Backyard Tomato Diseases

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Plant Disease

- Any disturbance of a plant that interferes with its normal growth and development
- Biotic diseases are caused by living agents

- Fungi
- Bacteria
- Viruses
- Plant-parasitic nematodes

Tomato Diseases in Alabama

- Early blight
- Late blight
- Fusarium wilt
- Bacterial spot
- Tomato spotted wilt virus (TSWV)
- Root-knot nematode

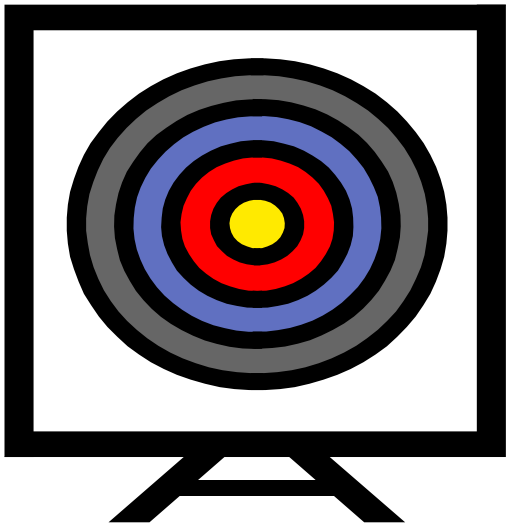
Early Blight

Early Blight

- Caused by the fungus Alternaria solani
- Survives on plant debris
- Begins on older leaves as irregular spots that enlarge to ½ inch in diameter
- Develop concentric rings and a yellow halo
- Plants appear to “fire-up” from their base
- Warm, wet weather favor its development

EARLY BLIGHT

EARLY BLIGHT



Early Blight

- Reduce fruit size
- Reduce fruit quality
- Increase in sunscald
- 50% yield reduction

Late Blight

Late Blight

- Caused by the fungus Phytophthora infestans
- Very destructive, but uncommon
- Favored by day temperatures in the 70’s and night temperatures in the 50-60’s
- Favored by wet weather/overhead irrigation
- Summer heat reduces the problem

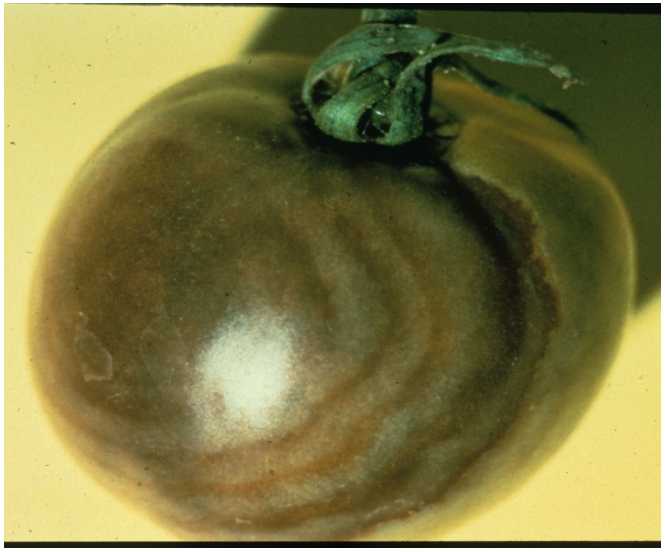
Mountain Merit

- Resistant to Early Blight, Late Blight and Tomato Spotted Wilt Virus
- 2010 Release from North Carolina State

Late Blight and Buckeye Rot

Late Blight and Buckeye rot

Late Blight



Buckeye rot

Foliar Disease Management

- Remove tomato residue after harvest
- Plant disease-free transplants
- Keep tomato plants healthy and vigorous following a good fertility program
- Scout garden twice-a-week
- Follow a fungicide spray program when environmental conditions favor disease

TOMATO WITH AND WITHOUT A FUNGICIDE SPRAY PROGRAM

Fungicide Program for Tomato

- Begin applications 5-10 after transplanting
- Apply fungicides every 7-10 days
- Tank-mixing a fungicide with a copper-product will help control bacterial spot
- Always read the manufacturer’s label directions
- Active ingredients should consist of either Chlorothalonil, maneb or mancozeb
- 5- day Preharvest interval w/t Maneb/Mancozeb

