2025 LGMSC

Diseases of Crabapples and Lilacs to Challenge Your Landscaping Skills

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

Extension
UNIVERSITY OF WISCONSIN-MADISON

NPDN
National Plant Diagnostic Network

College of
Agricultural & Life Sciences
UNIVERSITY OF WISCONSIN-MADISON

Diseases of Crabapples and Lilacs
Apple Scab

- **Pathogen:** *Venturia inaequalis*
- **Hosts**
  - Crabapple/apple
  - Mountain ash
- **Favorable environment:** Cool, wet weather

Diseases of Crabapples and Lilacs
Apple Scab

- **Control**
  - **Plant resistant varieties**
    - "Top Ornamental Crabapples for Wisconsin" (https://hort.extension.wisc.edu/)
    - "Home Fruit Cultivars for Northern Wisconsin" (https://learningstore.extension.wisc.edu/)
    - "Home Fruit Cultivars for Southern Wisconsin" (https://learningstore.extension.wisc.edu/)

Diseases of Crabapples and Lilacs
Apple Scab

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

Diseases of Crabapples and Lilacs
### Apple Scab

- **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

Diseases of Crabapples and Lilacs
Gymnosporangium Rusts

- **Pathogens: *Gymnosporangium* spp.**
  - *Gymnosporangium juniperi-virginianae* (Cedar-apple rust)
  - *Gymnosporangium yamadae* – NEW! (Red star rust)

Diseases of Crabapples and Lilacs
Gymnosporangium Rusts

- **Hosts**
  - **Junipers**
  - **Crabapple/apple**
  - **Other woody rosaceous hosts**
- **Favorable environment: Wet weather**
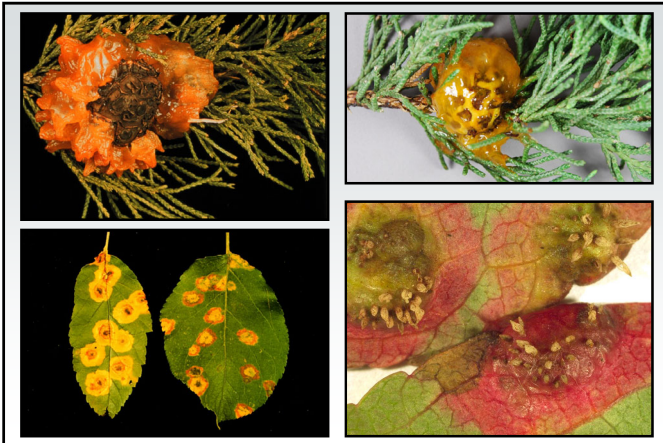
Diseases of Crabapples and Lilacs
Gymnosporangium Rusts

- **Control**
  - **Cultivate the ability to ignore these diseases (?)**
  - **Grow <u>only</u> junipers <u>or</u> crabapples/apples**
  - **Use resistant cultivars/varieties**
    - **"Home Fruit Cultivars for Northern Wisconsin"** (https://learningstore.extension.wisc.edu/)
    - **"Home Fruit Cultivars for Southern Wisconsin"** (https://learningstore.extension.wisc.edu/)

Diseases of Crabapples and Lilacs
Gymnosporangium Rusts

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

Diseases of Crabapples and Lilacs
Gymnosporangium Rusts

- **Control**
  - **Use fungicides to prevent infections (?)**
    - **Treat crabapples**
    - **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**

Diseases of Crabapples and Lilacs
Fire Blight

- **Pathogen:** *Erwinia amylovora*
- **Hosts**
  - Crabapple/apple
  - Many other woody rosaceous plants
- **Favorable environment**
  - Wet weather (but not too wet)
  - Hail (or other wounding)

Diseases of Crabapples and Lilacs
Fire Blight

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

Diseases of Crabapples and Lilacs
Fire Blight

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

Diseases of Crabapples and Lilacs
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)

Diseases of Crabapples and Lilacs
Blister Canker (Nailhead Canker)

- **Pathogen:** *Biscogniauxia marginata*
- **Hosts**
  - Crabapple/apple
  - Mountain-ash, pear, serviceberry
  - American elm, honey locust, hornbeam, magnolia, oak
- **Favorable environment: Dry conditions**

3

Diseases of Crabapples and Lilacs
Blister Canker

Diseases of Crabapples and Lilacs
Blister Canker (Nailhead Canker)

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

Diseases of Crabapples and Lilacs
Blister Canker (Nailhead Canker)

- **Control**
  - **Fertilize appropriately**
  - **Water appropriately**
  - **Maintenance prune routinely**
  - **DO NOT use fungicides**

Diseases of Crabapples and Lilacs
Root/Crown Rots

- **Pathogens**
  - *Rhizoctonia solani* — *Pythium* spp.
  - *Fusarium* spp. — *Phytophthora* spp.
  - *Cylindrocarpon* spp.
- **Hosts**
  - **Crabapple**
  - **Lilac**
- **Favorable environment: Cool, wet soils**

Diseases of Crabapples and Lilacs
Root/Crown Rots

- **Control**
  - **Moderate soil moisture**
    - **Grow trees/shrubs in well-drained sites**
    - **Improve drainage in poorly drained soils**
      - **Add organic matter to improve drainage**
      - **Use raised beds**
    - **DO NOT overwater**
    - **DO NOT overmulch**

