

## 2017 Responding to Horticulture Inquiries

### 2017 Plant Disease Update

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## 2017 Plant Disease Update Winter Injury/Winter Burn

- **Causes**
  - Water stress
  - Extreme winter temperatures
  - Insufficient snow cover
  - Cycling winter temperatures
- **Affected plants**
  - Evergreens (yews, Alberta spruce, boxwood)
  - Deciduous trees (fruit trees, redbud)



## 2017 Plant Disease Update Winter Injury/Winter Burn

- **Management**
  - Water trees and shrubs adequately
  - Plant trees and shrubs
    - Properly
    - In protected locations (sensitive plants)
  - Insulate sensitive plants where possible
  - Pray for
    - Lots of snow
    - A slow, gradual spring warm up

## 2017 Plant Disease Update Boxwood (Box) Blight

- **Cause**
  - Calonectria pseudonaviculata
  - Cylindrocladium pseudonaviculatum  
(Cylindrocladium buxicola)
- **Hosts**
  - Boxwood
  - Pachysandra
- **Favorable Environment: Cool, wet weather**



### 2017 Plant Disease Update Boxwood (Box) Blight

- **Control**
  - Buy locally produced boxwood
  - Grow resistant varieties
    - 'Green Mound'
    - 'Glencoe' (Chicagoland Green®)
  - Avoid symptomatic plants
  - Keep new plants isolated

### 2017 Plant Disease Update Boxwood (Box) Blight

- **Control**
  - Physically separate boxwood plantings
  - Space plants far apart
  - DO NOT overhead water
  - Prune out diseased branches

### 2017 Plant Disease Update Boxwood (Box) Blight

- **Control**
  - Disinfect pruning tools and other items
    - 70% alcohol
    - Commercial disinfectants
    - 10% bleach
  - Remove and destroy infected plants
    - Burn (where allowed)
    - Deep bury

### 2017 Plant Disease Update Boxwood (Box) Blight

- **Control**
  - Use fungicides to prevent infections
    - Chlorothalonil, fludioxonil, mancozeb, metconazole, propiconazole, tebuconazole, thiophanate-methyl
    - 7 day application intervals
    - Alternate active ingredients (FRAC codes)
  - Contact the PDDC if you believe you have found boxwood (box) blight!

### 2017 Plant Disease Update Thousand Cankers Disease

- **Cause:** *Geosmithia morbida*
- **Hosts**
  - Black walnut
  - Other walnuts
- **Favorable Environment:** None
- **Transmission**
  - Walnut twig beetle  
(*Pityophthorus juglandis*)

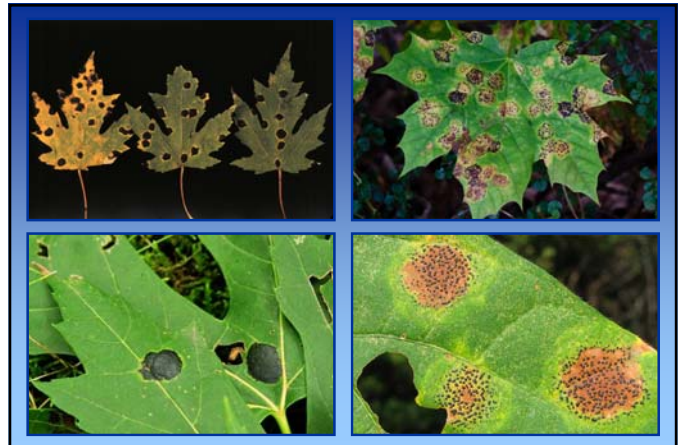


### 2017 Plant Disease Update Thousand Cankers Disease

- **Control**
  - DO NOT transport walnut wood/products from areas known to have the disease
  - Remove and destroy affected trees (burn)
  - No effective fungicide strategies known
  - No effective insecticide strategies known
  - Contact the PDDC if you believe you have found this disease!

### 2017 Plant Disease Update Tar Spot

- **Causes:** *Rhytisma americanum*  
*Rhytisma acerinum*
- **Hosts:** Maples
- **Favorable environment:** Cool, wet weather



### 2017 Plant Disease Update Tar Spot

- **Control**
  - DO NOT panic
  - Remove/destroy diseased leaves
    - Burn (where allowed)
    - Deep bury
    - Hot compost
  - Use fungicides to prevent infections
    - Copper
    - Apply 3 applications: bud break, 1/2 leaf expansion, full leaf expansion

### 2017 Plant Disease Update Fungal 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





### 2017 Plant Disease Update Fungal Leaf Blights

- **Control (early blight, Septoria leaf spot)**
  - Remove and destroy infested debris
    - Burn (where allowed)
    - Deep bury
    - Hot compost
  - Decontaminate infested items
    - 70% alcohol
    - Commercial disinfectants
    - 10% bleach

