

Jackson County Seminar

Top Ten Fruit and Vegetable Diseases to Watch for in 2016

Brian D. Hudelson

Department of Plant Pathology

University of Wisconsin-Madison/Extension



Top Ten Fruit and Vegetable Diseases Tomato Leaf Blights

- **Causes**
 - Septoria lycopersici (Septoria leaf spot)
 - Alternaria solani (early blight)
 - Phytophthora infestans (late blight)
- **Hosts**
 - Tomato
 - Potato (early blight, late blight)
- **Favorable environment:** Cool, wet weather



Top Ten Fruit and Vegetable Diseases Tomato Leaf Blights

- **Control (early blight, Septoria leaf spot)**
 - Remove and destroy infested debris
 - Move tomatoes to new location (?)
 - Plant resistant varieties (?)
 - Space plants far apart
 - Mulch around the base of plants
 - DO NOT over-mulch

Top Ten Fruit and Vegetable Diseases Tomato Leaf Blights

- **Control (early blight, Septoria leaf spot)**
 - DO NOT overhead water
 - Remove infected leaf tissue (?)
 - Use fungicides to prevent infections
 - Chlorothalonil, copper, neem oil
 - Alternate active ingredients (FRAC codes)
 - Apply at 7-14 days intervals

Top Ten Fruit and Vegetable Diseases Tomato Leaf Blights

- **Control (late blight)**
 - Remove and destroy
 - Infected plants, fruits, tubers
 - Volunteer tomato and potato plants
 - Weed hosts
 - **DO NOT** use last year's potatoes as seed potatoes
 - **DO** use certified seed potatoes

Top Ten Fruit and Vegetable Diseases Tomato Leaf Blights

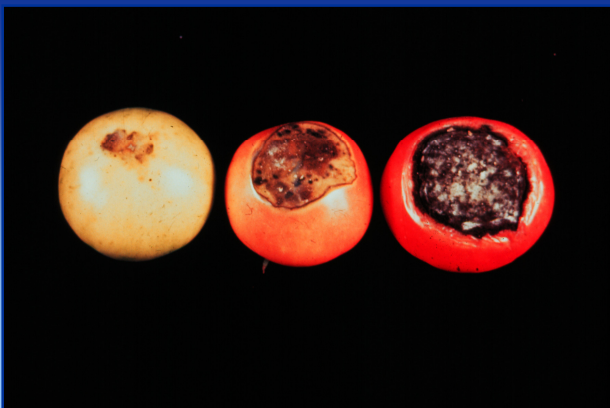
- **Control (late blight)**
 - Grow resistant tomato varieties
 - **Excellent:** 'Black Plum', 'Defiant', 'Iron Lady', 'Matt's Wild Cherry', 'Mountain Magic', 'Mountain Merit', 'Plum Regal', 'Yellow Currant', 'Yellow Pear'
 - **Good:** 'Aunt Ginny's Purple', 'Big Rainbow', 'Red Currant', 'Tigerella'
 - **Moderate:** 'Aunt Ruby's German Green', 'Black Krim', 'Juliet', 'Pruden's Purple', 'Red Pearl', 'Slava', 'Stupice', 'Sun Sugar', 'Wapsipinicon', 'Wisconsin 55'

Top Ten Fruit and Vegetable Diseases Tomato Leaf Blights

- **Control (late blight)**
 - Use fungicides to prevent infections
 - Chlorothalonil, copper
 - Apply at 7-14 day intervals

Top Ten Fruit and Vegetable Diseases Blossom End Rot

- **Cause:** Calcium deficiency
- **Hosts**
 - Tomato
 - Pepper
 - Eggplant
 - Cucurbits (cucumber, squash, pumpkin)
- **Favorable environment:** Drought



Top Ten Fruit and Vegetable Diseases Blossom End Rot

- **Management**
 - Test soil to determine calcium level
 - Add calcium as needed
 - Bone meal
 - Egg shells
 - Water plants adequately

Top Ten Fruit and Vegetable Diseases Powdery Mildew

- **Causes**
 - *Sphaerotheca fuliginea*
 - *Erysiphe cichoracearum*
 - *Oidium* spp.
- **Hosts**
 - Cucurbits (cucumber, squash pumpkin)
 - Other vegetables (and fruits)
- **Favorable environment: High humidity**

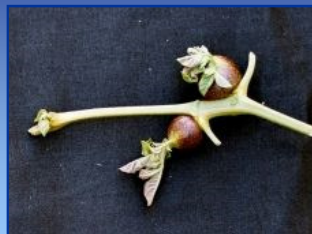


Top Ten Fruit and Vegetable Diseases Powdery Mildew

- **Control**
 - Plant resistant varieties
 - DO NOT crowd plants
 - Thin vines
 - Apply fungicides for control
 - Elemental sulfur
 - 1.5 Tbsp baking soda + 3 Tbsp light-weight horticultural oil in 1 gal water
 - Apply at 7-14 day intervals

Top Ten Fruit and Vegetable Diseases Aster Yellows

- **Cause: Aster yellows phytoplasma**
- **Hosts**
 - Carrot
 - Potato
 - Other vegetables
- **Favorable environment**
 - None in terms of weather
 - High aster leafhopper populations



Top Ten Fruit and Vegetable Diseases Aster Yellows

- **Control**
 - Remove infected plants
 - Control leafhoppers (?)