Chlorothalonil Products and Manufacturer's

- Daconil 2787 (Dragon, Ortho, Hi-Yield)
- Fertilome Liquid Fungicide (Fertilome)
- Fungi-gard (Security)
- Ortho Multi-purpose Fungicide (Ortho)
- Vegetable Disease Control (Ortho)
- Multi-purpose Fungicide (Green Care)
- Multi-purpose Fungicide (ProCare)
- Lawn and Garden Spray (Rigo's)

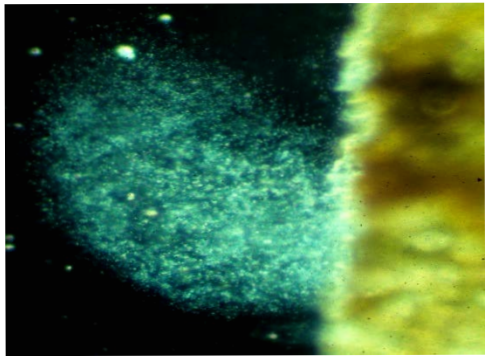
Maneb and Mancozeb Products

- Bonide Manzate flowable (Bonide)
- Acme Maneb Tomato Fungicide (Acme)
- Earl May Tomato Blight Control (Earl May)
- Maneb Lawn & Garden Fung. (Hi-Yield)
- Mancozeb Disease Control (Dragon)
- Green Light Maneb Plus (Green Light)
- Lawn & Veg. Disease Control (Dragon)

Bacterial Spot

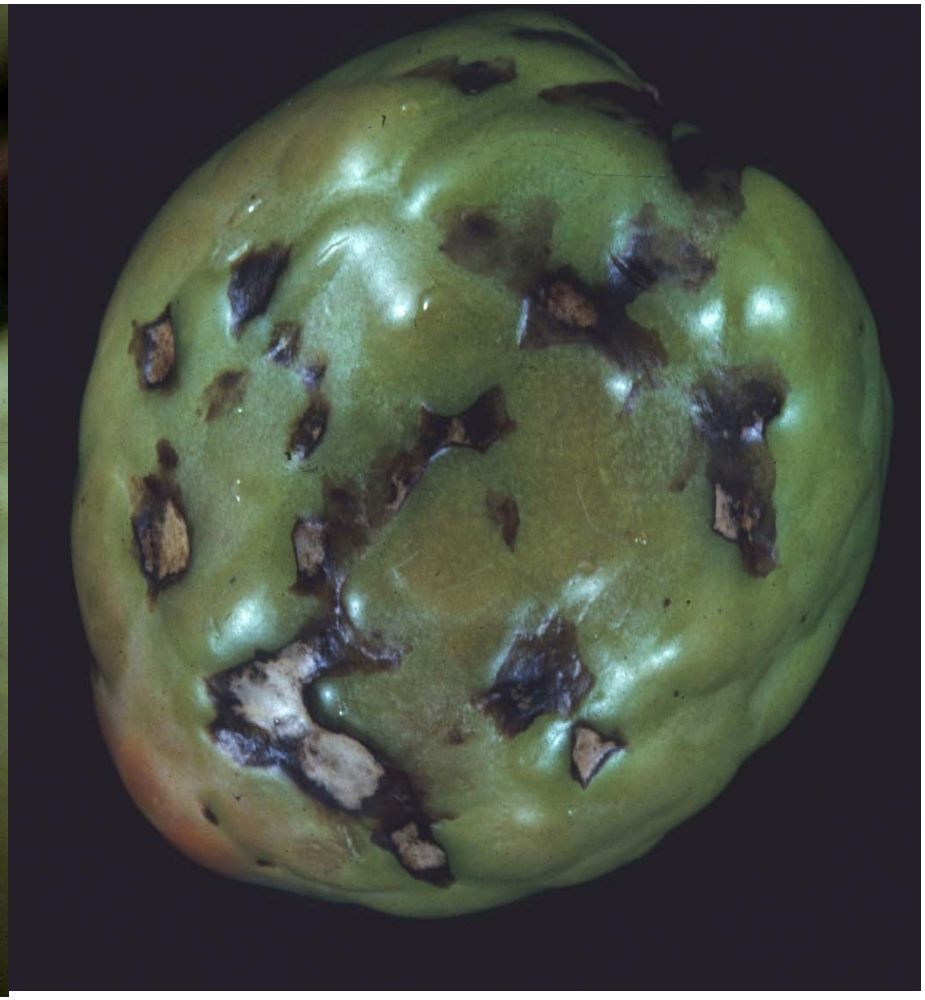
- Introduced on transplants
- Attack leaves and fruit
- Favored by warm, wet conditions
- Leaf spots can be irregular and ragged
- Fruit spots can be raised or scabby

