Victory Garden 101: Common Disease Problems
Notes Page

General Disease Control Practices

- Sanitation
- Appropriate Plant Spacings
- Crop Rotation/Cover Crops
- Mulching & Watering Practices
- Minimize Plant Stress
- Regular Scouting!

Tips for Scouting

- Walk & Look – regularly
- Observe carefully
- Assess the threat
- Determine action

Disease Triangle

Host

Environment Pathogen

Disease Diagnostic Questions

- What part of the plant is affected?
- How much of the plant is affected?
- Where did it start (top, bottom, etc)
- How many of the plants are affected?
- Is there a pattern (either on the plant or in the garden)?
- What has the weather been the last 2 weeks? (precip, hot, cold, wind, etc)
- Has there been any soil disruptions or concerns?
- When did the problem first appear?
- Are there known pathogens from previous outbreaks?
- What types of products have been used in the vicinity? (soil amendments, insecticides, herbicides, etc.)

Disease Pathogens

- Fungi
- Bacteria
- Viruses
- Miscellaneous others: nematodes, etc

Biotic vs Abiotic

- Biotic = caused by a disease pathogen
- Abiotic = caused by something else (non-organism)

Septoria Leaf Spot

- Tiny black spots on lower leaves
- Leaves yellow and die from the bottom up
- Favored by warm, wet weather
- Caging or staking, mulching, and rotation will help prevent the disease.
- Preventative fungicides: Chlorothalonil or fixed coppers.

Early Blight

- ½" circular lesions on lower leaves
- Leaves yellow and die from the bottom upward
- Favored by wet, warm weather
- Caging or staking, mulching, and rotation will help prevent the disease.
- Preventative fungicides: Chlorothalonil or fixed coppers.

Root Knot Nematodes

Anthracnose, Alternaria, and Target Leaf Spots

- Start small and can expand to up to ½" diameter
- Dead centers of the spots can fall out, leaving a shredded appearance
- Promote dry foliage
- Fungicides: chlorothalonil, coppers

Damping Off/Root Rots

Late Blight

Scab (Potato)

- Soil-borne bacteria
- Creates corky tissue
- Cut around injury to use
- Crop rotation, manage soil pH, resistant varieties, scab-free seed potatoes

Powdery Mildew

- White fungus on leaves
- Leaves yellow and die
- Resistant varieties
- Fungicides: chlorothalonil or sulfurs

Cercospora Leaf Spot

- Common on beets, chard, and spinach

- High humidity, high temps
- Copper-based products

Bacterial Wilt

- Sudden wilting & collapse
- Affects cucumbers, melons
- Sap ooze test
- Spread by cucumber beetles

Bacterial Speck (Pseudomonas) & Spot (Xanthomonas)

- Prevalent during cool, wet weather
- Promote dry foliage, fruit
- Remove affected fruit, leaves to prevent spread
- Fruit can be eaten, but probably should be cooked
- Copper sprays can help suppress it

Viruses

- Distorted leaves
- Mottled leaves
- Distorted or discolored fruit
- Stunting or strange growth
- REMOVE infected plants
- PREVENTION is the cure

Common Viruses

- Tomato / Tobacco mosaic viruses
- Tomato Spotted Wilt Virus
- Cucumber Mosaic Virus

Soil-Borne Wilt Diseases

- Fusarium or Verticillium
    - Fungal diseases
- Live for years in the soil
- Population increases when susceptible varieties are planted.
- ROTATE!
- Choose resistant varieties
- Cover crops?

Scurf (Sw. Potato)

Environmental& Physiological

- Wind
- Hail

- Heat
- Watering

Male & Female Flowers

Blossom End Rot

- Brown-black, leathery spots on fruit bottom.
- Prevent by proper watering practices
- Some varieties are very susceptible

Yellow Shoulder Disorder – Ripening Disorders

- "Altered ripening"
- Range of symptoms for one problem
- Failure of green chloroplasts to turn red
- Changes occur early in fruit development and cannot be reversed once seen in the garden
- What is the cause? Genetics, weather, soil health

Physiological Leaf Curl

- Leaves curl when the weather changes from cool and moist to hot and dry
- The plants will be fine in a few days.

