**Diseases of Vegetables**

**Tomato Leaf Blights**

- **Causes**
  - *Septoria lycopersici* (Septoria leaf spot)
  - *Alternaria solani* (early blight)
  - *Phytophthora infestans* (late blight)

- **Hosts**
  - Tomato
  - Potato (early blight, late blight)

- **Environmental trigger**
  - Long periods of leaf wetness

**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

**Control (early blight, Septoria leaf spot)**
- DO NOT overhead water
- Remove infected leaf tissue (?)
- Use fungicides to prevent infections
  - Copper, neem oil
  - Applications every 7-14 days
Diseases of Vegetables  
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

Diseases of Vegetables  
Tomato Leaf Blights  

- Control (late blight)  
  - Grow resistant tomato varieties  
    - Excellent  
        Currant’, ‘Yellow Pear’, ‘Black Plum’  
    - Good  
        ‘Tigerella’

Diseases of Vegetables  
Tomato Leaf Blights  

- Control (late blight)  
  - Grow resistant tomato varieties  
    - Moderate  
        ‘Pruden’s Purple’, ‘Slava’, and ‘Stupice’  
  - Use fungicides to prevent infections  
    - Copper  
    - Applications every 7-14 days

Diseases of Vegetables  
Blossom End Rot  

- Cause: Calcium deficiency
- Hosts  
  - Tomato  
  - Pepper  
  - Eggplant  
  - Cucurbits (cucumber, squash, pumpkin)
- Environmental trigger: Drought

Diseases of Vegetables  
Blossom End Rot  

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

**Powdery Mildew**

- **Causes**
  - *Sphaerotheca fuliginea*
  - *Erysiphe cichoracearum*
  - *Oidium* spp.
- **Hosts**
  - Cucurbits (cucumber, squash, pumpkin)
  - Other vegetables
- **Environmental trigger:** High humidity

**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
  - Applications every 7-14 days

**Aster Yellows**

- **Cause:** Aster yellows phytoplasma
- **Hosts**
  - Carrot
  - Potato
  - Other vegetables
- **Environmental trigger**
  - High aster leafhopper populations

**Control**

- Control leafhoppers (?)
- Remove infected plants
Diseases of Vegetables
Herbicide Injury

- Causes
  - Growth regulator herbicides
    - 2,4-D
    - Dicamba
  - Other herbicides
- Affected plants
  - All vegetables
  - Particularly tomato

Diseases of Vegetables
Herbicide Injury

- Control
  - 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

Diseases of Vegetables
Common Smut

- Cause: *Ustilago maydis*
- Host: Corn
- Environmental trigger
  - Hail (for leaf and stalk infections)

Diseases of Vegetables
Common Smut

- Control
  - Plant resistant varieties
  - Reduce physical damage to corn plants
  - Give up on your corn and eat the smut
**Diseases of Vegetables**

**Scab**
- **Cause:** *Streptomyces scabies*
- **Host**
  - Potato
  - Other root crops (carrot, radish, turnip)
- **Environmental trigger:** High soil pH

**Control**
- Plant scab-free potato stock
- Routinely rotate crops to avoid build-up of the pathogen
  - Avoid planting potatoes in infested areas
  - Plant non-hosts in infested areas
- Move potatoes to another location
- Plant scab resistant varieties
- Lower soil pH

**White Mold**
- **Cause:** *Sclerotinia sclerotiorum*
- **Host**
  - Snap beans
  - Other vegetables
  - Sunflower
- **Environmental trigger**
  - Cool, wet weather

**Control**
- Buy high quality seed
- Routinely rotate crops to avoid build-up of the pathogens
  - Avoid planting susceptible vegetables in infested areas (5-7 yrs)
  - Plant non-hosts in infested areas
- Control broad-leaf weeds
- Plant beans with wider row spacings
Diseases of Vegetables

White Mold

• Control
  – DO NOT over-water
  – DO NOT over-mulch
  – DO NOT over-fertilize
  – Remove symptomatic plants immediately
  – Use biological control products
    • Coniothyrium minitans
    • Parasitizes sclerotia

Cucumber Mosaic

• Cause: Cucumber mosaic virus
• Hosts
  – Cucurbitis
  – Pepper
  – Tomato
• Environmental trigger
  – High aphid populations

White Mold

Damping-Off/Seedling Blights

• Causes
  – Pythium spp.
  – Rhizoctonia solani
  – Fusarium spp.
  – Other fungi and water molds
• Hosts: Any vegetable seedling
• Environmental trigger: Cool, wet soils
**Diseases of Vegetables**

**Damping-Off/Seedling Blights**

- **Control**
  - Use a pasteurized soil mixture
  - Use decontaminated pots, working surfaces and tools
  - Moderate soil moisture
    - Use a soil with adequate drainage
    - DO NOT over-water

- Use a soil with adequate drainage
- DO NOT over-water

**Diseases of Vegetables**

**Damping-Off/Seedling Blights**

- **Control**
  - Germinate seeds at higher temperatures
  - Use biological control products to protect seedlings
      - Applied as a seed treatment or soil treatment

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**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  
Follow the clinic on Twitter @UWPDDC