

# MANAGING PLANT DISEASES

Walton County Master Gardener Meghan Pasken



UNIVERSITY OF GEORGIA  
EXTENSION



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# AGENDA



Causes of Plant Diseases

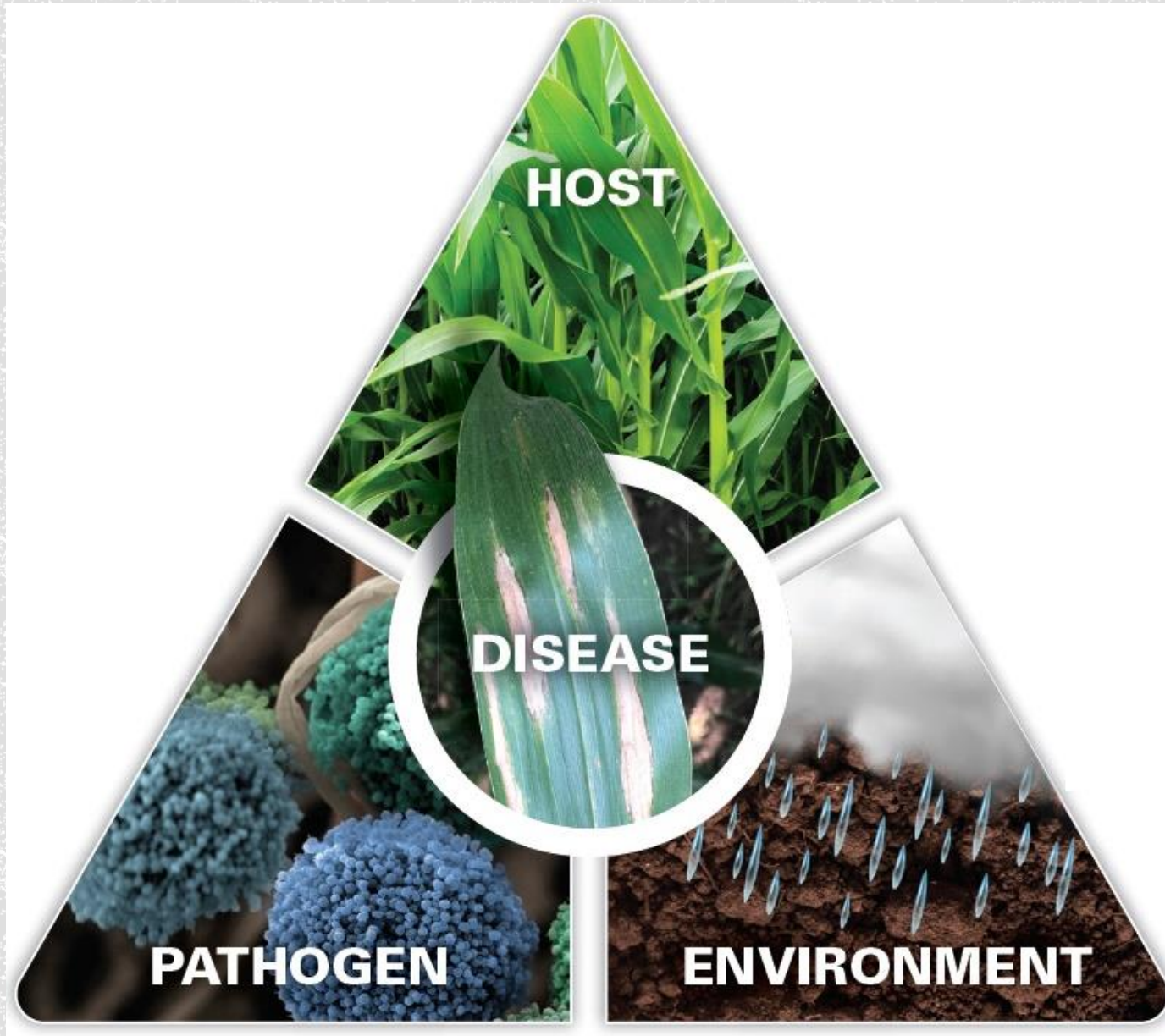
Disease Prevention

Diagnosing Diseases

Common Plant Diseases

Disease management

# CAUSES OF PLANT DISEASES



## WHAT CAUSES PLANT DISEASES?

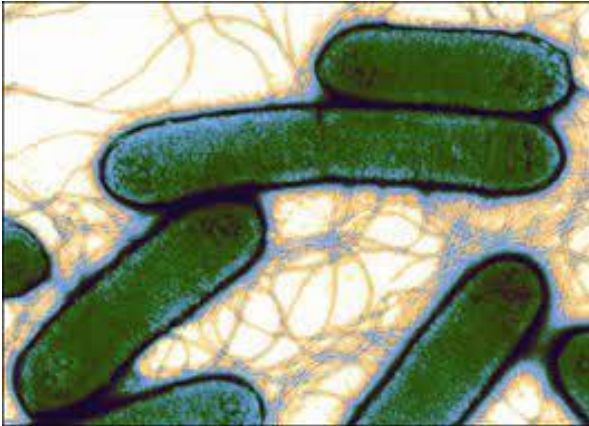
Why do diseases happen in our landscapes?

There are three important factors that must be present at the same time for a disease to occur on a plant.

- A plant (host) must be susceptible to the disease
- The disease-causing agent (pathogen) must be present and able to infect the plant
- The environment must be favorable for disease development.