### 2017 Plant Disease Update Fungal Leaf Blights

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

### 2017 Plant Disease Update Fungal Leaf Blights

- **Control (early blight, Septoria leaf spot)**
  - Use fungicides to prevent infections
    - Chlorothalonil, mancozeb
    - Copper
    - Alternate active ingredients (FRAC codes)
    - Apply at 7-14 days intervals

### 2017 Plant Disease Update Fungal 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

## 2017 Plant Disease Update Fungal Leaf Blights

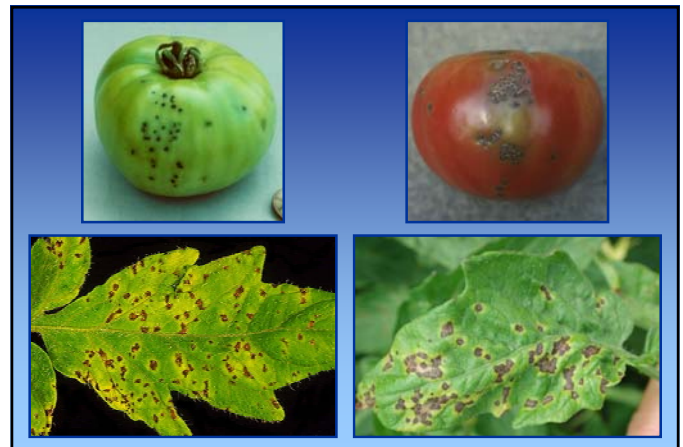
- **Control (late blight)**
  - Grow resistant tomato varieties
    - “Late Blight Management in Tomato with Resistant Varieties”  
<http://www.extension.org/pages/72678/late-blight-management-in-tomato-with-resistant-varieties#.VVNSsPIVhBd>

## 2017 Plant Disease Update Fungal Leaf Blights

- **Control (late blight)**
  - Use fungicides to prevent infections
    - Chlorothalonil, mancozeb
    - Copper
    - Alternate active ingredients (FRAC codes)
    - Start applications based on Blitecast (<http://www.plantpath.wisc.edu/wiveqdis/>)
    - Apply at 7-14 day intervals

## 2017 Plant Disease Update Bacterial Tomato Diseases

- **Causes**
  - *Pseudomonas syringae* pv. *tomato* (bacterial speck)
  - *Xanthomonas* spp. (bacterial spot)
- **Host: Tomato**
- **Favorable environment**
  - Cool, wet weather (bacterial speck)
  - Warm, wet weather (bacterial spot)



## 2017 Plant Disease Update Bacterial Tomato Diseases

- **Control**
  - Dispose of contaminated plant debris
    - Burn (where allowed)
    - Deep bury
    - Hot compost
  - Remove and destroy volunteer tomatoes
  - Start with pathogen-free seeds and plants
  - Hot water treat seeds (122°F, 25 minutes)
  - Move tomatoes to new location

## 2017 Plant Disease Update Bacterial Tomato Diseases

- **Control**
  - Decontaminate infested items
    - 70% alcohol
    - Commercial disinfectants
    - 10% bleach
  - Space plants far apart
  - Mulch plants
  - DO NOT over-mulch
  - DO NOT overhead water

## 2017 Plant Disease Update Bacterial Tomato Diseases

- **Control**
  - DO NOT handle plants when wet
  - Use bactericides to prevent infections
    - Copper
    - Apply at 7-14 days intervals
    - Tolerant bacterial strains are a problem

## 2017 Plant Disease Update Black Rot

- **Cause:** *Xanthomonas campestris* pv. *campestris*
- **Hosts: Crucifers**
  - Brussels sprouts, cabbage, collards
  - Broccoli, cauliflower, kale, kohlrabi, rutabaga, turnips
- **Environmental trigger:** Wet weather



## 2017 Plant Disease Update Black Rot

- **Control**
  - Buy high quality (certified pathogen-free) seed or transplants
  - Heat treat seeds
    - 35 min, 122°F (Brussels sprouts, cabbage, collards)
    - 20 min, 122°F (broccoli, cauliflower, kale, kohlrabi, rutabaga, turnips)

## 2017 Plant Disease Update Black Rot

- **Control**
  - Routinely rotate crops
    - DO NOT grow host plants in an infested areas
    - Plant non-hosts in infested areas
  - Fertilize properly (particularly nitrogen)
  - DO NOT overhead water
  - DO NOT handle plants when wet

