

Invertebrate Garden Pests

There are many invertebrates that attack vegetable, herb, and butterfly gardens. Many are insects or their larvae. Not all are. Most will occur in the vegetable garden. Here is a guide to common garden pests in Florida. I have edited it somewhat to pertain to the gardens at Old Caples. I have not included orchard pests because we do not have an orchard. I have not included a few pests that only attack corn or are only around when corn is planted because we will not be growing corn. It requires too much space and is very labor intensive.

Here are some general tips for insect control:

















- Check the gardens for pests daily, especially the vegetable and herb gardens.
- In the butterfly garden, ignore chewing damage on larval plants and leave the caterpillars alone. You cannot have butterflies without caterpillars.
- Take any caterpillars you find in the vegetable garden and put them in the butterfly garden.
- Small numbers of pests are nothing to panic about. Just get rid of them before they reproduce.
- Rotate the crops in the vegetable garden every time you plant. This keeps pests from building up in the soil.
- Fire ants and aphids are big problems in our gardens. Take preventative measures against aphids and destroy fire ant mounds while they are small.
- Lastly, remember that many pests attack weak, unhealthy plants, so you taking good care of the gardens will help prevent many pests.

Here is a list of definitions and recipes:


















1. Collars – Make with paper, wax paper cups, etc. For cutworms and other stem chewers, use a tin can with no top or bottom or aluminum foil. Make the collar the recommended height and place around the transplants' stems. When the collar gets too small, remove it.
2. D.E. – Diatomaceous Earth. Made of crushed diatom shells. Sold in garden stores.
3. Debris – pulled weeds, fallen fruit, fallen leaves, clippings, etc.
4. Dusts
 - Lime and flour dust – mix equal parts of lime and flour.
 - Sabadilla – made from the sabadilla plant
5. Mats – Make from paper, foam rubber, etc. Flat disks with a 5 –10in. diameter. Cut a small hole in the center for the stem and a slit down one radius so you can get the mat around the plant. Press the mat firmly against the ground.
6. Solerization- Make sure soil is well tilled and moist. Place a thin, clear plastic sheet over the beds. Weigh down sides (you can bury them with dirt). Let sit 4 – 6 weeks. The best time to do this is over the summer.
7. Skeletonize – When a pest eats all but one or a few layers of leaf tissue. The remaining layers are clear or white colored.
8. Sprays
 - Bug juice – Collect ½ cup of the problem insect. Crush well. Add two cups lukewarm water. Strain through cheesecloth. Dilute ¼ cup of this mixture with two cups water. Freeze the rest for later. It will last about a year in the freezer.

- Extract of basil spray – Dilute a few tablespoons of extract of basil in 1 pint of water.
 - Garlic spray – Mix ½ cup ground garlic cloves with 1 pint of water. Strain the particles out to make a clear solution.
 - Hot pepper spray – Mix ½ cup ground or chopped hot peppers with 1 pint of water. Strain the particles out to make a clear solution. Hot pepper powder can also be used.
 - Lime water spray – Mix equal parts of lime and water.
 - Oil spray – Mix 1 tablespoon vegetable cooking oil with one gallon of water.
 - Oil and water spray – See oil spray.
 - Soap and water spray – Put a few tablespoons of a non-degreasing liquid dishwashing soap in a gallon of water.
 - Tomato leaf spray – Tightly pack 1 quart of tomato leaves in a bucket. Pour 1 gallon boiling water over them. Let this sit for one hour. Strain through a cloth. Squeeze the leaves as you strain them. Dilute with a gallon of water. Refrigerate till needed.
 - Turnip/corn oil spray – Mix equal parts of turnip and corn oil.
 - Water, alcohol, and volek oil spray – Mix 1 quart water, 1 cup alcohol, and ½ cup volek oil. Do two applications one week apart.
9. Traps
- Glue trap – Dissolve ¼ pound (4 ounces) of glue in 1 gallon of water. Let sit overnight. Paint stems of infested plants.
 - Molasses trap – Mix equal parts of bran and hardwood sawdust. Add enough molasses to make mixture sticky. Add enough water to make mixture moist. Put a few spoonfuls around each infested plant.
 - Potato trap – Cut a potato in half. Scoop out most of the inside. Make a hole in the front of the potato. Half bury the potato (bury the hole) in the ground near infested plants. Dig up after a few days.
 - Sticky traps – Smear a sticky substance on white or yellow boards. Place these boards near infested plants.
10. Very warm water bath – Spray infested plants with warm water. Make sure the water is not so hot it will burn the plants!

