

Tomato Insects

Home Gardens & Commercial Plantings

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Sand Mountain Region

Thrips

- Vector Tomato Spotted Wilt Virus



Thrips

Rasping mouth parts

Found in flowers

1/8 inch in length, black to light brown in color.

No visible damage usually until TSWV is noticed in individual plants. More of a problem in South Alabama than North Alabama but an increasing problem state wide.

One of the first pests of the season

Thrips

- CONTROL MEASURES
- Home Garden – Plant resistant varieties like BHN 444, BHN 640, Amelia (others on the way), insecticidal soaps & oils, neem extract, Garlic Barrier
- Commercial – dimethoate 4EC, spinosad (Spintor), methomyl (Lannate), methamidophos (Monitor), gamma-cyhalothrin (Proaxis), resistant varieties, soaps, barriers & oils

Aphids

Vector disease like CMV



Aphids

- Piercing, sucking mouthparts
- Usually found on underside of leaf
- Winged or non-winged forms
- Females bear live young (parthenogenesis)
- Cornicles present on most aphids (tube like structures on back end of insect, helps I.D.)
- Most aphids less than 1/8 in. long,
- Color varies in species
- Look for skin cast
- Produce honeydew

Aphids

- Winged form



Aphids

- CONTROL MEASURES
- Home Garden – wash with strong spray of water, insecticidal soaps, neem or insecticidal oils, malathion, dimethoate (Cygon), Garlic Barrier
- Commercial – imidacloprid (Admire, Provado), diazinon, dimethoate, acetamiprid (Assail), methamidophos (Monitor), pymetrozine (Fulfill), thiomethoxam (Platinum) at planting

Tomato Hornworm, Fruitworm, Cabbage looper

- Hornworm



Tomato Fruitworm



Cabbage Looper



Hornworm, Fruitworm, Looper

- Larvae stage of various moths, target adults as well as larvae. These are not usually serious pest and are fairly easy to control when larvae are small.
- Chewing mouthparts, look for frass and holes in leaves.
- Various colors of fruitworm (corn earworm, cotton bollworm) colors steady on loopers and hornworms (green), hornworms can be very large > 3 in., earworms about 1 in., loopers about 1/2 in.

Hornworms, Fruitworms, Loopers

- CONTROL MEASURES
- Home Garden – Bacillus thuringiensis (Dipel), Carbaryl (Sevin), endosulfan (Thiodan), Garlic Barrier, handpick, insecticidal soaps and oils. Remember, small worms are easier to control than large worms.
- Commercial – Bacillus thuringiensis (Dipel, Crymax), bifenthrin (Capture), cyfluthrin (Baythroid), endosulfan (Thiodan, Phaser), esfenvalerate (Asana XL), emamectin benzoate (Proclaim), fenpropathrin (Danitol), gamma-cyhalothrin (Proaxis), indoxacarb (Avaunt), lambda-cyhalothrin (Warrior), methomyl (Lannate), methoxyfenozide (Intrepid), spinosad (SpinTor), zeta-cypermethrin (Mustang MAX)

Blister Beetle, Colorado Potato Beetle

- Striped Blister Beetle



Blister Beetle, Colorado Potato Beetle

- Colorado Potato Beetle



Blister Beetles, Colorado Potato Beetle

- Chewing mouth parts
- Colorado Potato Beetle is resistant to carbaryl (sevin)
- CPB, more of a problem where Irish potatoes are grown or have been grown
- Target larvae early before they reach adult size
- Blister beetles not much of a problem

Blister Beetles, Colorado Potato Beetles

- CONTROL MEASURES
- Home Garden – Carbaryl (Sevin) for Blister beetle only, endosulfan (Thiodan), malathion, pyrethrin, handpick CPB, insecticidal soap, neem, pyrethrins, rotation if possible, BT products.
- Commercial – rotation, endosulfan (Thiodan), esfenvalerate (Asana XL), gamma-cyhalothrin (Proaxis), imidacloprid (Admire, Provado), spinosad (SpinTor), thiomethoxam (Platinum) at planting as an in furrow or drench material