# TYPES OF PLANT PATHOGENS

- Bacterial

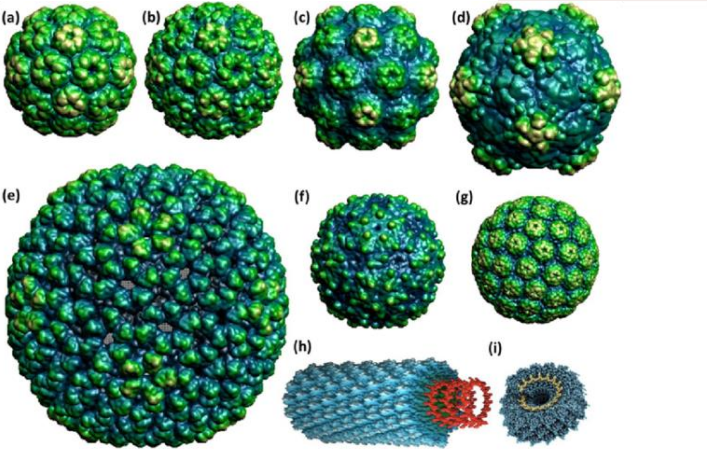


- Fungal



R. Wick, UMass

- Viral





# FUNGAL DISEASE TRANSMISSION

- Fungal plant diseases are transmitted by **spores**
- **Spores** can be carried and spread by:
  - Wind
  - Water (such as rain or irrigation)
  - Soil or dust
  - Insects
  - Birds
  - The remains of infected plants
  - Seeds from infected plants
- Plant disease spores can survive in the soil for several years
- Most foliar diseases are spread from plant to plant by windblown rain or dust.
- Plant diseases caused by fungi are most common when rain showers and/or heavy dews are frequent and temperatures are warm.
- Scout the garden regularly for disease when the weather is favorable for disease development.



# BACTERIAL INFECTION

- In order for a bacterium to produce a disease in a plant, the bacterium must first invade the plant tissue and multiply.
- Bacterial pathogens enter plants through wounds, principally produced by adverse weather conditions, humans, tools and machinery, insects, and nematodes, or through natural openings.
- Humans spread bacteria through cultivation, grafting, pruning, and transporting diseased plant material or seeds. Animals, including insects and mites, are other common transmission agents.
- Bacterial diseases are influenced greatly by temperature and moisture. Often, a difference of only a few degrees in temperature determines whether a bacterial disease will develop.
- Moisture as a water film on plant surfaces is essential for establishing an infection.
- When conditions are unfavourable for growth and multiplication, bacteria remain dormant on or inside plant tissue.
- Most foliar diseases are spread from plant to plant by windblown/splashing rain or dust.
- Plant diseases are most common when rain showers and/or heavy dews are frequent and temperatures are warm.
- Scout the garden regularly for disease when the weather is favorable for disease development.





# VIRAL DISEASES AND VECTORS

- Plant viruses are transmitted through wounds on the plant or via a **vector**.
- A **vector** is an organism that can introduce a pathogen, like a virus, into a plant to cause an infection.
- Insects are the most common vectors of plant viruses
- Aphids are responsible for transmitting 50% of these viruses. Aphids and whiteflies are the most important vectors of plant viruses, transmitting 46% of all described plant-infecting viruses.
- Other organisms that can transmit plant-infecting viruses include: Mites, Nematodes, Fungi, Plasmodiophorids.
- Once inside, viruses use the handful of genes in their tiny genomes to hijack the plant cells' machinery, while evading the plant's defenses.

# DISEASE PREVENTION



# KEEP DISEASES OUT!

Some diseases will occur naturally despite a gardener's best efforts. ☹️

**But many diseases are introduced into our landscape on infected plants from nurseries, garden centers and through the sharing of plants from garden to garden**

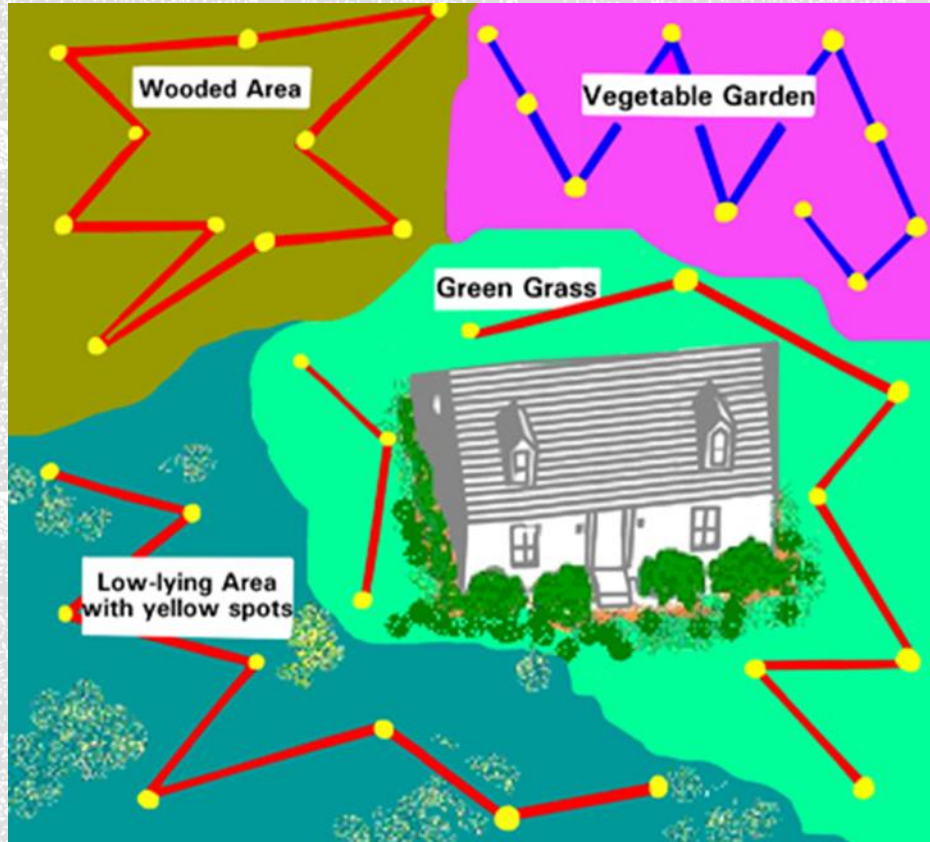
- Inspect all new plants for the presence of disease symptoms before bringing them to the landscape site
- Look for leaf spots, dark roots, whitish web-like fungal growth, orange-rusty spores, wilting, discolored stems, and lack of vigor
- **Plants infected with a disease cannot be cured**