## 2017 Plant Disease Update Black Rot

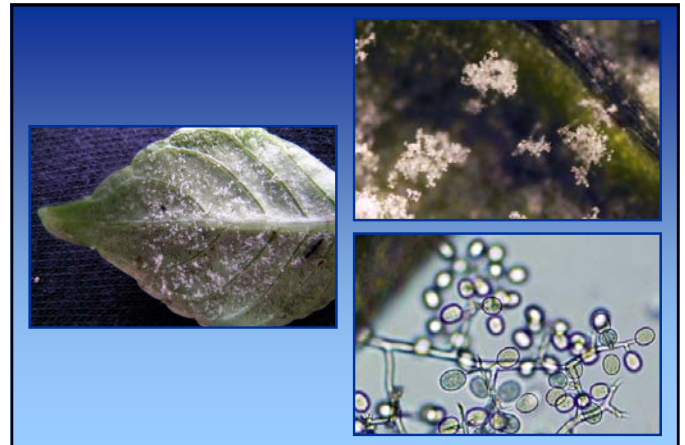
- **Control**
  - Remove and dispose of contaminated plants
    - Burn (where allowed)
    - Deep bury
    - Hot compost
  - Decontaminate infested items
    - 10% bleach
    - 70% alcohol
    - Commercial disinfectants

## 2017 Plant Disease Update Black Rot

- **Control**
  - Use bactericides to prevent infections
    - Copper
    - Apply at 7-14 days intervals
    - Tolerant bacterial strains are a problem

## 2017 Plant Disease Update Impatiens Downy Mildew

- **Cause:** *Plasmopara obducens*
- **Hosts**
  - Standard garden impatiens (*I. walleriana*)
  - Balsam impatiens (*I. balsamina*)
  - Jewelweed (*I. pallida*, *I. capensis*)
  - New Guinea impatiens (*I. hawkeri*)  
(resistant/tolerant)
- **Favorable environment:** Wet weather



## 2017 Plant Disease Update Impatiens Downy Mildew

- **Control**
  - Grow tolerant/resistant/immune plants
  - Start with clean transplants and seed
  - Keep materials from different sources physically separated
  - DO NOT grow impatiens in the same area every year
  - DO NOT overcrowd plants
  - DO NOT overhead water

## 2017 Plant Disease Update Impatiens Downy Mildew

- **Control**
  - Watch for disease on a regular basis
  - Bag and discard affected plants
    - Symptomatic plants
    - Asymptomatic surrounding plants
  - Disinfect contaminated materials
    - 70% alcohol
    - Commercial disinfectants
    - 10% bleach



## 2017 Plant Disease Update Impatiens Downy Mildew

- **Control**
  - Use fungicides to prevent infections
    - Mancozeb
    - Apply at 7 day application intervals

## 2017 Plant Disease Update Southern Blight

- **Pathogen:** Sclerotium rolfsii
- **Hosts**
  - Many herbaceous annuals and perennials
    - Hosta
    - Bedding plants
  - Some woody ornamentals



## 2017 Plant Disease Update Southern Blight

- **Control**
  - DO NOT buy infected/infested plants
  - Avoid cocoa mulch (?)
  - Remove infected plants, mulch and soil
    - Double bag
    - Landfill
  - Disinfect contaminated materials
    - 70% alcohol
    - Commercial disinfectants
    - 10% bleach

## 2017 Plant Disease Update Southern Blight

- **Control**
  - Amend soil with organic matter (?)
  - Use fungicides for control
    - Contract with a professional applicator
    - Azoxystrobin, flutolanil, flutolanil + thiophanate-methyl, PCNB, tebuconazole, triadimefon
    - Alternate active ingredients (FRAC codes)
    - 14 – 28 day intervals
  - Pray for a really, really, REALLY cold winter

## 2017 Plant Disease Update Foliar Nematode

- **Cause:** Aphelenchoides spp.
- **Hosts**
  - Many types of herbaceous plants
  - Landscape plants
    - Hosta, begonia, coral bells, miterwort
  - Houseplants
    - African violets, ferns, chrysanthemum





## 2017 Plant Disease Update Foliar Nematode

- **Control**
  - Inspect plants prior to purchase for symptoms
  - Avoid overhead irrigation
  - Remove symptomatic plants and infested plant debris
    - Burn (where allowed)
    - Deep bury (landfill)
    - Hot compost

## 2017 Plant Disease Update Foliar Nematode

- **Control**
  - Disinfest contaminated materials
    - 70% alcohol
    - Commercial disinfectants
    - 10% bleach
  - Hot water treat plants (10 minutes at 125°F)

## 2017 Plant Disease Update 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](mailto:pddc@wisc.edu)  
<http://pddc.wisc.edu>  
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