Table 1: Common Vegetable Pests

Pest	Description	Common Vegetable		Pests		Companion Plants	Traps
		Picture	Plants Attacked	Damage Caused	Controls		
Aphids	small, soft bodied, green, gray, violet, red, yellow or brown	 one of many species	all kinds of plants	congregate on underside of leaves, cause leaves to curl, pucker, yellow, and wilt; sooty mold grows on leaves below infested leaves	destroy badly infested plants, soap and water, lime water, garlic, hot pepper, or tomato leaf sprays, bug juice	mints, garlic, chives, coriander, anise, nasturtium, petunia	yellow sticky trap
Asparagus Beetle	adult: small, metallic blue black, three yellow to orange squares along each wing cover Larvae: olive green or gray, black legs, black head		asparagus	disfigure shoots, plant defoliated	dust with phosphate rock or bone meal	tomato, nasturtium, calendula	
Beet Armyworm	caterpillar: green, dark lateral stripes		sugar beets, many other vegetables	congregate, severe defoliation	handpick small numbers, control weeds, put stiff 3in. collar around transplants		dig holes in ground for traps
Beet Webworm	caterpillar: average size, slender, yellowish to green, dorsal black stripe		beets, cabbage, beans, peas, carrots, spinach, and others	web leaves, severe defoliation	handpick small numbers, control weeds, put stiff 3in. collar around transplants		
Blister Beetle	long, slender, soft-bodied, large heads, short antenna		many	chews through leaves	handpick with gloves, sabadilla or lime and flour dusts		
Cabbage Looper	large, pale green, light stripes down back, loops as it crawls green white eggs on leaf surface		all members of cabbage family, tomato, potato, pea, lettuce, celery	eat holes in leaves	handpick, hot pepper spray, bug juice	marigolds, garlic, hot peppers, hyssop, onions, rosemary, sage, tansy, thyme	celery and amaranth for trap crops
Cabbage Maggot	maggot: very small, white		cabbage, broccoli, radish, turnip, cauliflower, cress, celery, brussel sprouts	brown tunnels in tissue, seedlings wilt and die	mat around transplants	mints, tomato, rosemary, sage	radishes and turnips for trap crops
Carrot Rust Fly	adult: very small, black, yellow hairs, yellow head, yellow legs maggot: very small, yellow to white eggs: in crown of plants		carrots, celery	maggots chew roots, plants are dwarfed	destroy infested plants	onions, leeks, coriander, pennyroyal, rosemary, salsify, sage, wormwood	
Carrot Weevil	adult: copper, small larvae: small, white, white head		celery, carrot	larvae feed inside seeds, flower buds, stems	handpick larvae, clean up debris and remove high grass		
Chinch Bug	adult: small, black, white wings with triangular black patch nymph: tiny, reddish, white band across middle, older are black with white band, offensive odor		corn and grains	suck juices from stem	control weeds	soybeans	
Colorado Potato Beetle	adult: yellow, broad convex back, small, fine black lines lengthwise down wing covers, black dots on thorax. Larvae: red with two rows of black spots, black head eggs: yellow on underside of leaves		potato, eggplant, tomato, pepper	chews through leaves, defoliates plants, skeletonized leaves	handpick eggs and adults, extract of basil spray, bug juice, don't like mulch	snap bean, horseradish, garlic, flax, marigold	sprinkle cornmeal or bran on infested plants
Cowpea Curculio	very small, black, look like beetle with snout		any kind of beans, peas, cowpeas	lay eggs inside beans, grubs eat beans	remove and destroy infested fruit		
Crickets and Grasshoppers	various sizes and colors, hind legs modified for jumping	 mole cricket	many	chew through stems and leaves	eliminate nearby weeds and grasses		fill jar with a few cups molasses and water and set in garden
Cutworms	plump, soft-bodied, dull in color, a few bristly hairs, coil bodies when disturbed		any vegetable	eat through stem at or near soil surface	control weeds, put stiff paper collar around stems of transplants buried at least 1in. deep in the ground, don't like chicken manure, oak-leaf mulch, damp wood ashes, or crushed eggshells(sprinkle around base of plant)		put cornmeal or bran around each plant, molasses trap
Diamondback Moth	caterpillar: small, pale yellowish green, fine scattered black hairs, wiggle like crazy when disturbed		cabbage, cauliflower, broccoli, and relatives	underside of leaves, shot hole pattern	clean up garden debris, handpick small numbers, wash off with water		
Enophyid Mites (Gall, Rust or Bud Mites)	very tiny, cigar-shaped	 damage	many	leaves have small colorless or white spots, dry, and fall off	very warm water bath, dust plants with D.E.		glue trap

