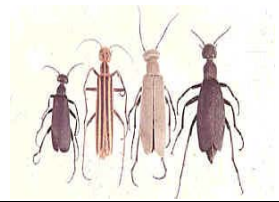
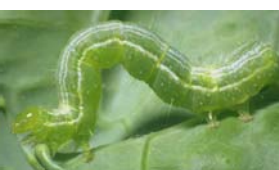








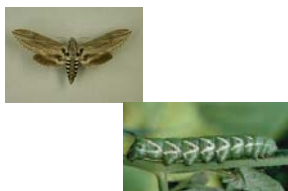




Vegetable Garden Insects - Chewing Mouthparts	
	<p>Blister Beetles</p> <ul style="list-style-type: none"> • Many colors and shapes; travel in swarms; can quickly defoliate plant • Symptoms: stripped plants; swarms of beetles on plants • Controls: Shake off plant and step on them; shop vac; carbaryl on beetles and host plants <p><i>Bean, beet, carrot, cabbage, Chinese cabbage, corn, eggplant, melon, mustard, pea, pepper, potato, radish, spinach, squash, sweet potato, tomato, turnip</i></p>
	<p>Cabbage Loopers</p> <ul style="list-style-type: none"> • Seedlings occasionally damaged; most injury occurs after heading; bores through heads and contaminates heads and leaves with their bodies and excrement • Symptoms: Ragged holes in leaves • Controls: Hand pick; Bt <p><i>Broccoli, cabbage, turnips, radish</i></p>
	<p>Corn Earworm</p> <ul style="list-style-type: none"> • Moths active at night; full grown larvae up to 1 ½" long; hatch from eggs laid on fresh corn silks; feed on leaves, tassels, whorl within ear, and ear • Symptoms: Developing kernels within ears are eaten; extensive excrement at ear tip • Controls: Plant early; Bt; 5% carbaryl dust by hand brush to individual ear silks starting when new silks first appear and continuing at 2-3 day intervals until silks stop growing; lacewings; minute pirate bugs, damsel bugs <p><i>Sweet corn</i></p>
	<p>Cut Worms</p> <ul style="list-style-type: none"> • Larvae of several species of night-flying moths; ½ to 1-1/2" long; live underground; nocturnal • Symptoms: Young stems severed at ground level • Controls: collar buried 1" below ground and 3" above around seedlings; place boards on ground at night – collect worm in AM; beetles, birds, parasitic wasps, Bt; carbaryl <p><i>Asparagus, cabbage, squash, tomato, bean, cucumber – all vegetable seedlings</i></p>
	<p>Earwigs</p> <ul style="list-style-type: none"> • ½" to 1" long; brown to black color; winged or wingless; nocturnal; feed on live or dead insects and decaying or live vegetation • Symptoms: Chewed leaves • Control: Lay out rolls of newspaper in evening & collect earwigs in morning; carbaryl <p><i>Not selective</i></p>
	<p>Flea Beetles</p> <ul style="list-style-type: none"> • Small black insects • Symptoms: Tiny holes in leaves slows growth and production • Controls: parasitic wasps; manage weeds; cover plants; Surround (kaolinitic clay); carbaryl <p><i>Eggplant, tomato, potato</i></p>

- Home remedy: 1 TBSP non-detergent dish washing liquid or baby shampoo & 2 drops vegetable oil per 1 gallon water – spray in evening
- Bt (Bacillus thuringiensis) – biological insecticide kills caterpillars but does not kill other insects; allows natural enemies to survive and contribute to pest suppression

Vegetable Garden Insects - Chewing Mouthparts






	<p>Grape Leaf Skeletonizers</p> <ul style="list-style-type: none"> • Yellow caterpillar with purple or black stripes; may be covered with black spines • Symptoms: Chewed upper and lower leaf, all but veins • Controls: Bt; pyrethrum dust; carbaryl <p><i>Grapes</i></p>
	<p>Grasshoppers</p> <ul style="list-style-type: none"> • Lay eggs in soil; arrive in large numbers, eat everything in site • Symptoms: chewed leaves/plants • Controls: Cover crops with row-cover cloth; Nosema locustae bait; poultry; carbaryl <p><i>Not selective</i></p>
	<p>Leaf Miners</p> <ul style="list-style-type: none"> • Small maggots of tiny flies hatch from eggs and live in leaves • Symptoms: Light colored trails in leaves • Controls: Yellow sticky traps <p><i>Cantaloupe, lettuce, tomato, pepper, eggplant, bean</i></p>
	<p>Lesser Goldfinch Damage</p> <p><i>Sunflower, squash, and rhubarb leaves</i></p>
	<p>Tomato Hornworms</p> <ul style="list-style-type: none"> • Sphinx moth deposits eggs on upper and lower leaf surface in spring; look for dark green or black excrement from larva (tomato hornworm) • Symptoms: Chewed leaves and stems; excrement • Controls: Hand pick; lady beetles & lacewings eat eggs; Bt; carbaryl; tilling soil after harvest causes up to 90% mortality <p><i>Tomato, eggplant, pepper, potato</i></p>