**"AN OUNCE OF PREVENTION IS WORTH A POUND OF CURE"**



Home gardeners can greatly reduce the occurrence of many diseases by following sound cultural practices

# SITE SELECTION

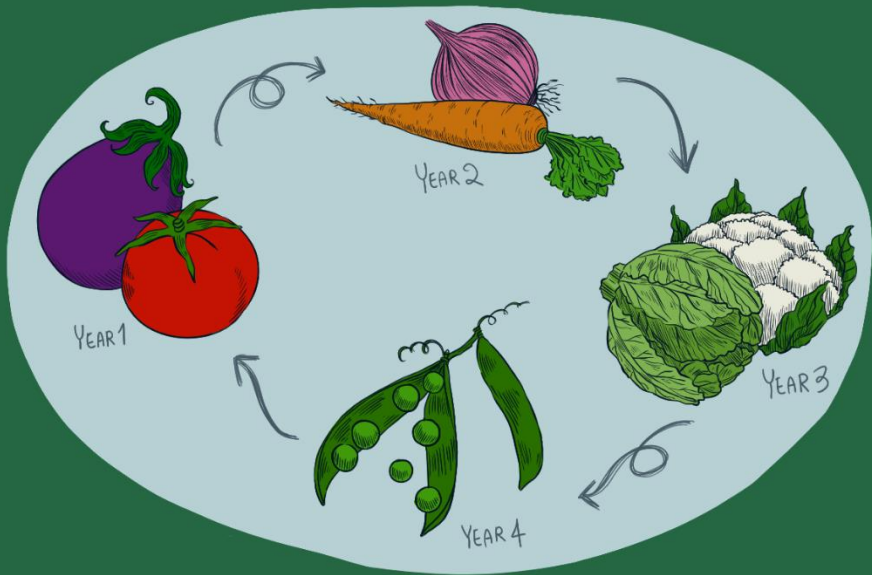


- Although few people have an ideal garden spot, site selection is important for a successful garden.
- A home garden site should be well drained...Excessive soil moisture will contribute greatly to disease, especially seedling, root and crown diseases.
- A sunny, open, well-ventilated site is important for growing healthy **vegetables**...Most vegetables need plenty of sun to thrive.
- Shade and dense vegetation around the site can encourage plant disease by creating a more **humid environment**. Full sun speeds drying of the foliage, which can reduce the incidence of most foliar diseases.
- For **landscapes**, research each plant's light and environmental requirements to determine where it will grow best...**healthy plants are less susceptible to diseases**
- Do a soil test to determine the nutrient status and physical characteristics of your landscape.

# CROP ROTATION

**Crop rotation is very important in reducing losses to vegetable diseases. Continuous plantings of the same plant family of vegetables in the same spot provide opportunities for pathogen buildup.**

- Only grow the same type of vegetable or closely-related vegetables in the same soil once **every three to five years**. This practice starves out most pathogens that cause stem and leaf diseases.
- Longer crop rotations and/or other management methods may be needed for soil-borne problems such as root and crown diseases caused by the fungi *Phytophthora*, *Rhizoctonia*, *Pythium* and *Sclerotium*, vascular wilts caused by *Ralstonia* or *Fusarium*, and root-knot nematodes. **These organisms are long-lived and affect many plant families.**



**TABLE 1 LISTS COMMON VEGETABLES BY FAMILIES OR GROUPS. ROTATE VEGETABLES WITH OTHERS OUTSIDE OF THAT GROUP TO MINIMIZE SOIL-BORNE DISEASES.**

**Table 1. Common garden vegetables and their plant families.**

<b>Alliaceae</b>	<b>Brassicaceae</b>	<b>Cucurbitaceae</b>	<b>Fabaceae</b>	<b>Solanaceae</b>
Chives Garlic Leeks Onions	Broccoli Brussels sprouts Cabbage Cauliflower Collards Lettuce Mustard Radish Rutabaga Spinach Turnip	Cantaloupe Cucumbers Honeydew melons Pumpkins Squash Watermelon	All beans English peas Southern peas	Eggplant Peppers Potatoes Tomatoes
<b>Asteraceae</b>	<b>Poaceae</b>	<b>Malvaceae</b>	<b>Chenopodiaceae</b>	<b>Apiaceae</b>
Lettuce	Corn	Okra	Spinach	Carrot



Rest.

Sus.

## **DISEASE-RESISTANT VARIETIES**

Planting resistant varieties is the most efficient way of managing troublesome diseases. Make an effort to buy resistant varieties when they are available. Seed catalogs generally list the resistant traits of vegetable varieties.



