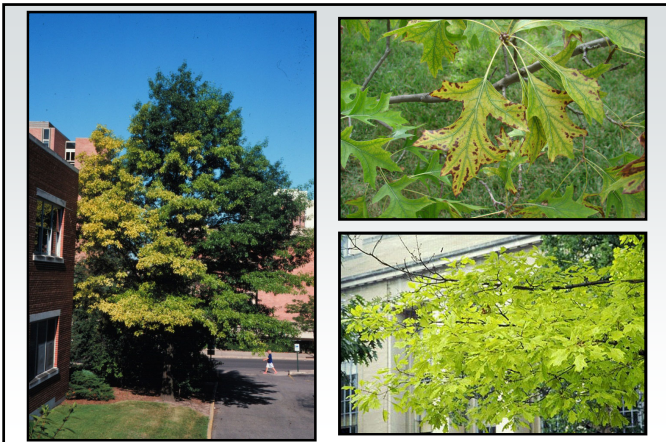
- **Control**
 - Remove/destroy diseased leaves
 - Burn (where allowed)
 - Deep bury
 - Hot compost
 - Thin trees to promote air flow
 - Decontaminate pruning tools (70% alcohol, disinfectants, 10% bleach)

Top Ten Plant Diseases of 2020 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

Top Ten Plant Diseases of 2020 Chlorosis

- **Cause: Micronutrient (Fe or Mn) deficiency**
- **Affected plants**
 - Oaks (especially pin oak)
 - Red maple
 - Rhododendron
 - White pine
 - Blueberries
 - Other woody (and herbaceous) plants



Top Ten Plant Diseases of 2020 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

Top Ten Plant Diseases of 2020 “Boxwood Dieback”

- **Causes**
 - Winter injury/winter burn
 - Small animal injury
 - Fungal pathogens
 - *Verticillium* sp. (Verticillium wilt)
 - *Phytophthora* sp., *Pythium* sp., *Rhizoctonia* sp. (root rots)
 - *Volutella buxi* (Volutella blight)
 - *Calonectria pseudonaviculata* (box blight)
 - (*Cylindrocladium pseudonaviculatum*)
- **Host: Boxwood**



Top Ten Plant Diseases of 2020 “Boxwood Dieback”

- **Control**
 - Water adequately
 - Apply one inch of water per water
 - Water from bud break through summer and into the fall up until ground freeze/snow
 - Protect plants from winter winds
 - Reduce other stresses
 - Control small animal populations

Top Ten Plant Diseases of 2020 “Boxwood Dieback”

- **Control**
 - Grow boxwood blight resistant varieties
 - Hybrid boxwood ‘Green Gem’
 - Common boxwood ‘Katerberg’ North Star®
 - Korean littleleaf boxwood
 - ‘Eseles’ Wedding Ring®
 - ‘Franklin’s Gem’
 - ‘Winter Gem’
 - ‘Wintergreen’

Top Ten Plant Diseases of 2020 “Boxwood Dieback”

- **Control**
 - Inspect new plants for symptoms
 - Keep new plants isolated
 - Space plants far apart
 - DO NOT overhead water

Top Ten Plant Diseases of 2020 “Boxwood Dieback”

- **Control**
 - Prune out diseased branches
 - Disinfest pruning tools (70% alcohol, disinfectants, 10% bleach)
 - Remove and destroy infected plants
 - Burn (where allowed)
 - Haul to your local municipal composting site

Top Ten Plant Diseases of 2020 “Boxwood Dieback”

- **Control**
 - Use fungicides treatments
 - Chlorothalonil, mancozeb, thiophanate-methyl
 - 7 day application intervals
 - Alternate active ingredients (FRAC codes)
 - Contact the PDDC if you believe you have found box blight!

Top Ten Plant Diseases of 2020 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)

Top Ten Plant Diseases of 2020 Rhizosphaera Needle Cast

- **Hosts (minor)**
 - Pines: Austrian, mugo, eastern white pine
 - Douglas fir
 - Hemlock
 - Balsam fir and other firs
- **Favorable environment**
 - Wet weather
 - High humidity



Top Ten Plant Diseases of 2020 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

Top Ten Plant Diseases of 2020

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

Top Ten Plant Diseases of 2020

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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