Diseases of Crabapples and Lilacs
Root/Crown Rots

- **Control**
  - **DO NOT move contaminated soil or plants**
  - **Decontaminate tools
    (70% alcohol, disinfectants, bleach)**
  - **Pretest soils/mulches/composts**

Diseases of Crabapples and Lilacs
Root/Crown Rots

- **Control**
  - **Use fungicides to prevent infections**
    - **PCNB, thiophanate-methyl, fludioxonil, Etridiazole, metalaxyl/mefenoxam, fosetyl-Al**
    - **Use granular formulations if possible**
    - **Use during periods of wet weather**

Diseases of Crabapples and Lilacs
Powdery Mildews

- **Pathogens**
  - *Microsphaera syringae* **(lilac)**
  - *Podosphaera leucotricha* **(crabapple)**
- **Hosts**
  - **Lilac**
  - **Crabapple**
- **Favorable environment: High humidity**

Diseases of Crabapples and Lilacs
Powdery Mildews

- **Control**
  - **Cultivate the ability to ignore these diseases**
  - **Plant shrubs/trees in full sun**
  - **Reduce humidity**
    - **Plant less densely**
    - **Thin canopies**

Diseases of Crabapples and Lilacs
Powdery Mildews

- **Control**
  - **Remove/destroy diseased leaves**
    - **Burn (where allowed)**
    - **Deep bury**
    - **Hot compost**
  - **Use resistant cultivars/varieties**

Diseases of Crabapples and Lilacs
Powdery Mildews

- **Control**
  - **Use fungicides to prevent infections (?)**
    - **Dinocap, dithiocarbamates, myclobutanil, triadimefon, triforine, sulfur, 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**

Diseases of Crabapples and Lilacs
Septoria Leaf Spot

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

Diseases of Crabapples and Lilacs
Septoria Leaf Spot

- **Control**
  - **Space lilacs to promote good air flow**
  - **Routinely thin shrubs**
  - **Avoid overhead watering**
  - **Reduce stress**
  - **Destroy infected materials**
    - **Burn (where allowed)**
    - **Deep bury**
    - **Hot compost**

Diseases of Crabapples and Lilacs
Septoria Leaf Spot

- **Control**
  - **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**

Diseases of Crabapples and Lilacs
Verticillium Wilt

- **Pathogen: *Verticillium dahliae***
- **Hosts**
  - **Lilac**
  - **Many other woody ornamentals**
  - **Many herbaceous ornamentals and vegetables**
- **Favorable environment**
  - **Cool, wet weather (for infection)**
  - **Hot, dry weather (for symptom development)**

Diseases of Crabapples and Lilacs
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**

Diseases of Crabapples and Lilacs
### Verticillium Wilt

- **Control**
  - **Use immune/resistant plants**
    - **CONIFERS: Pines, spruces, firs, junipers**
    - **DECIDUOUS TREES/SHRUBS: Beech, birch, crabapple, ginkgo, hackberry, hawthorn, hickory, honey locust, mountain ash, white oak, bur oak, poplar, serviceberry, sycamore, willow**
  - **Prevent stress**
  - **Prune diseased (wilted) areas**

Diseases of Crabapples and Lilacs
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**

Diseases of Crabapples and Lilacs
Bacterial Blight

- **Pathogen: *Pseudomonas syringae* pv. *syringae***
- **Host**
  - **Lilac**
  - **Other trees and shrubs**
- **Favorable environment**
  - **Wet weather**
  - **Cold temperatures**
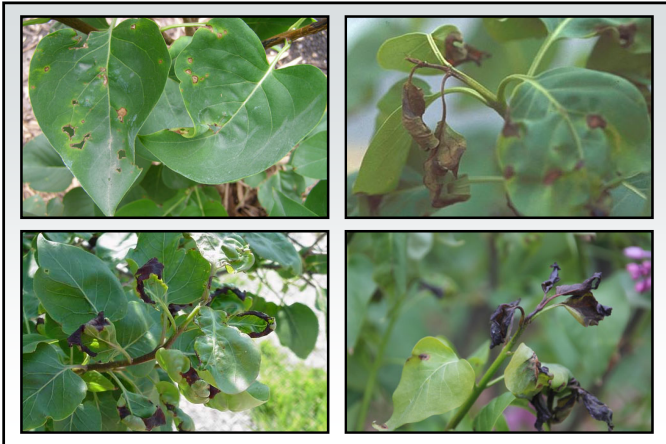
Diseases of Crabapples and Lilacs
Bacterial Blight

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

Diseases of Crabapples and Lilacs
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
    - Apply at 7 to 10-day intervals

Diseases of Crabapples and Lilacs
Lilac Witches' Broom

- **Pathogen: Ash yellows phytoplasma**
  (*Candidatus* Phytoplasma fraxini)
- **Hosts**
  - Lilac
  - Various ash species

Diseases of Crabapples and Lilacs
Lilac Witches' Broom

- **Favorable environment**
  - High leafhopper (*Scaphoideus*) populations

Diseases of Crabapples and Lilacs
Lilac Witches' Broom

- **Control**
  - **Remove infected shrubs/trees**
  - **Destroy infected materials**
    - **Burn (where allowed)**
    - **Deep bury**
  - **Avoid growing susceptible shrubs/trees**
  - **NO chemical treatments**

Diseases of Crabapples and Lilacs
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, Twitter, Bluesky: @UWPDDC
Subscribe to the PDDC Listserv: UWPDDCLearn