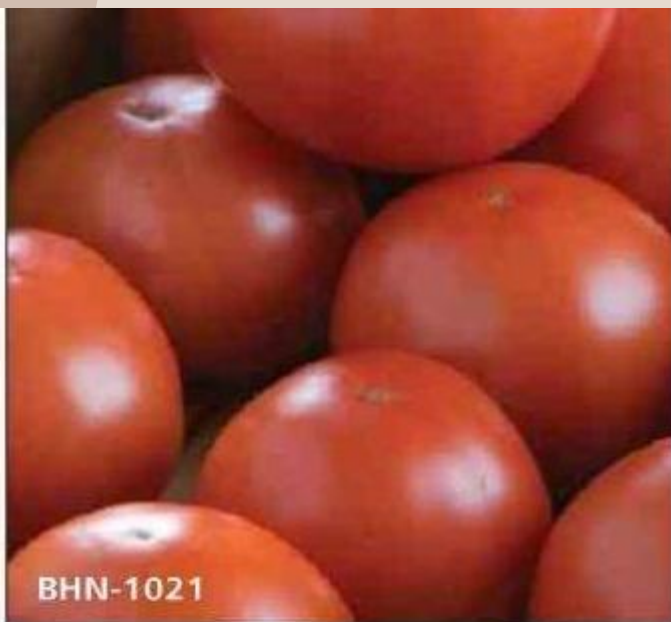
# DISEASE-RESISTANT VARIETIES



## **DEFIANT PHR (F1):**

70 days. (LB, AB, V, F2)

**Bred for both disease resistance and taste.** This mid-size slicer has high resistance to late blight and intermediate resistance to early blight combined with great taste. The 6-8 oz., globe-shaped fruit are smooth and medium-firm with good



## **3808 MOUNTAIN FRESH PLUS (F1):**

75 days. (N, F2, V)

**The most widely grown market tomato in the East and Midwest.** Able to tolerate cool and wet conditions, this big red tomato produces attractive, 8-16 oz. slicers with good taste. Developed by Dr. Randy Gardner at NCSU. Vigorous

*In the Southeast important vegetable disease resistances include:*

- **Tomatoes:** Fusarium wilt (F2, F3) and root-knot nematode (N) resistance. Some varieties may also have partial resistance to early blight (AB) and late blight (LB).
- **Squash/Cucumbers:** Powdery mildew (PM), downy mildew (DM), anthracnose (A), scab (S) and virus (WMV, ZMV, CMV, etc.).
- **Beans:** Bean mosaic virus (BMV), anthracnose (A).

# PROPER PLANT CARE AND MAINTENANCE





# PROPER SPACING AND TRELLISING

Proper spacing and trellising can reduce the occurrence of many foliar diseases, especially fungal and bacterial diseases that thrive in extended wet periods.

- Space plants properly to allow good air circulation.
- Wet conditions are prolonged if plants are crowded and unable to dry quickly.
- Tomatoes, beans and cucumbers, in particular, will benefit from some type of staking or trellising since they are all subject to troublesome foliar fungal and bacterial diseases.
- Improved air circulation will dry the foliage more quickly and reduce disease severity.
- Prevent leaves, fruit, and/or flowers from touching the ground

# PROPER WATERING

## Proper water management is important for keeping plants healthy.

- Constantly wet soils can lead to diseases such as seedling damping off, root and crown rot.
- Water on foliage can lead to fungal diseases.
- To encourage a healthy root system, water deeply (1-inch equivalent) once a week, if needed.
- Drip irrigation slowly releases water for a thorough soaking and is the most efficient means of irrigation.
- Hand watering is effective for small plantings as long as the water is directed at the base of the plant and not the foliage.



- Sprinkler irrigation is the least desirable method in terms of efficiency and water use.

If sprinkler irrigation is used, water on sunny days so foliage will dry most quickly.

Water in the late afternoon because this allows foliage to dry before nightfall.

High humidity and increased air temperature during the day can cause wilting in annuals and perennials. Pruning branches from plants can help conserve soil moisture.

Problems such as blossom end rot (a calcium deficiency) of tomatoes and

peppers.

- Don't work in the garden when plants and soil are wet. Bacterial and fungal diseases spread easily from one plant to another on hands and clothing when above-ground plant parts are wet.



# WEED CONTROL

**Weeds can be another source of diseases and insects.**

- Some weeds can serve as reservoirs for several insect-transmitted viruses that can infect homegrown vegetables.
- Weeds can also compete with vegetables for nutrients and sun.
- Good weed control will increase air movement in the garden and decrease conditions -- such as excessive moisture -- that favor disease development.



# MULCH

**Many plant pathogens survive in the soil and can spend the winter in soil debris.**

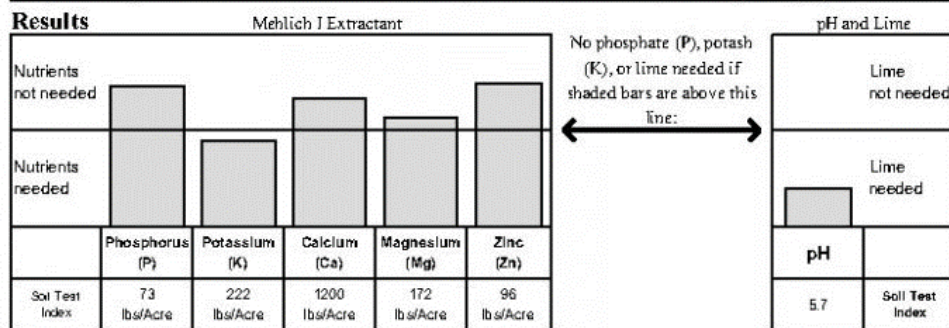
- Mulch such as straw, bark, leaves, shredded paper or plastic will help prevent both soil from splashing onto plants and fruit from touching the bare ground.
- Tomatoes in particular benefit from a mulch layer to help prevent diseases such as early blight.
- Ripening fruit such as strawberries, tomatoes, squash, cucumbers and melons will easily pick up fruit rots from bare soil.
- Mulches also help conserve soil moisture, reduce weed infestations and improve overall plant health.
- Some mulch materials, such as straw, leaves, shredded wood or bark, will also add beneficial organic matter as they decompose.