European Corn Borer	small, flesh colored, brown spots, dark brown head		corn, bean, beet, potato	larvae leave holes as they burrow into the wood, sawdust trail	handpick by splitting stalk	peanut, soybean	sunflowers for trap crop
Fall Armyworm	caterpillar: light tan to green to black, three yellowish white hair lines from head to tail, dark stripe next to hair line			congregate, severe defoliation	handpick small numbers, control weeds, put stiff 3in. collar around transplants		dig holes in ground for traps
Fire Ants	small, red ants, bites burn like crazy		nuisance to gardeners	mound-shaped nests in gardens and surrounding lawns	slowly pour three gallons of boiling water down mound, dig up small mounds		mix boric acid with sugar and use for bait
Flea Beetle	very small, jump when disturbed		corn, eggplant, horseradish, potato, spinach, strawberry, sweet potato, tomato	shot-hole pattern in leaves	garlic spray, hot pepper spray, wood ashes	mint, garlic	Chinese cabbage and radishes for trap crops, white sticky trap
Garden Fleahopper	very small, almost black, hind legs modified for jumping		southern peas, beans, cabbage, tomatoes, and others	small discolored areas on leaves, leaves wilt and die	control weeds		alfalfa and clover for trap crops
Garden Webworm	caterpillar: small, yellowish or greenish, light stripe down back, three dark spots on each segment form a triangle		beans, peas	skeletonize leaves, web leaves together	handpick small numbers, control weeds, put stiff 3in. collar around transplants		
Harlequin Bug	adult: very small, black, orange to red markings, shield shaped, flat, disagreeable odor eggs: look like small white pegs with black hoops, lined up in two rows		cabbage, lettuce, corn, eggplant, potato, squash	pierce leaves and suck juices, wilting of plant, yellowish or black spots on leaves	handpick, control weeds, soap sprays		use turnips or mustard greens for trap crops
Imported Cabbage Worm	caterpillar: moderate size, bright green, covered with fine, closely set hairs eggs: yellow, slightly ridged, at base of leaves		all members of cabbage family, lettuce, nasturtium	eat holes in leaves, drops small particles of green excrement on surface	handpick in early morning, dust damp leaves with rye flour	tansy, rosemary, other aromatic plants, tomato	put cornmeal around infested plants
Leafhoppers	small, various colors, hop away when disturbed		lettuce, celery, carrot, grain crops	leaves turn yellow, red, or brown and die	control weeds, sprinkle D.E. around infested plants	petunia, geranium	early corn for trap crop
Leaf Miners	insect larvae that tunnel beneath the leaf surface		spinach, beet, potato, cabbage, pepper	tunnel or blotched area under leaf surface can be seen, fecal matter in tunnel, foliage yellows	remove and dispose of infested leaves, keep garden weed free		radishes for trap crop
Lygus Bug	adult: small, flattened, football-shaped, greenish or brown nymphs: resemble aphids		legumes	pierce leaves and suck juices	handpick a few bugs, remove garden debris		alfalfa for trap crop
Mealybugs	soft-bodied, small, look like cotton tufts on underside of leaves		many	suck sap from leaves, diseases or fungi	rinse off with water, put drop of alcohol on bugs		
Melonworm	caterpillar: small, bright green, dorsal white stripes		most cucurbits	bores into foliage, vines, and fruits	remove and destroy infested fruit		squash as trap crop
Mexican Bean Beetle	adult: copper colored, 16 black spots in three rows down back, no markings between body and head larvae: lemon colored, fuzzy, covered with spines eggs: yellow, on leaves		many beans and cowpeas	skeletonized leaves	handpick beetles, destroy eggs, mix turpentine and corn-oil for spray	marigold, potato, rosemary, summer savory, petunia, garlic, nasturtium	bush lima plant for trap crop
Nematodes	microscopic roundworms		almost anything	malformation of infected area, root galls, dieback	sterilization of soil over summer, don't like compost, destroy infested crop root systems after harvest, extended periods of flooding	marigold, salvia, dahlia, calendula	Castor beans for trap crop
Onion Maggot	maggot: very small, white, legless eggs: cylindrical, laid along base of plant or in bulbs		onion	feeds on lower part of stem or bulb, plant loses vigor	don't plant in rows - scatter throughout garden, cover row with a layer of sand or wood ashes	intercrop onions with nonvulnerable plants	culled onions for trap crop
Parsleyworm	large, green, yellow-dotted black band across each segment, emits strong sweet scent when disturbed		celery, carrot	eat holes in leaves	handpick small numbers, control weeds		
Pickleworm	caterpillar: small, green or copper colored younger: pale yellow, black spots		most cucurbits	bores into buds, blossoms, vines, and fruits	remove and destroy infested fruit		squash as trap crop