Armyworms

- Fall Armyworm



Armyworms

- Beet Armyworm



Armyworms

- Chewing mouthparts
- Usually dry weather problem
- Control when worms are small ***
- Beet armyworm harder to control than Fall armyworm
- Beet armyworm eggs laid in fuzzy white mass, look for the egg masses
- Scout for these in dry weather, don't let them get ahead of you, adult armyworms difficult to control, especially Beet armyworm

Armyworms

- CONTROL MEASURES
- Home Garden – These pest more likely to show up and be a problem in commercial plantings, BT products (Dipel, Crymax, Xentan), Carbaryl (Sevin)
- Commercial – BT products (Dipel, Crymax, Xentan), emamectin benzoate (Proclaim), gamma-cyhalothrin (Proaxis), indoxacarb (Avaunt), methoxyfenozide (Intrepid), spinosad (SpinTor)

Spider Mites

- Twospotted spider mite



Spider mites

- Twospotted and Red Spider mites are small, need hand magnifier to see, especially twospotted spider mite, brush on to white paper for a better look.
- Piercing, sucking mouthparts
- Create small webbing in leaf area, hard to see
- Plants may look stippled, faded color or bleached to some extent.
- Difficult to control
- Pyrethrins or use of some other chemicals may flare mites

Spider Mites

- CONTROL MEASURES
- Home Garden – insecticidal soaps & oils, hose down with water if possible.
- Commercial – abamectin (Agri-mek), oxamyl (Vydate), bifenthrin (Acramite), dicofol (Kelthane), fenpropathrin (Danitol)