Bacterial Spot



Bacterial ooze

Bacterial Spot



Bacterial Spot Control

- Use disease free transplants
- Avoid overhead irrigation
- If bacterial spot develops, apply a copper-based fungicide with maneb or mancozeb

Copper Products

- Acme Copper Fungicide (Acme)
- Bonide Liquid Copper Fungicide (Bonide)
- Copper Fungicide (Dragon)
- Hi-Yield Copper Fungicide (Hi-Yield)
- Kocide 2000, 101, DF (Griffin)
- Ortho Copper Fungicide (Ortho)

Fusarium Wilt

- Soil borne fungus that invades the roots
- Plugs-up the water conducting vessels
- Causes yellowing and wilting of leaves
- Whole plant eventually wilts/dies

FUSARIUM WILT

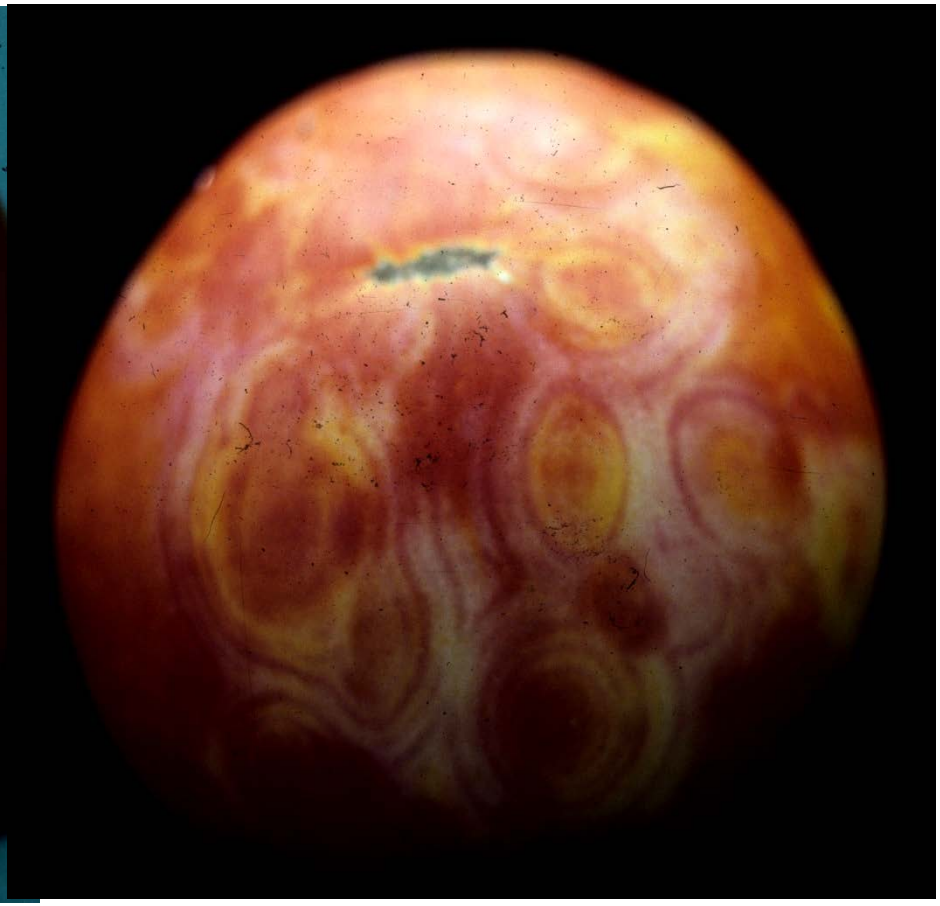
Fusarium Wilt Control

