McHenry County Master Gardeners

Early Season Landscape Diseases

Brian D. Hudelson
Department of Plant Pathology
University of Wisconsin-Madison/Extension

Early Season Landscape Diseases
Winter Injury/Winter Burn

- Causes
  - Water stress
  - High winds
  - Extreme temperatures
  - Excessive snow
  - Insufficient snow cover
  - Ice
  - Cycling temperatures
  - Excessive salt use

Early Season Landscape Diseases
Winter Injury/Winter Burn

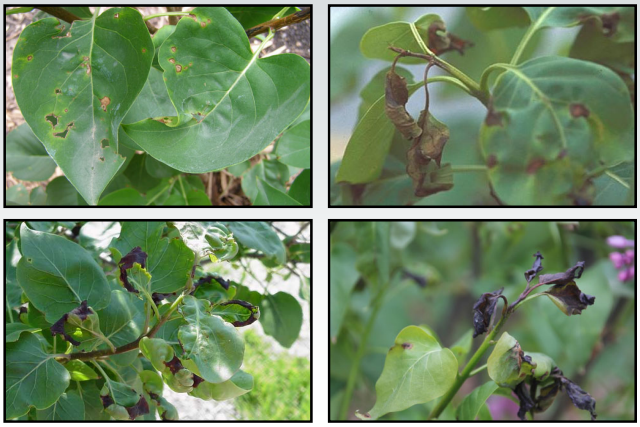
- Affected plants
  - Evergreens
    - Needled (yew, Alberta spruce, arborvitae)
    - Broad-leafed (boxwood)
  - Decidous trees
    - Fruit trees (apple, pear, cherry, plum, peach, apricot)
    - Maples (Japanese, Korean)
    - Redbud

Early Season Landscape Diseases
Winter Injury/Winter Burn

- Management
  - Water trees and shrubs adequately
  - Plant trees and shrubs
    - Properly
    - In protected locations (sensitive plants)
  - Protect sensitive plants
  - Pray for
    - Lots of snow
    - Slow, gradual seasonal transitions

Early Season Landscape Diseases
Bacterial Blight

- Cause: *Pseudomonas syringae* pv. *syringae*
- Host
  - Lilac
  - Other trees and shrubs
- Favorable environment
  - Wet weather
  - Cold temperatures



Early Season Landscape Diseases
Bacterial Blight

- Control
  - Space lilacs to promote good air flow
  - Maintenance prune routinely
  - Avoid overhead watering
  - Reduce stress
  - Prune diseased branches
  - Decontaminate pruning tools (70% alcohol, disinfectants, 10% bleach)

Early Season Landscape Diseases
Bacterial Blight

- Control
  - Destroy infected materials
    - Burn (where allowed)
    - Deep bury
  - Use bactericides to prevent infections
    - Copper + mancozeb
    - Apply starting at bud break, 2-3 times at 7 to 10-day intervals

Early Season Landscape 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

Early Season Landscape 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

Early Season Landscape Diseases
Scab (Apple and Pear)

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

Early Season Landscape Diseases
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/)

Early Season Landscape Diseases
Scab (Apple and Pear)

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

Early Season Landscape 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

Early Season Landscape 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)

Early Season Landscape 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

Early Season Landscape 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

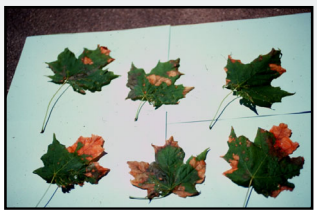
Early Season Landscape Diseases
Rhizosphaera Needle Cast

- 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

Early Season Landscape Diseases
Anthracnose

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






Early Season Landscape Diseases
Anthracnose

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

Early Season Landscape Diseases
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

Early Season Landscape Diseases
Gymnosporangium Rusts

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

Early Season Landscape Diseases
Gymnosporangium Rusts

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




Early Season Landscape 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.uwex.edu/)
    - "Home Fruit Cultivars for Southern Wisconsin" (https://learningstore.uwex.edu/)

Early Season Landscape Diseases
Gymnosporangium Rusts

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

Early Season Landscape 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

Early Season Landscape Diseases
White Pine Blister Rust

- Pathogen: *Cronartium ribicola*
- Hosts
  - White pine
  - Gooseberry/Currants (*Ribes* spp.)
- Favorable environment: Wet weather

Early Season Landscape Diseases
White Pine Blister Rust

- Control
  - Remove and destroy gooseberries/currants
  - Plant pines other than white pine
  - DO NOT overcrowd white pines
  - Keep weeds under control
  - DO NOT overhead irrigate
  - Scout routinely for disease

Early Season Landscape Diseases
White Pine Blister Rust

- Control
  - Prune diseased branches
  - Prune healthy branches from the ground up
  - Disinfest pruning tools (70% alcohol, disinfectants, 10% bleach)
- DO NOT use fungicides

Early Season Landscape Diseases
Fire Blight

- Cause: *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)

Early Season Landscape Diseases
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

Early Season Landscape Diseases
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

Early Season Landscape Diseases
Fire Blight

- Control
  - Use bactericides to prevent infections (?)
    - Copper, streptomycin
    - Apply during flowering
    - Apply every 7-14 days (3-4 days)

Early Season Landscape Diseases
Black Knot

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

Early Season Landscape 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

Early Season Landscape Diseases
Black Knot

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

Early Season Landscape 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
Follow on Facebook and Twitter @UWPDDC
Subscribe to the PDDC Listserv: UWPDDCLearn