Stink Bug

- Southern Green Stink Bug

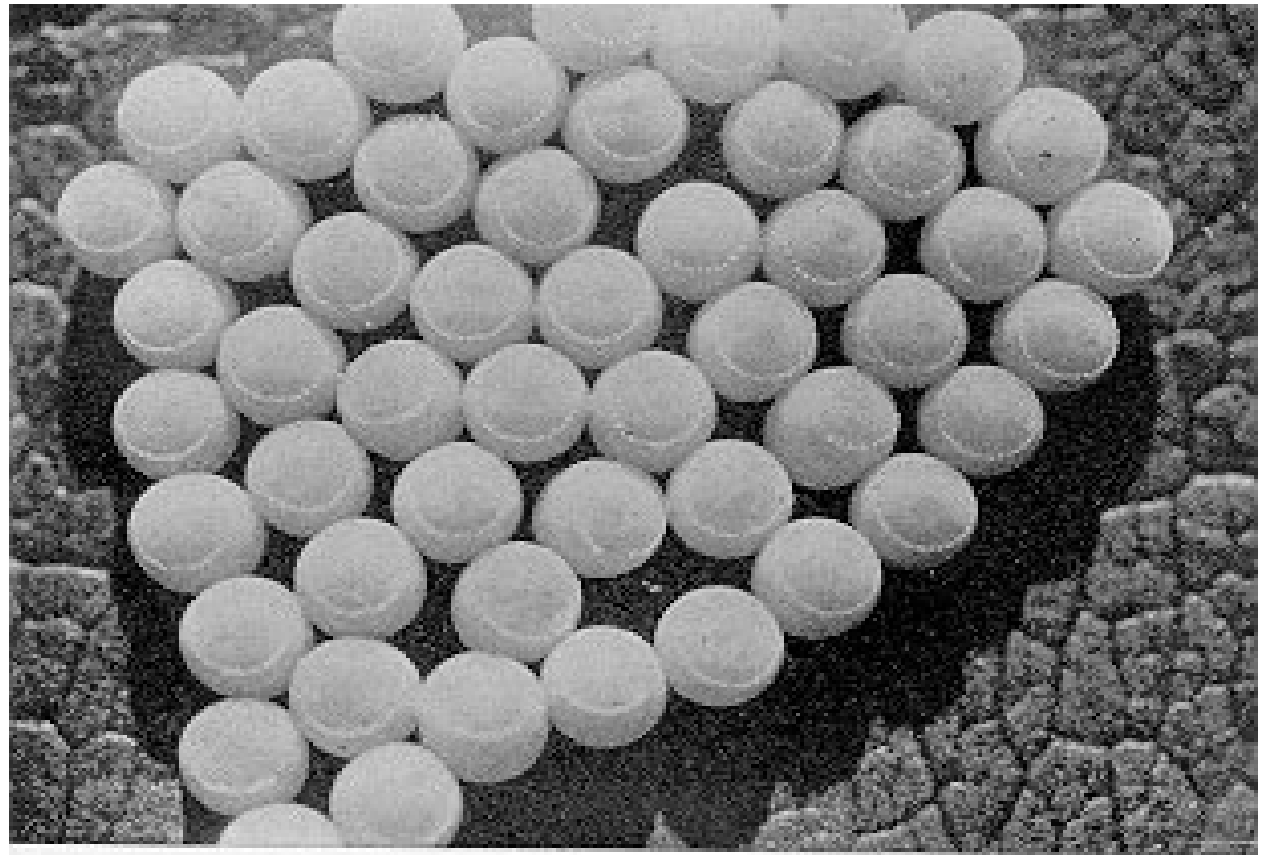


Stink Bug

- Piercing / sucking type mouthparts
- Various coloration from green to gray
- Damage in fruit appears as small circular white spots under tomato skin (like a cherry snow cone with the juice gone)
- Not difficult to control
- Look for egg masses, look like little drums

Stink Bug

- Stink Bug Eggs



Stink Bug

- CONTROL MEASURES
- Home Garden – endosulfan (Thiodan), malathion, carbaryl (Sevin)
- Commercial – endosulfan (Thiodan, Phaser), bifenthrin (Capture), zeta-cypermethrin (Mustang MAX), gamma-cyhalothrin (Proaxis), lambda-cyhalothrin (Warrior), methamidophos (Monitor), fenpropathrin (Danitol)

Whitefly

- Vectors viral disease like TYLCV



Whitefly

Sucking mouthparts

- > 1/16 of in. , white, look like white dust when disturbed
- Stress plants by heavy feeding, produce honeydew, discolor tomatoes and cucurbits, transmit plant disease
- Difficult to control
- Some chemicals may flare whiteflies
- Usually a mid to late season problem.

Whitefly

- CONTROL MEASURES
- Home Garden – insecticidal soaps, oils, neem, pyrethrins, malathion, garlic barrier
- Commercial – acetamiprid (Assail), buprofezin (Courier), imidacloprid (Admire, Provado), insecticidal soap (M-Pede), pyriproxyfen (Knack), thiomethoxam (Platinum)

Cutworm

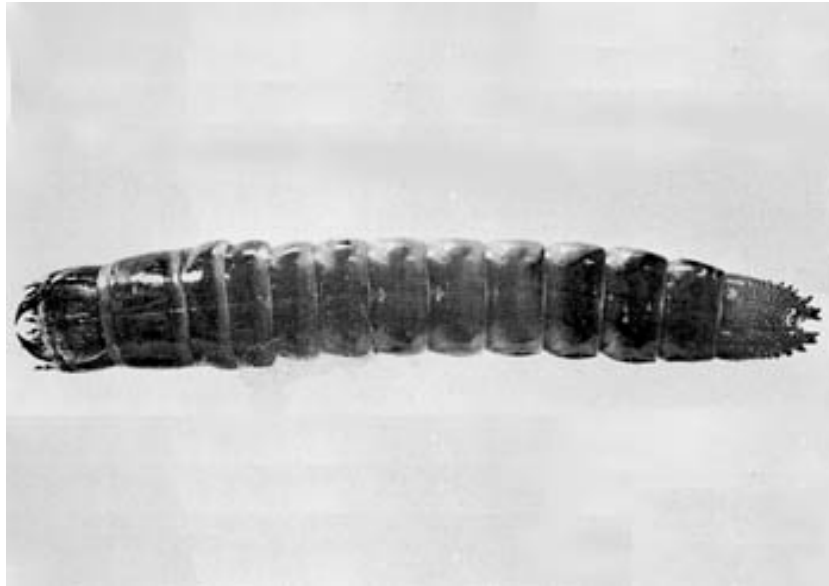
- Found in soil, under dirt clods or buried in the soil
- More of a problem in no-till situations or if planting in pasture or areas not tilled in a while
- Cuts young plants off at ground level
- Worms vary in color, 1 to ½ in. in length
- Worms out at night, not often seen