- Plant Fusarium wilt resistant varieties
- Plant in well drained soils
- Infested soil can be solarized to reduce disease inoculum
- Plant tomatoes in infested area in garden only every fourth year (crop rotation)

Tomato Spotted Wilt Virus

- Virus disease spread by thrips
- Infected plants are stunted, may die
- Terminal leaves stop growing, become distorted and turn pale green
- Leaves have a purple/bronze appearance
- Ring spots form on leaves; dark streaks develop on petioles and stems
- Fruit exhibit “real cool-looking” ringspots

Tomato Spotted Wilt Virus



TSWV Control

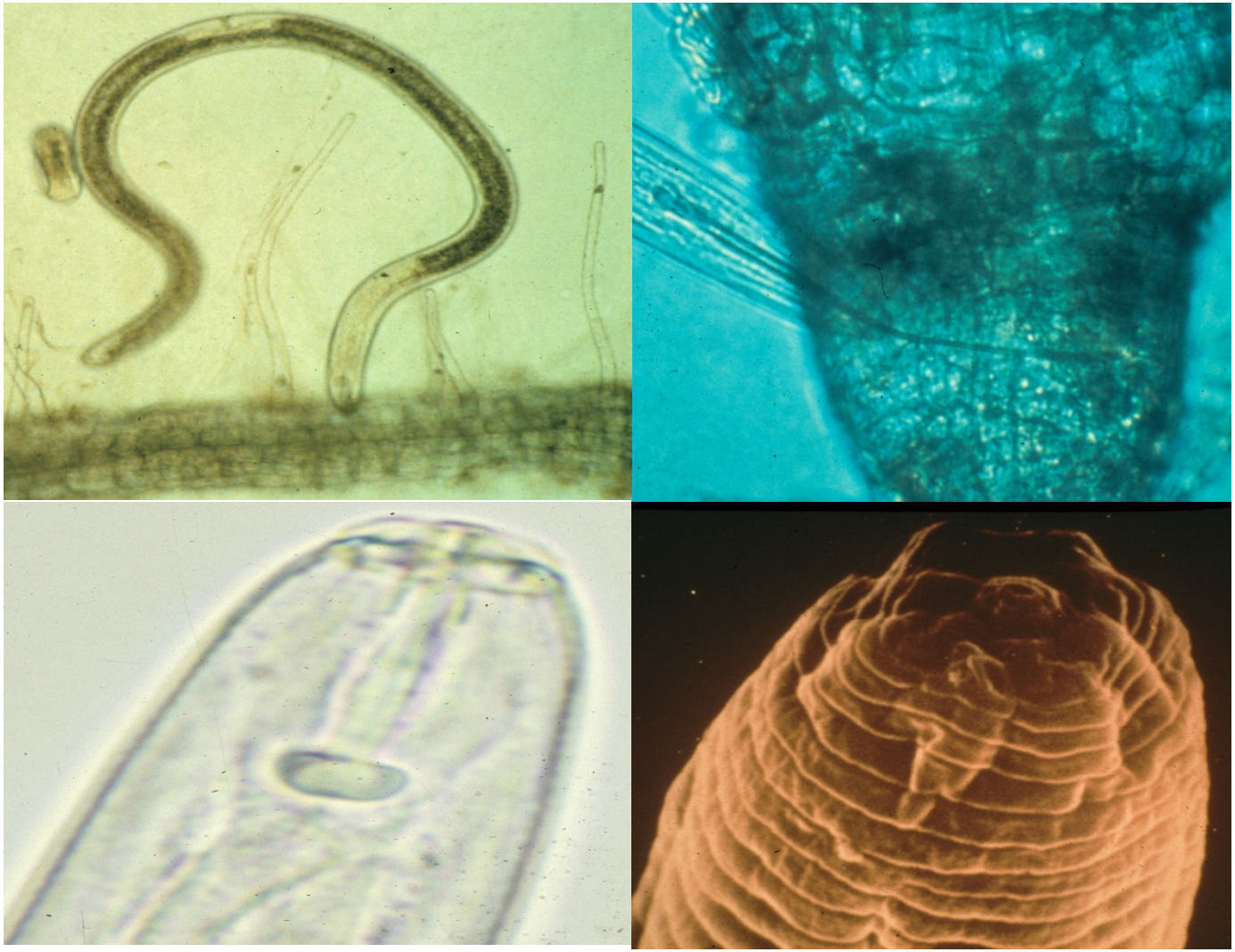
- Plant TSWV resistant varieties
- Amelia, Crista, Talladega
- BHN 640, Bella Rosa