Cracking

- Tomatoes in Kansas crack due to weather
- Harvest tomatoes as soon as they start to color, then ripen indoors
- Some varieties are more crack resistant

2,4-D Herbicide Injury

- Leaves are cupped, thickened or leathery, and develop an uncharacteristic fan shape.
- Plants will overcome moderate damage.
- Poor production is likely
- 2,4-D can spread on the wind for a few miles

Over-watering

Hot Weather

- Daytime temperatures are above 85-90 degrees
- Overnight temperatures above 75 degrees
- Prevents good pollination
- Gap in fruit production

Questions?

For More Information:

Master Gardener Hotline

- sgemghotline@gmail.com - preferred
- 316-660-0190
- M-F, 9-12 and 1-4
- Walk-In Clinic (not right now, but eventually)

Extension E-Newsletter

- Text: EXTENSION to 42828

Horticulture Information Center:
http://hnr.k-state.edu/extension/info-center/

Social Media

Facebook Page: http://facebook.com/sedgwickextension
Facebook Group: https://www.facebook.com/groups/victorygarden101/
Instagram: @ksresedgwickco
The Demo Garden blog: http://thedemogarden.org

References & Resources for Additional Learning

Find Your Local Extension Office & Resources:

Kansas: https://www.ksre.k-state.edu/about/stateandareamaps.html

Other States: Do an internet search for "*your state* extension" or "*your county* extension." It is usually affiliated with the land grant university in your state.

Horticulture Information Center: https://hnr.k-state.edu/extension/info-center/

Kansas Garden Guide: https://bookstore.ksre.ksu.edu/pubs/s51.pdf (Pages 33-37)

Vegetable MD Online: http://vegetablemdonline.ppath.cornell.edu/index.html

Publications & Fact Sheets:

Bacterial Speck & Spot on Tomato: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Bacterial%20Speck%20of%20tomato.pdf

Bacterial Wilt on Cucurbits: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Bacterial%20Wilt.pdf

Blossom End Rot: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Blossom-end%20Rot.pdf

Cucumber Mosaic Virus https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Cucumber%20Mosaic%20Virus%20of%20Tomato.pdf

Herbicide Injury: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Herbicide%20Damage%20to%20Garden%20Plants.pdf

Pollination Problems: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Pollinaton%20Problems.pdf

Corky Lenticels on Potatoes: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Potato%20Corky%20Bumps%20on%20Potatoes.pdf

Green Potatoes: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Potato_Green_Tubers.pdf

Cracked Potatoes: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Potato_Growth_Cracks.pdf

Internal Darkening on Potato: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Potato%20Internal%20Darkening.pdf

Rhubarb Crown Rot: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Rhubarb%20Crown%20Rot.pdf

Tomato Anthracnose: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Anthracnose%20tomato.pdf

Tomato Bacterial Canker: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Tomato%20Bacterial%20Canker.pdf

Tomato Cracking: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Tomato%20Cracking.pdf

Tomato, Pepper, Lack of Fruit Set: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Tomato%20and%20Pepper%20Fruit%20Not%20Setting.pdf

Tomatoes, Fruit Slow to Ripen: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Tomato%20Fruit%20Slow%20To%20Ripen.pdf

Tomatoes, Hard Core: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Tomato%20Hard%20Core%20in%20Fruit.pdf

Tomatoes, Leaf Roll: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Tomato%20Leaf%20Roll.pdf

Sunscald: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Tomato%20Sunscalded%20Fruit.pdf

Powdery Mildew on Cucurbits: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Powdery%20Mildew%20on%20Cucurbits.pdf

Melon Anthracnose: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Watermelon%20Anthracnose.pdf

Tomato Leaf and Fruit Diseases and Disorders: https://bookstore.ksre.ksu.edu/pubs/L721.pdf

Wilt, Nematode & Virus Diseases of Tomato: https://bookstore.ksre.ksu.edu/pubs/L723.pdf

Walnut Wilt: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Walnut%20Wilt.pdf

Vine Crops, Lack of Fruit Set: https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Vine%20Crops%20Flowering%20But%20Not%20Setting%20Fruit.pdf

Videos:

Common Tomato Problems, Part 1: https://kansashealthyyards.org/all-videos/video/common-tomato-problems-part-1

Common Tomato Problems, Part 2: https://kansashealthyyards.org/all-videos/video/common-tomato-problems-part-2

Pesticides, When Can I Harvest: https://kansashealthyyards.org/all-videos/video/pesticides-when-can-i-harvest