Saltmarsh Caterpillar	caterpillar; moderate size, dense hairs from yellow to brown to black		almost anything	severe defoliation	handpick small numbers, control weeds, put stiff 3in. collar around transplants		ditches filled with water or liquid soap
Seedcorn Maggot	maggot; small, white		corn, beans, peas, melons, cabbage, potatoes, turnips	feeds on roots, plant loses vigor	plow crop residues into soil		
Slugs and Snails	soft-bodied, thick mucous membrane, snails have shells		almost anything	slime trails on plants, night feeders	eliminate hiding places (weeds and debris), hand pick at night, colfers on transplants (2in. into sand)	prostrate rosemary, wormwood	put stale beer in saucers
Southern Armyworm	caterpillar; dark gray to black, yellow stripes on sides			congregate, severe defoliation	handpick small numbers, control weeds, put stiff 3in. collar around transplants		dig holes in ground for traps
Spider Mites	look like small red dots		many vegetables	underside of foliage, leaves discolored, turn brown, and drop, tiny webs on leaf surface	very warm water bath, dust plants with D.E.	onion, garlic, chives	glue trap
Spotted Cucumber Beetle	small, yellow green, black head, 12 spots on back		infests young bean, cucumber, melon, squash, gourd, asparagus, tomato, beet, cabbage, pea, potato, eggplant, and the blossoms of the sweet pea. Larvae attack corn roots.	chews through leaves	control weeds, don't like mulch, sprinkle D.E. or wood ashes around base of plants	tansy, radish	radishes for trap crop
Squash Bug (Stink Bug)	adult: moderate sized, brown black, offensive odor nymph: green to brown, reddish head, reddish legs eggs: brick red clusters on leaves	 one of several species	vine crops	causes vine to wilt and die, leaves wilt, dry up, and turn black	control weeds, handpick adults, nymphs, and eggs, sprinkle wood ashes around infested plants	tansy, nasturtium, radish, marigold	radishes are trapcrop
Squash Vine Borer	caterpillar; moderate size, white, brown head, small brown legs		most cucurbits	sudden wilting, sawdust deposits at stem base	silt stem to handpick, handpick eggs, put collar around transplants	radish	
Stalk Borer	moderate size, thin, striped caterpillar		almost anything	small round hole where they burrow, stems break, leaves wilt	remove infested stems, weed control		
Striped Cucumber Beetle	adult: small, wingcovers yellow with three black stripes across, black head larvae: whitish		See Spotted Cucumber Beetle	See Spotted Cucumber Beetle	See Spotted Cucumber Beetle	See Spotted Cucumber Beetle	See Spotted Cucumber Beetle
Sweet Potato Weevil	adult: small, snout and legs metallic blue, thorax and legs bright orange, look like ants Larvae: legless, brown head, white		sweet potatoes	grubs tunnel into vines to roots, adults chew holes in leaves and vines	control weeds, destroy infested plants		
Tarnished Plant Bug	adult: small, roundish, brassy brown or greenish, black spots on thorax and abdomen nymph: smaller, looks like adult		bean, beet, cabbage, cucumber, potato	pierce leaves and suck juices, black spots on stem tips, buds, and roots	sabadilla dust		white sticky trap
Thrips	very small, slender, bristle shaped wings.	 magnified	many	foliage becomes bleached and withers, flowers and fruits scarred	control weeds, oil and water spray, garlic spray, smother with newspaper		
Tomato Hornworm	large, green, diagonal white bars on each side, horn on back end		tomato, eggplant, potato, pepper	eat holes in leaves, dark colored droppings	handpicking, hot pepper spray	borage, marigold	dill for trap crop
Tomato Pinworm	caterpillar; very small, yellowish gray or green, purple spots		tomato	trail like leafminer but no fecal matter, at certain age they leave leaf and bore into fruit	remove and destroy infested leaves and fruit		
Tortoise Beetles	adult: small, oval, flattened, golden or metallic colored larvae: grubs, forked posterior appendage with fecal matter that they thrust into an attacker's face		eggplant, sweet potato, and related plants	cut holes in leaves	handpick		
Vegetable Weevil	adult: dull in color, pale V on wing covers, has short, broad snout larvae: green or cream colored, yellow head patterned with brown dotted lines		beet, cabbage, cauliflower, lettuce, onion, potato, tomato, turnip, and others	adults chew through leaves, severe defoliation	control weeds		