- Eliminate volunteer weeds
- Insecticides may reduce thrips numbers but will not likely reduce TSWV incidence


Amelia VR (TSWV resistant)


BHN 640 (TSWV resistant)

Plant-Parasitic Nematodes



Plant Parasitic Nematodes

- Microscopic wormlike animals
- Less than 1 mm in length
- Most plant parasitic nematodes live in soil
- Damage plants by feeding on roots in large numbers, impairing roots ability to take up water and nutrients
- Can’t see the nematodes with the naked eye, only the resulting symptoms

Symptoms

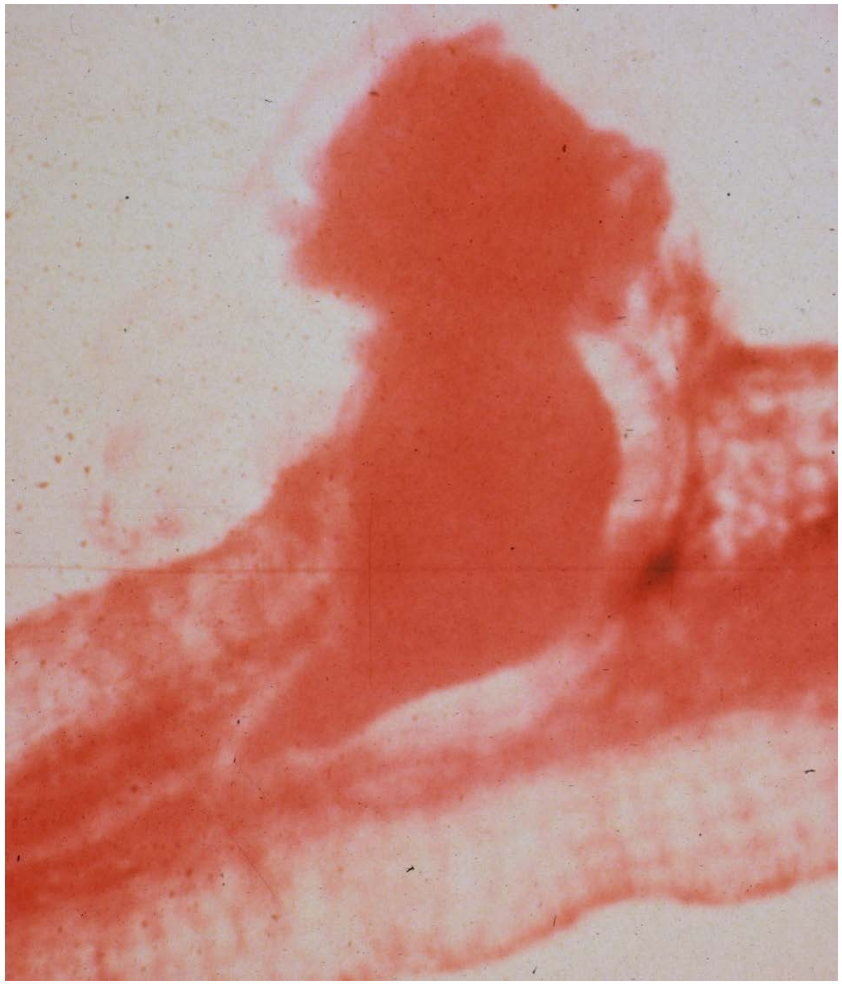
- Stunting
- Leaf yellowing
- Loss of plant vigor and/or overall health
- Reduced yields
- Wilting (when soil is wet)
- Non-uniform distribution of symptomatic plants in garden
- Symptoms more pronounced when plant under stress from other factors