## Soil Test Report

### Sample ID

(CEC/CEA Signature)

Client Information	Lab Information	County Information
Joe Farmer Danielsville, GA  Sample: 1 Crop: Home Vegetable Garden	Lab #54085 Completed: Printed: Tests: S1	Madison County P O Box 68 Danielsville, GA 30633 phone: 706-795-2281 e-mail: <a href="mailto:uge1191@uga.edu">uge1191@uga.edu</a>



**Recommendations**    Can't find a specific grade of fertilizer? Try our Fertilizer Calculator: <http://aesl.ces.uga.edu/soilfertcalc/>

**Limestone:** 75 pounds per 1000 square feet

Recommended pH: 6.0 to 6.5

Broadcast 20 pounds of 16-4-8 per 1000 square feet, or apply 7 pounds of 16-4-8 per 100 linear feet of row.

The recommendation given above is for medium feeders, which includes crops such as beans, beets, cantaloupes, cucumbers, eggplant, okra, onions, tomatoes, english peas, peppers, radish, squash, watermelon, and sweet potatoes.

For heavy feeders such as broccoli, cabbage, greens (kale, mustard, turnip, collards), lettuce, irish potatoes, and sweet corn, increase the recommendation by 50%.

For light feeders such as southern peas, reduce the recommendation in half.

Apply 1 tablespoon of borax per 100 feet of row to broccoli and root crops such as turnips and beets. This can be applied by mixing the borax thoroughly with approximately 1 quart of soil in a container and then applying the mixture along the row; or it can be mixed with a quart of water and applied to the soil in solution.

For better fertilizer availability on sandy soils, apply half of the recommended fertilizer just before planting and the remainder when the crop is half grown. In years with unusually heavy rainfall on sandy soils, 3 pounds of 34-0-0 or 2 pounds of 46-0-0 may be added to replace nutrients lost from the soil due to heavy rains.

# PROPER FERTILIZATION AND ORGANIC MATTER

Adequate fertilization helps prevent vegetable diseases.

- Test soil three to six months before the growing season
- Follow the recommendations to supply appropriate nutrients and to adjust soil pH.
- Soil organic matter from decomposed plant materials is an important factor in plant health.
- Not only are plants better able to absorb and utilize nutrition, but the microbial diversity in organically rich soils also helps keep diseases from becoming established.
- Good quality compost is considered an ideal source of organic matter. Fresh manures can burn plants and introduce pathogens; therefore, manures should be well composted before they are added to the garden.
- Cover crops can also supply a portion of the organic matter.

# SANITATION



**Sanitation, or removal of potentially diseased plant material, will help reduce the survival of disease-causing organisms and future disease outbreaks.**

- After harvest remove the plants and plant residue.
- Uproot entire plants when possible
- Promptly remove and destroy diseased plants.
- Leaf spot outbreaks may be reduced if early-infected leaves are removed and destroyed
- Clean tools regularly
- After pruning discard all plant debris away from the landscape or garden.
- Regularly inspect plants and discard any with severe disease symptoms.
- Keep garden hoses off the ground.
- If adding soil amendments, make sure to buy from reputable dealers.
- Make sure the planting site has proper drainage and eliminate standing water.



**Healthy plants are the best prevention against plant diseases.**

**Use proper cultural practices to promote and maintain healthy plants, which do not get diseases as readily as weak plants.**





# DIAGNOSING DISEASES

**If something doesn't look right...Study the situation and rule out other abiotic causes of plant damage**

- Know what a healthy or normal plant should look like
- Is there a pattern of leaf discoloration or wilting?
- Part of plant affected?
- Chemicals used on or nearby garden?
- Known toxicity or sensitivity to commonly used products?
- Fertilizer applied?
- Fertility & pH of soil?
- Insects or mites present?

**Figure 2.** *Three diseases*



**Early blight:**  
*Concentric rings  
with yellow halo.*



**Late blight:** *Brown  
purplish blighted areas.*



**Septoria leaf spot:**  
*Spots with gray or  
tan centers and  
dark brown margins.*

*(Photo credits: A – Stacey Huffman; B & C – MM Rahman)*

## FUNGAL LEAF SPOTS AND BLIGHTS

- Spots usually round
- Dead areas – brown, black, tan, red
- Lesions may have red or purple border
- May have whitish/greyish fungal growth on the surfaces of leaves, stems, flowers or fruit
- May defoliate plant

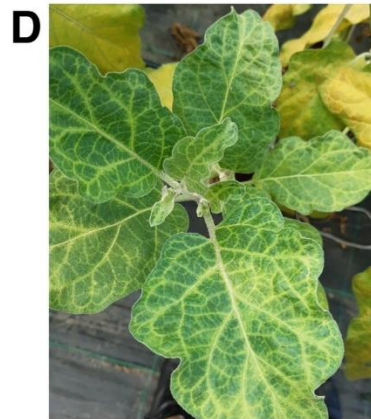
# BACTERIAL LEAF SPOTS AND BLIGHTS

- Angular leaf spots
- Water soaked/greasy looking lesions
- Yellow or translucent halos around leaf spots
- Centers of dry lesions fall out (shot hole appearance)
- Discoloration of stems
- Fruit lesions