Whiteflies	adults: very small, powdery white wings, look like white specks larvae: oval, flat, transparent to greenish in color eggs: yellow, turn gray as they mature		almost anything	leaves lose vigor, yellow, and die, sooty mold	some oil sprays, mix water, alcohol, and volck oil	nasturtium, manigold, nicandra	yellow sticky trap
White Grubs (Japanese and June Beetle larvae)	larvae: small, white adult Japanese: small, shiny, metallic green, copper brown wings adult June: large, brown		corn, soybean	adults chew through leaves	handpick adults, control weeds, sprinkle D.E. around plants, till soil well	garlic, tansy, rue, geranium	Larkspur may attract and poison Japanese Beetles
Wireworms	small, dark brown to yellowish, hard shelled, cylindrical		beet, beans, carrot, corn, lettuce, onions, peas, potato, strawberry, sweet potato	plants wilt and can die	till soil well, bug juice	white mustard, buckwheat, weed	potato trap
Yellow-striped Armyworm	prominent yellowish to white stripe down back		peas, beans, lentils, sugar beets, potatoes	congregate, severe defoliation	handpick small numbers, control weeds, put stiff 3in. collar around transplants		dig holes in ground for traps

Table 2: Butterfly Garden Pests

Pest	Description	Picture	Plants Attacked	Damage Caused	Controls	Companion Plants	Traps
Aphids	small, soft bodied, green, gray, violet, red, yellow or brown	 one of many species	all kinds of plants	congregate on underside of leaves, cause leaves to curl, pucker, yellow, and wilt, sooty mold grows on leaves below infested leaves	destroy badly infested plants, soap and water, lime water, garlic, hot pepper, or tomato leaf sprays, bug juice	mints, garlic, chives, coriander, anise, nasturtium, petunia	yellow sticky trap
Blister Beetle	long, slender, soft-bodied, large heads, short antenna		many	chews through leaves	handpick with gloves, sabadilla or lime and flour dusts		
Crickets and Grasshoppers	various sizes and colors, hind legs modified for jumping	 mole cricket	many	chew through stems and leaves	eliminate nearby weeds and grasses		fill jar with a few cups molasses and water and set in garden
Fire Ants	small, red ants, bites burn like crazy		nuisance to gardeners	mound-shaped nests in gardens and surrounding lawns	slowly pour three gallons of boiling water down mound, dig up small mounds		mix boric acid with sugar and use for bait
Flat-headed Wood Borers	enlarged, flattened thoracic segments	 adult	many woody plants	larvae leave holes as they burrow into the wood	handpick by splitting stalk		
Leafhoppers	small, various colors, hop away when disturbed	 leafhopper	grasses, many others	leaves turn yellow, red, or brown and die	control weeds, sprinkle D.E. around infested plants	petunia, geranium	early corn for trap crop