Top Ten Fruit and Vegetable Diseases Herbicide Injury

- **Causes**
 - Growth regulator herbicides
 - 2,4-D
 - Dicamba
 - Other classes of herbicides
- **Affected plants**
 - All vegetables, particularly tomato
- **Favorable Environment: High wind**



Top Ten Fruit and Vegetable Diseases Herbicide Injury

- **Management**
 - DO NOT use herbicides
 - If you or your neighbors do use herbicides, make sure that you or they
 - Follow application directions exactly
 - Apply herbicides at low wind speeds (< 5 mph)
 - DO NOT apply herbicides too close to sensitive plants
 - Apply herbicides at low pressure
 - Use amine rather than ester forms of herbicides

Top Ten Fruit and Vegetable Diseases Scab (Apple and Pear)

- **Cause:** Venturia inaequalis (V. pirina)
- **Hosts**
 - Apple
 - Crabapple
 - Pear
 - Mountain ash
- **Favorable environment:** Cool, wet weather



Top Ten Fruit and Vegetable Diseases Scab (Apple and Pear)

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

Top Ten Fruit and Vegetable Diseases **Scab (Apple and Pear)**

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

Top Ten Fruit and Vegetable Diseases **Black Knot**

- **Cause:** Apiosporina morbos
- **Hosts**
 - Prunus species
 - Plums
 - Cherries
- **Favorable environment:** Wet weather



Top Ten Fruit and Vegetable Diseases **Black Knot**

- **Control**
 - DO NOT plant infected Prunus stock
 - Buy black knot-resistant varieties if available (Prunus 'Accolade', Prunus sargentii, Prunus maackii)
 - Remove volunteer plums/cherries
 - Prune diseased branches
 - DO NOT use fungicides

Top Ten Fruit and Vegetable Diseases **Fire Blight**

- **Cause:** Erwinia amylovora
- **Hosts**
 - Many rosaceous plants
 - Apple, crabapple, pear, mountain ash, cotoneaster
- **Favorable environment**
 - Wet weather
 - Hail



Top Ten Fruit and Vegetable Diseases *Fire Blight*

- **Control**
 - Plant resistant varieties where available
 - Prune diseased branches
 - Do not over-fertilize with nitrogen
 - Use bactericides to prevent infections (?)
 - Copper-containing fungicides, antibiotics
 - During flowering
 - Applications every 7-14 days (3-4 days)

Top Ten Fruit and Vegetable Diseases *Brown Rot*

- **Causes**
 - *Monilinia fructicola*
 - *Monilinia laxa*
 - *Monilinia fructigena*
- **Hosts**
 - Stone fruits (apricot, cherry, peach, plum)
 - Apple
- **Environmental trigger: Wet weather**



Top Ten Fruit and Vegetable Diseases *Brown Rot*

- **Control**
 - Remove mummified fruits
 - Prune out diseased/dead branches
 - Remove volunteer stone fruit trees/shrubs
 - Dispose of contaminated plant materials
 - Burning
 - Burying
 - Prune healthy branches to increase air flow

Top Ten Fruit and Vegetable Diseases *Brown Rot*

- **Control**
 - Decontaminate pruning tools
 - 10% bleach
 - 70% alcohol
 - DO NOT overhead water
 - Carefully handle fruits at harvest

Top Ten Fruit and Vegetable Diseases *Brown Rot*

- **Control**
 - Use fungicides to prevent infections
 - Captan, myclobutanil, propiconazole
 - Apply at 10% flower (flower infections)
 - Apply 3 weeks prior to harvest (fruit infections)
 - Alternate active ingredients (FRAC codes)
 - Manage insects that injure fruit

Top Ten Fruit and Vegetable Diseases Root/Crown Rots

- **Pathogens**
 - Pythium spp.
 - Phytophthora spp.
 - Rhizoctonia solani
 - Fusarium spp.
 - Cylindrocarpon spp.
 - Thielaviopsis spp.

Top Ten Fruit and Vegetable Diseases Root/Crown Rots

- **Hosts**
 - Any fruit crop
 - Strawberry
 - Raspberry
 - Apple
- **Favorable environment**
 - High soil moisture
 - Cool soil temperatures



Top Ten Fruit and Vegetable Diseases Root/Crown Rots

- **Control**
 - Moderate soil moisture
 - Grow plants in well-drained sites
 - Use a soil with adequate drainage
 - Improve drainage in poorly drained soils
 - Add organic matter to improve drainage
 - Use raised beds
 - DO NOT overwater
 - DO NOT overmulch

Top Ten Fruit and Vegetable Diseases Root/Crown Rots

- **Control:**
 - DO NOT move contaminated soil or plants to non-infested areas
 - Decontaminate infested tools, pots, work areas
 - Pretest soils/mulches/composts for the presence of root rot fungi

Top Ten Fruit and Vegetable Diseases Root/Crown Rots

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

***Top Ten Fruit and Vegetable 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@plantpath.wisc.edu
<http://pddc.wisc.edu>
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