# VIRUSES

- Dwarfed leaves
- Yellowing or reddening of leaves
- Green or sterile flowers
- Very short internodes
- Vected by insects
- Symptoms often expressed on new growth





Rhizoctonia root and stem rot



## ROOT ROTS, SOFT ROT, AND CROWN ROT

- Stem Rot at or just below soil line
- Pinching of stem just above soil
- Vascular staining
- Wilting
- Yellow leaves
- Brown or black roots that appear weak
- White fungal growth
- Stunting/decline
- Damping off
- Sudden death of mature plant



# COMMON PLANT DISEASES



**POWDERY MILDEW**

Vegetables and  
Ornamentals



**BLACK SPOT**

On roses



**CERCOSPORA LEAF SPOT**

On Hydrangea



**EARLY BLIGHT**

Solanaceous Plants



# Georgia Pest Management HANDBOOK

*Home & Garden Edition*

## DISEASE MANAGEMENT

- Use cultural and biological control alternatives (as mentioned) before using chemical control.
- Use chemical control sparingly and efficiently by applying the **proper, labeled rate at the labeled interval** when disease symptoms are first visible.
- Fungicides only control diseases caused by fungi. (They will not control diseases caused by viruses and they have limited control effects on bacterial diseases)
- Avoid the repeated use of a single fungicide or the same combination of materials. (Using materials with different modes of action minimizes the potential for development of disease resistance.)



ACTIVE INGREDIENT BRAND NAME	DISEASES CONTROLLED	COMMENTS
<p><i>mancozeb</i> Bonide Mancozeb Flowable with Zinc Southern Ag Dithane M-45</p>	<p>Many vegetable diseases, including anthracnose, fungal leaf spots, downy mildew, early blight, gummy stem blight, late blight, scab, rust, and smut.</p> <p>Many ornamental diseases including anthracnose, black spot, Botrytis, cedar-apple rust, downy mildew, fungal leaf spots, and other rusts.</p> <p>A few brands are labeled for common fungal lawn diseases.</p>	<p>Broad spectrum protectant fungicide. This is a contact fungicide.</p> <p>When applied to plants not on the label, the product should be tested on a small area of the plant or small area of the planting first.</p> <p>Most small container products are not labeled for use on home fruit trees.</p> <p>Be sure to observe harvest intervals on label when applied to vegetables.</p>
<p><i>myclobutamil</i> Spectracide Immunox (several) Ferti-Lome F-Stop Granular Fungicide Monterey Fungi-Max Green Light Fung-Away Systemic Lawn Fungicide</p>	<p>Good for powdery mildew, black spot of rose, fungal leaf spots, rusts, anthracnose and other diseases of flowers, ornamental shrubs, and trees.</p> <p>Controls brown patch, dollar spot, melting out, rust, large patch, fusarium blight, and anthracnose on lawns.</p> <p>Also controls powdery mildew, scab, and rust on apples; brown rot and other diseases on stone fruits; and anthracnose, black rot and powdery mildew on grapes.</p>	<p>Systemic fungicide.</p> <p>Provides better powdery mildew control than most other fungicides.</p> <p>Overdosage to ornamentals can result in foliar greening, shortened internodes and/or thickened leaves.</p> <p>For use on turf, proper identification of the causal disease organism is key. Contact local county agents for more information.</p> <p>Only a few of the available formulations are labeled for vegetable crops.</p> <p>Avoid exclusive use of this product for resistance</p>

HOME ORNAMENTAL AND TREE DISEASE CONTROL GENERAL FUNGICIDE GUIDELINES

DISEASE	ACTIVE INGREDIENT BRAND NAME	CONTACT OR SYSTEMIC
<b>FUNGAL</b>		
Botrytis blight	<i>chlorothalonil</i> Daconil Ortho Garden Disease Control Hi-Yield Vegetable, Flower, Fruit, & Ornamental Fungicide Ferti-Lome Landscape & Garden Fungicide Bonide Fung-onil Gardentech Daconil	Contact
Rhizoctonia root/stem rot Sclerotinia root rot Southern Blight	<i>PCNB</i> Terraclor (several manufacturers)	Contact
	<i>tebuconazole</i> BioAdvanced Disease Control Ferti-Lome 2-N-1 Systemic	Systemic
Diplodia tip blight Kabatina dieback Phomopsis dieback Phomopsis needle blight Sclerotinia stem rot Tip blight	<i>propiconazole</i> Bonide Infuse Ferti-Lome Liquid Systemic II	Systemic
Powdery mildew	<i>chlorothalonil</i> Daconil Ferti-Lome Broad Spectrum Liquid Fungicide Ortho Garden Disease Control Hi-Yield Vegetable, Flower, Fruit, & Ornamental Fungicide Ferti-Lome Landscape & Garden Fungicide Bonide Fung-onil Gardentech Daconil	Contact
	<i>difenoconazole</i> Bonide Rose Shield	Systemic
	<i>myclobutamil</i> Spectracide Immunox Multi-purpose Fungicide Monterey Fungi-Max Ferti-Lome F-Stop	Systemic
	<i>Neem oil</i> Green Light Powdery Mildew RTU Ferti-Lome Triple Action RTU	Contact
	<i>potassium bicarbonate</i> soluble powder Monterey Bi-Carb Old Fashioned Fungicide	Contact
	<i>propiconazole</i> Bonide Infuse Ferti-Lome Liquid Systemic II	Systemic
	<i>sulfur</i> Safer Garden Fungicide Monterey Sulfur 90W Bonide Sulfur Plant Fungicide Hi-Yield Wettable Dusting Sulfur Sulfur	Contact