Vegetable Garden Insects - Piercing/Sucking Mouthparts






	<p>Aphids</p> <ul style="list-style-type: none"> • Cabbage and turnip aphids are green; give birth to live aphids; love tender leaves; population declines with heat (predators more numerous) • Symptoms: Sticky substance (honeydew); ants; black sooty mold • Controls: Lady beetle; lacewing; syrphid fly; insecticidal soap; high pressure hose; home remedy <p><i>Cabbage, collard, kale, turnip, mustard, broccoli, cauliflower, Brussel sprout, radish</i></p>
	<p>Beet Leaf Hoppers</p> <ul style="list-style-type: none"> • Suck undersides of leaves which become mottled looking; transmits curly top virus • Symptoms of Curly top virus: Leaves puckered & stunted; tomato leaves curl & roll upward and main petiole curves downward; leaves become leathery & turn yellowish • Controls: Plant after end of June; manage weeds; protect young plants w/ row cover like Remail; remove infected plants <p><i>Tomato, beet, pepper, squash, bean, squash, melon, cucumber, spinach, potato</i></p>

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Vegetable Garden Insects - Piercing/Sucking Mouthparts

	<p>False Chinch Bugs</p> <ul style="list-style-type: none"> Adults are 1/8-inch long, flattened, grayish bugs, with black or brown markings; nymphs are smaller and similar in appearance to the adults; have a tendency to sit in large masses on the soil at the base of attacked plants Symptoms: Stunting and/or wilting Controls: Eliminate mustard and other annual weeds <p><i>Grape, squash, melon, tomato, corn, potato</i></p>
	<p>Mites</p> <ul style="list-style-type: none"> Suck sap from undersides of leaves; can kill plants or cause serious stress Symptoms: Webbing; white or yellow speckles on leaves; leaf drop if high populations Controls: Spray with water weekly; home remedy; insecticidal soaps; lady beetles, predatory mites; big-eyed bugs; predatory thrips <p><i>Melon, raspberry, eggplant, bean</i></p>
	<p>Squash Bugs</p> <ul style="list-style-type: none"> Suck and inject toxic substance Symptoms: Yellow specks on leaves, then wilting leaves, and ultimately black or dried out leaves Controls: Collect/destroy egg clusters on underside of leaves; insecticidal soap, Neem or permethrin when insects are small; difficult to kill adults - trap adults under board or burlap and destroy in AM <p><i>Most common on pumpkin and squash, also on cucumber, melon</i></p>
	<p>Stink bugs</p> <ul style="list-style-type: none"> Appear in spring to late fall; lay eggs on stems & undersides of leaves; attracted to yellow; dislikes heat; usually not a serious problem Symptoms: Can leave cosmetic scars on fruit Control: Remove debris; manage weeds; spray hard stream of water on tomatoes when first seen; home remedy; hand pick; vacuum; Surround (kaolin clay mineral leaves protective powdery film); carbaryl <p><i>Sunflower, tomato</i></p>
	<p>Thrips</p> <ul style="list-style-type: none"> Overwinter as adults or pupae under litter on ground Symptoms: Edges of leaves curled; discolored or distorted plant tissue; black specks of excrement around stippled leaf surfaces Controls: Home remedy; destroy infected buds and blooms; Neem; Lady beetles <p><i>Bean, garlic, onion, pepper, pumpkin, squash, cucumber, melon</i></p>

Beneficials

	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  Adult </div> <div style="text-align: center;">  Larva </div> </div>		
Lace Wing	Lady Beetle	Hover Fly	Ground Beetle
Larva feeds on aphids, other small insects, eggs, & mites		Eats aphids and other soft-bodied insects; pollinates flowering plants	Eats grubs, cut worms, maggots, caterpillars, aphids, weevils, slugs, snails

4/18/2013

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