Root-knot nematode

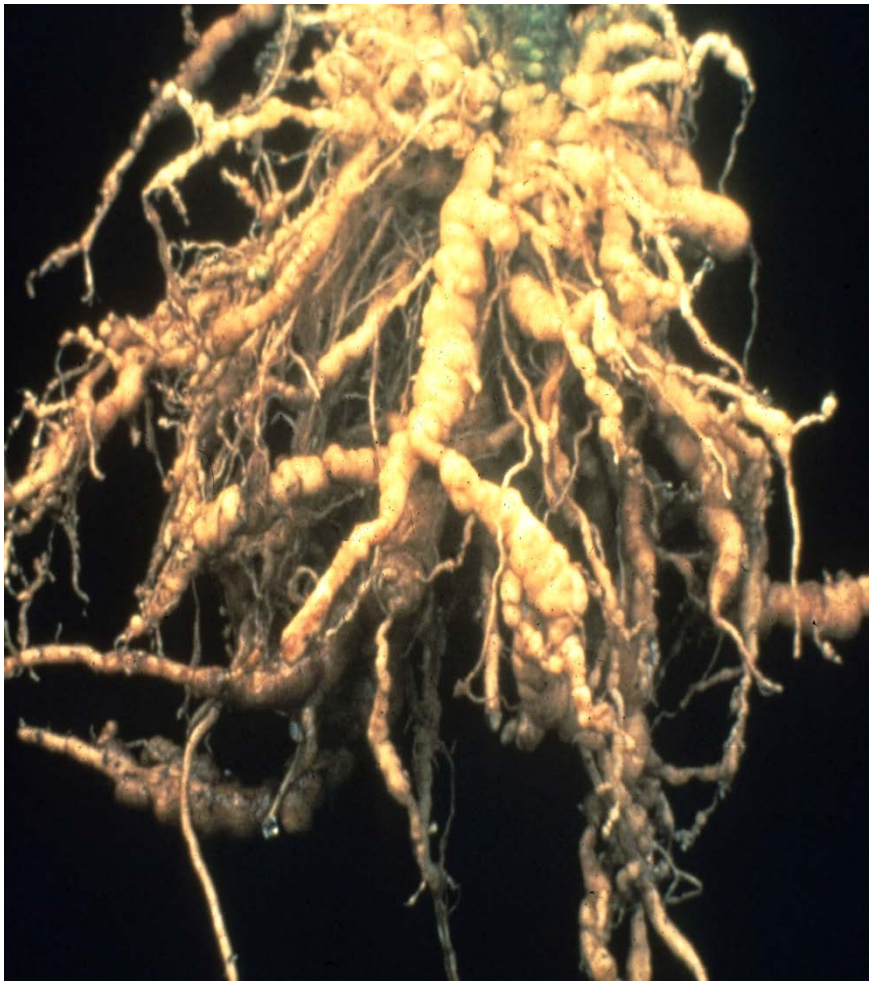
Root-Knot Nematode

- Most common nematode pest of tomato
- Wide host range; over 2,000 plants
- Sedentary endoparasite
- Causes distinct swellings or galls on roots
- Galls range from pea sized to 1 inch in diameter
- Management requires long term planning

Adult RKN in roots



RKN galls on tomato root



Root-Knot Nematode Management

- Site selection and nematode inspection
- Sanitation
- Crop rotation
- Resistant varieties
- Reduce plant stress
- Add organic amendments
- Suppressive crops
- Soil solarization


THANK YOU
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