HOME VEGETABLE DISEASE CONTROL

COMMODITY DISEASE	ACTIVE INGREDIENT BRAND NAME	PHI (DAYS)	METHOD, SCHEDULE REMARKS
<b>SQUASH</b>			
Anthracnose, Downy Mildew, Cercospora	<i>chlorothalonil</i> Ortho Garden Disease Control	0	Downy mildew arrives in Georgia in later June or July. These are mainly disease problems in wet years. Apply when disease threatens and every 7-10 days as needed.
	<i>copper sulfate</i> Dupont Copper Kocide 3000	0	
	<i>mancozeb</i> Bonide Mancozeb Flowable	5	
	<i>copper</i> Bonide Liquid Copper	0	
Powdery Mildew	<i>chlorothalonil</i> Ortho Garden Disease Control	0	See label.
	<i>sulfur</i> Safer Garden Fungicide		
	<i>copper sulfate</i> Dupont Copper Kocide 3000	0	
	<i>copper</i> Bonide Liquid Copper Fungicide	Until day of harvest	
Viruses	No chemical control available.		Plant earlier in the season to avoid high insect populations. Row covers provide early-season protection. Select resistant varieties.
<b>TOMATO</b>			
Anthracnose, Early Blight, Gray Leaf Spot, Late Blight, and Septoria Leaf Spot	<i>chlorothalonil</i> Ortho Garden Disease Control	0	See label. Late blight is a rare problem in Georgia. Early blight (Alternaria) and Septoria leaf spot diseases can defoliate susceptible cultivars in a wet year. Start treatment when first spots appear on lower foliage and continue treating during wet and humid periods. Use cultivars with resistance.
	<i>copper</i> Bonide Copper Spray, or Liquid Copper		
	<i>mancozeb</i> Bonide Mancozeb Flowable		
Bacterial Speck (Pseudomonas) and Leaf Spot (Xanthomonas)	<i>copper sulfate</i> Dupont Copper Kocide 3000	0	May cause some defoliation in a wet year. Usually not a problem in home gardens.
	<i>copper</i> Bonide Copper Spray, or Liquid Copper	0	
<b>TURNIPS</b>			
Cercospora, Cercospora, Anthracnose, and Powdery Mildew	<i>copper</i> Bonide Copper Spray, or Liquid Copper	0	Do not make more than 3 applications per growing season.
	<i>sulfur</i> Sulfur	0	
<b>TURNIPS, MUSTARD &amp; COLLARDS</b>			
Alternaria Leafspot and Downy Mildew	<i>Copper</i> Bonide Copper Spray, or Liquid Copper	0	
	<i>Sulfur</i>	0	
Powdery Mildew	Wettable Sulfur 95%	0	Begin at first sign of disease. Apply every 7-10 days.

Proper management is of utmost importance in preventing turf disease. Culture and environment are the key reasons diseases develop since potential turf pathogens are virtually always present. Disease problems are encouraged by improper watering, soil compaction, drainage problems, improper fertilization, nutrient deficiencies, excessive thatch, and improper mowing. Effective disease management centers on avoiding these problems through prevention of plant stress. In most cases, pres-

ence of a disease indicates an underlying cultural and/or environmental problem that needs to be addressed. Fungicides are not always necessary and when used should be part of a total management program. Obtain a disease diagnosis and recommendation from your Extension office before applying chemicals. Follow label recommendations for rates and safety precautions when using all pesticides.

### **BROWN/LARGE PATCH (*Rhizoctonia solani*) DOLLAR SPOT (*Sclerotinia homeocarpa*)**

#### Management Tips:

- Use low to moderate amounts of nitrogen, moderate amounts of phosphorous and moderate to high amounts of potash.
- Avoid nitrogen applications when the disease is active. Apply nitrogen to warm season grasses only between May and August.
- Increase the height of cut.
- Increase air circulation.
- Minimize the amount of shade.
- Irrigate turf early in the day. Water deeply but infrequently based on soil moisture levels.
- Reduce compaction and improve the drainage of the turf with core aeration as needed.
- Reduce thatch.
- Remove dew from the turf early in the day (drag a hose over the turf).
- Warm season grasses—Fall preventative applications are BEST/MOST EFFECTIVE (Sept.–Oct.), with a follow-up spring application.

ACTIVE INGREDIENT	BRAND NAMES	REMARKS AND PRECAUTIONS
<i>azoxystrobin</i>	DiseaseEx	Preventative 2 lbs per 1000 sq ft Curative 4 lbs per sq ft
<i>propiconazole</i>	Banner Maxx Bioadvanced Advanced	Local systemic; provides some control, best used in rotation or tank mixed with other chemistries.
<i>myclobutamil</i>	Immunox Lawn Disease Control—RTU, Concentrate, and Granules Ferti-Lome F-Stop	Apply every 14–28 days as needed. Rotate with other chemicals to avoid resistance problems.
PCNB	Terraclor 75WP, Hi-Yield Terraclor Granular Fungicide Hi-Yield PCNB Granular Fungicide	Treated areas should be watered following application to move material to soil. Caution on cool season turfs for phytotoxicity. Re-treat in 3–4 weeks if disease reappears.
<i>thiophanate methyl</i>	Cleary's 3336 Scotts Lawn Fungus Control	Apply every 7–14 days as needed.