Leaf Miners	insect larvae that tunnel beneath the leaf surface		many	tunnel or blotched area under leaf surface can be seen, fecal matter in tunnel, foliage yellows	remove and dispose of infested leaves, keep garden weed free		radishes for trap crop
Lygus Bug	adult: small, flattened, football-shaped, greenish or brown nymphs: resemble aphids		many plants	pierce leaves and suck juices			alfalfa for trap crop
Nematodes	microscopic roundworms	 highly magnified	almost anything	malformation of infected area, root galls, dieback	sterilization of soil over summer, don't like compost, destroy infested crop root systems after harvest, extended periods of flooding.	marigold, salvia, dahlia, calendula	Cestor beans for trap crop
Round-headed Wood Borers	adult: moderate size, long, cylindrical, very delicate antenna		many woody plants	larvae leave holes as they burrow into the wood	pour boiling water down borer holes		
Scales	small, shaped like oyster shells, shaped like animal scales, etc., remain stationary	 one of many species	citrus	produces toxic substance that kills parts of tree it feeds on, yellow spots on upper leaf surface, sooty mold	scraped off, brush off with soapy water		
Slugs and Snails	soft-bodied, thick mucous membrane, snails have shells		almost anything	slime trails on plants, night feeders	eliminate hiding places (weeds and debris), hand pick at night, collars on transplants (2in. into sand)	prostrate rosemary, wormwood	put stale beer in saucers
Spider Mites	look like small red dots		many shrubs	underside of foliage, leaves discolored, turn brown, and drop, tiny webs on leaf surface	very warm water bath	onion, garlic, chives	glue trap
Tarnished Plant Bug	adult: small, roundish, brassy brown or greenish, black spots on thorax and abdomen nymph: smaller, looks like adult		many flowers	pierce leaves and suck juices, black spots on stem tips, buds, and roots	sabadilla dust		white sticky trap
Thrips	very small, slender, bristle shaped wings	 magnified	many	foliage becomes bleached and withers, flowers and fruits scarred	control weeds, oil and water spray, garlic spray, smother with newspaper		
Whiteflies	adults: very small, powdery white wings, look like white specks larvae: oval, flat, transparent to greenish in color eggs: yellow, turn gray as they mature		almost anything	leaves lose vigor, yellow, and die, sooty mold	some oil sprays	nasturtium, marigold, nicandra	yellow sticky trap
White Grubs (Japanese and June Beetle larvae)	larvae: small, white adult: Japanese: small, shiny, metallic green, copper brown wings adult June: large, brown		grasses	adult chews through leaves	handpick adults, control weeds, sprinkle D.E. around plants	garlic, tansy, rue, geranium	Larkspur may attack and poison Japanese Beetles