Cutworm

- CONTROL MEASURES
- Home Garden – scatter bran mixed with BT and molasses on bed surface or use protective collars like plastic 2 liter bottles, carbaryl (Sevin)
- Commercial – carbaryl (Sevin), cyfluthrin (Baythroid), diazinon, esfenvalerate (Asana), gamma-cyhalothrin (Proaxis), lambda-cyhalothrin (Warrior), zeta-cypermethrin (Mustang Max)

Wireworm

- Larvae of Click Beetle



Wireworm

- 1 in. to ½ in. long, usually brown to dark brown
- Hard bodied, stiff larvae
- Feed on roots of young plants
- More of a problem on new ground or previously pastured ground

Wireworm

- CONTROL MEASURES
- Home Garden – fallow ground prior to season, carbaryl (Sevin) applied prior to planting
- Commercial – diazinon prior to planting and incorporate

Leafminer

- Larvae at work inside leaf



Leafminer

- Very small, will only notice damage and not insect itself (1/16 in.)
- Mines in leaf appear snake-like
- If enough infect plant can reduce yield

Leafminer

- CONTROL MEASURES
- Home Garden – handpick and destroy mined leaves and remove egg clusters, spray plants with neem
- Commercial – abamectin (Agri-mek), diazinon, dimethoate, methamidophos (Monitor), spinosad (SpinTor), zeta-cypermethrin (Mustang MAX)

Tomato Pinworm

- Pinworm on leaf



Tomato Pinworm

- Pest of field and greenhouse grown tomatoes
- Caterpillars are $\frac{1}{4}$ in. when mature
- Caterpillars create serpentine or blotch mines in leaves as well as chew pin-holes into the base of developing buds and ripening fruit (under the calyx), may also cause leaves to roll or fold at midrib
- Look for larvae on upper $\frac{1}{2}$ of plant

Tomato Pinworm

- CONTROL MEASURES
- Home Garden – endosulfan (Thiodan), handpick mined leaves
- Commercial – abamectin (Agri-mek), cyfluthrin (Baythroid), emamectin benzoate (Proclaim), endosulfan (Thiodan, Phaser), esfenvalerate (Asana), gamma-cyhalothrin (Proaxis), indoxacarb (Avaunt), lambda-cyhalothrin (Warrior), methomyl (Lannate), spinosad (SpinTor), zeta-cypermethrin (Mustang MAX)

Nematodes

- Reniform Nematode on prepared slide



Nematodes

- Microscopic worms (some can be seen with trained naked eye if sample prepared properly)
- Many species parasitic on tomato

Nematodes

- CONTROL MEASURES
- Home Garden – add organic matter to soil, resistant varieties
- Commercial – methyl bromide, dichloropropene (Telone II, Telone C-17, Telone C-35), Vapam HL, chloropicrin (all are fumigants) oxamyl (Vydate)

Tomato Insects

- Scout plantings frequently
- Identify insects
- Evaluate thresholds
- Apply chemicals least harmful to beneficials such as lady beetles, lacewings, parasitic wasp, etc.
- Use IPM (Intergrated Pest Management) in your approach to managing tomato insect pest during the season

Thanks

- University of Florida Extension Website called Featured Creatures
<http://creatures.ifas.ufl.edu/>
- All pictures were downloaded from above website
- Also, THANKS TO YOU FOR TURNING OUT TODAY FOR THE PROGRAM****