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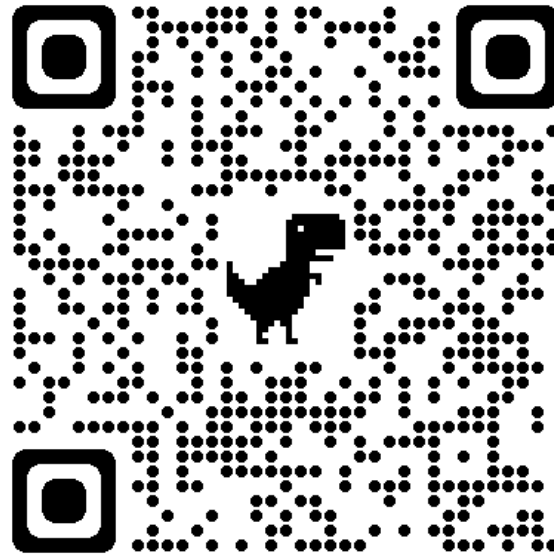
# THANK YOU



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EXTENSION



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# Questions?

Contact us at  
[waltonmg@uga.edu](mailto:waltonmg@uga.edu)  
770-267-1324

Walton County Extension  
1258 Criswell Rd SE  
Monroe, GA 30655

M-F – 8 AM to Noon/1PM to 5 PM

Help Desk Hours – Tuesday 1 to 4 PM

Visit our booth at Monroe Market for help  
with gardening questions.

Don't forget to fill out the evaluation and let us know what  
classes you would like to see next year!





Walton County Master Gardeners invite you to  
**Free Spring 2024 Garden Talks**

**Mondays 2:00–3:00 p.m.**

**O’Kelly Memorial Library**

**363 Conyers Road, Loganville GA**

**Feb 26: Growing Inside the Box—  
Raised Bed Basics**

**Mar 4: Managing Plant Disease**

**Mar 11: Spring/Summer Veggies**

**Mar 18: Totally Tomatoes**

**Mar 25: Plant Choice Matters—  
Gardening with Native  
Plants**



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**Free Spring 2024 Garden Talks**

**Tuesdays 4:00–5:00 p.m.**

**W.H. Stanton Memorial Library  
407 W. Hightower Trail, Social Circle GA**

**Feb 27: Growing Inside the Box—  
Raised Bed Basics**

**Mar 5: Managing Plant Disease**

**Mar 12: Spring/Summer Veggies**

**Mar 19: Totally Tomatoes**

**Mar 26: Plant Choice Matters—  
Gardening with Native  
Plants**



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Walton County Master Gardeners invite you to  
**Free Spring 2024 Garden Talks**

Wednesdays 2:00–3:00 p.m.

UGA Extension Office

1258 Criswell Rd SE, Monroe GA

**Feb 28: Growing Inside the Box—  
Raised Bed Basics**

**Mar 6: Managing Plant Disease**

**Mar 13: Spring/Summer Veggies**

**Mar 20: Totally Tomatoes**

**Mar 27: Plant Choice Matters—  
Gardening with Native  
Plants**



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# Support WC Master Gardeners Soil3 Fundraiser

Get \$30 off on ALL 3 Big Yellow  
Bags now thru Feb 29  
LOCAL DELIVERY INCLUDED

Receive an extra \$5  
off with our  
fundraising code  
*WaltonMG2024*



[Read our blog on Soil3](#)





*Master Gardener  
Fundraiser*

# Plant Sale

Walton County  
Extension Campus  
1258 Criswell Road  
Monroe, GA  
April 20, 10-2



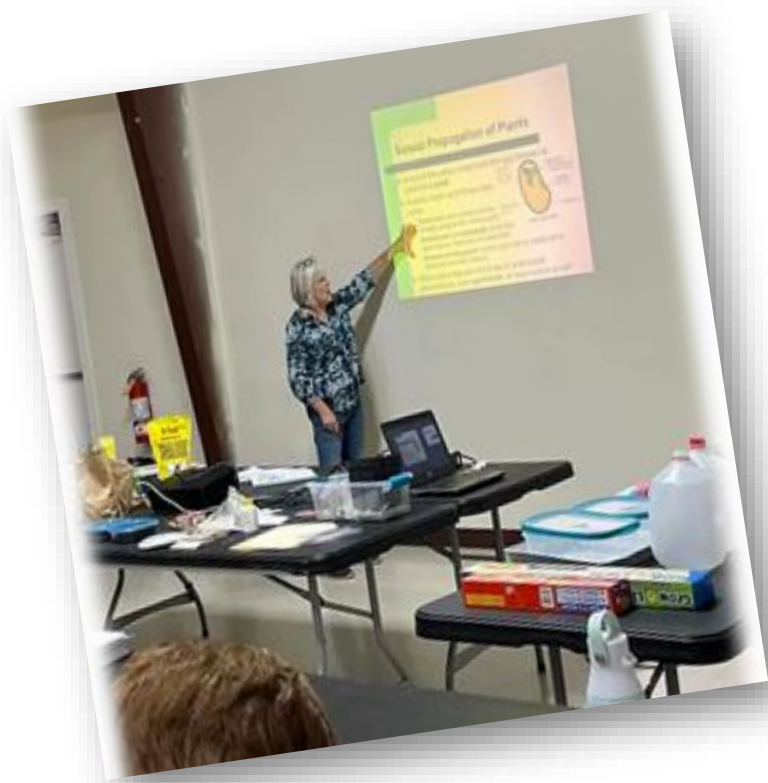
UNIVERSITY OF GEORGIA  
**EXTENSION**  
Master Gardener Program



**Rain or Shine**



# Interested in being a Master Gardener?



Go to our website at [www.waltonmastergardeners.com](http://www.waltonmastergardeners.com)  
and click on *Become a Master Gardener* to learn more!



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*Thanks for coming today!*