Common Herb Pests

Pest	Description	Common Herb Pests		Damage Caused	Controls	Companion Plants	Traps
		Picture	Plants Attacked				
Aphids	small, soft bodied, green, gray, violet, red, yellow or brown	 one of many species	all kinds of plants	congregate on underside of leaves, cause leaves to curl, pucker, yellow, and wilt, sooty mold grows on leaves below infested leaves	destroy badly infested plants, soap and water, lime water, garlic, hot pepper, or tomato leaf sprays, bug juice	mints, garlic, chives, coriander, anise, nasturtium, petunia	yellow sticky trap
Blister Beetle	long, slender, soft-bodied, large heads, short antenna		many	chews through leaves	handpick with gloves, sabadilla or lime and flour dusts		
Cabbage Looper	large, pale green, light stripes down back, loops as it crawls green white eggs on leaf surface		parsley	eat holes in leaves	handpick, hot pepper spray, bug juice	marigolds, garlic, hot peppers, hyssop, onions, rosemary, sage, bany, thyme	celery and amaranth for trap crops
Carrot Rust Fly	adult: very small, black, yellow hairs, yellow head, yellow legs maggot: very small, yellow to white eggs: in crown of plants		parsley, parsnips	maggots chew roots, plants are dwarfed	destroy infested plants	onions, leeks, conander, pennyroyal, rosemary, salsify, sage, wormwood	
Carrot Weevil	adult: copper, small larvae: small, white, white head		parsnip, parsley	larvae feed inside seeds, flower buds, stems	handpick larvae, clean up debris and remove high grass		
Crickets and Grasshoppers	various sizes and colors, hind legs modified for jumping	 mole cricket	many	chew through stems and leaves	eliminate nearby weeds and grasses		fill jar with a few cups molasses and water and set in garden
Fire Ants	small, red ants, bites burn like crazy		nuisance to gardeners	mound-shaped nests in gardens and surrounding lawns	slowly pour three gallons of boiling water down mound, dig up small mounds		mix boric acid with sugar and use for bait
Leafhoppers	small, various colors, hop away when disturbed	 leafhopper	many	leaves turn yellow, red, or brown and die	control weeds, sprinkle D.E. around infested plants	petunia, geranium	early corn for trap crop
Leaf Miners	insect larvae that tunnel beneath the leaf surface		many	tunnel or blotched area under leaf surface can be seen, fecal matter in tunnel, foliage yellows	remove and dispose of infested leaves, keep garden weed free		radishes for trap crop
Mealybugs	soft-bodied, small, look like cotton tufts on underside of leaves		many		rinse off with water, put drop of alcohol on bugs		
Nematodes	microscopic roundworms	 highly magnified	almost anything	malformation of infected area, root galls, dieback	sterilization of soil over summer, don't like compost, destroy infested crop root systems after harvest, extended periods of flooding	marigold, salvia, dahlia, calendula	Castor beans for trap crop
Parsleyworm	large, green, yellow-dotted black band across each segment, emits strong sweet scent when disturbed		dill, parsley	eat holes in leaves	handpick		
Spider Mites	look like small red dots		many	underside of foliage, leaves discolored, turn brown, and drop, tiny webs on leaf surface	very warm water bath, dust plants with D.E.	onion, garlic, chives	glue trap
Slugs and Snails	soft-bodied, thick mucous membrane, snails have shells		almost anything	slime trails on plants, night feeders	eliminate hiding places (weeds and debris), hand pick at night, collars on transplants (2in. into sand)	prostrate rosemary, wormwood	put stale beer in saucers
Thrips	very small, slender, bristle shaped wings	 magnified	many	foliage becomes bleached and withers, flowers and fruits scarred	control weeds, oil and water spray, garlic spray, smother with newspaper		
Tomato Hornworm	green, diagonal white bars on each side, horn on back and adults: very small, powdery white wings, look like white specks larvae: oval, flat, transparent to greenish in color eggs: yellow, turn gray as they mature		dill	eat holes in leaves, dark colored droppings	handpicking, hot pepper spray	borage, marigold	dill for trap crop
Whiteflies			almost anything	leaves lose vigor, yellow, and die, sooty mold	some oil sprays	nasturtium, marigold, nicandra	yellow sticky trap

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