

Common Pest Insects and Natural Enemy Insects

Master Gardener Program of Santa Clara County



Some Common Natural Enemies of Insect Pests

Common Name	Size, Appearance	Benefit	Notes
Big-eyed bug	1/8-1/4", black and silver, clear wings, big eyes	General predator: aphids, thrips, small caterpillars, mites, leafhoppers, and eggs.	Lays eggs on goldenrod and pigweed.
Crab spider, garden spider, lynx spider, wolf spider, etc.	various	Any insect, including many that other beneficials won't eat, e.g. cucumber beetles, corn earworms, and weevils.	Good mix of tall and short plants, thick layers of mulch, compost, bundles of bamboo, inverted pots.
Ground beetle	1/4-1", iridescent black or brown; grooved wings	Larvae and adults prey on soil dwelling insects, snail eggs, slugs, caterpillars, earwigs.	Live in litter under plants (santolina is a good one).
Lacewing	1/2-3/4", large eyes, heavily-veined wings, green or brown.	General predator. Larvae eat eggs, mites, thrips, caterpillars, aphids, and other soft-bodied insects.	Each green or gray egg on a stalk attached to plant stem or leaf. Adults eat nectar and pollen from corn, sunflowers, grasses, legumes.
Lady beetle	1/4", red or black, usually with contrasting spots.	Adults and larvae eat aphids, mites. Larvae eat also beetle larvae, eggs, other insects.	
Minute pirate bug	1/16", silver and black	General predator; mites, caterpillars, thrips, eggs.	Goldenrod, yarrow, daisies, corn. Look for it on ends of corn silk.
Parasitic wasps	1/25-1/4"	Many varieties parasitize aphids and many other insects. Tan swollen "mummies" of aphids, white pupae on back of hornworms, darkened stink bug eggs all indicate a wasp has parasitized them.	Best to see them through hand lens early in the morning, waking up on flowers of yarrow, Queen Anne's lace, coriander, etc. Most too small to see without magnification.
Praying mantis	3-5", green or brown or combo	General predator.	In spite of its size, not a major beneficial insect, since it eats everything.
Soldier beetle	1/3-1/2", slender, flat, brown to black, sometimes with bright colors.	Adults and larvae prey on cucumber beetles, aphids, caterpillars, and eggs.	Local species has red head. Often seen on goldenrod, aster family, milkweed, catnip and fennel.
Spined soldier bug (a beneficial stink bug)	1/2", shield-shaped, brown with tiny black spots, points on the shoulders.	Eats caterpillars and beetle larvae. Stink bug family.	"Spines" on shoulders distinguish it from plant-eating stink bugs.
Syrphid fly	1/2", yellow and black, or white and black stripes. Holds wings out to sides. Hovers.	Larvae eat aphids.	Attracted to tansy, yarrow, coriander, sunflower, buckwheat, alyssum. Fly lays eggs near aphid colony.
Tachinid fly	Similar to housefly, darker, with obvious bristles.	Parasite of beetle larvae, stink bugs, squash bugs. Each species is a specialist.	Especially like buckwheat, alyssum, corn, aster family.

Some Insect Pests of Vegetable Gardens in Santa Clara County

Common Name	Size, Appearance	Damage done/	IPM Control Methods
Aphids	Less than ¼", soft-bodied, many colors. Exude honeydew, which attracts ants who protect the aphids from natural predators.	Large feeding groups cause leaf curling, yellowing, distortion. Honeydew supports sooty mold. Can transmit viruses.	Encourage predators (larvae of lady beetles, lacewings, syrphid fly). Control ants. Do not overfertilize (succulent growth attracts aphids). Prune out or hose off. Cover seedlings.
Cabbageworm	Velvety green worm, 1". Butterfly is white with dark spots on wing. Eggs yellow, football-shaped, laid singly.	Eat irregular holes in leaves of cole crops.	Handpick. Rub off eggs. Encourage predators (tachinid flies, Trichogramma wasps). Cover crops to exclude.
Corn earworm	Various colors and sizes, always a golden brown head. Warts on back have hairs growing out.	Eat tomato fruit, corn, lettuce, beans,	Pick and destroy wormy produce. Bt for worms in tomato, lettuce, beans. For corn, 20 drops of mineral oil on the silk 3-7 days after silks appear.
Cucumber beetle (striped and spotted)	Chartreuse green to yellow orange with black dots or stripes. ~1/4" long, narrow.	Adults feed on leaves, fruit, stems of most veggies; larvae feed on roots.	Cover young plants, which are more likely to be seriously damaged. Handpick when possible.
Flea beetle	Tiny (1/16") shiny black or brown beetles that jump like a flea when disturbed.	Chew tiny holes in leaves. May devastate eggplant seedlings.	Cover small plants to protect. Larger plants can tolerate damage. Clean up debris, as adults overwinter.
Leafminers	Very small larvae of various small flies, beetles, moths that hatch from eggs laid inside leaf tissues.	Tunneling larvae cause unsightly tracks or blotches (mines).	Protect young plants with row cover. Pick off affected leaves as soon as you see the mines and destroy them. Rub off eggs (tiny, snow white, oblong, groups of 4-6, underside of leaf).
Mites (arachnids)	Very tiny, most not visible to naked eye, soft-bodied, round or wedge-shaped	Tomato russet mite: leaves brown and die. Spider mites and others stipple leaves.	Encourage predators. Spider mites: keep leaves free of dust by spraying with water. Russet mites: spray with wettable sulfur.
Snails, slugs (Molluscs)	Both leave slime trails.	Feed on seedlings, ripening fruit.	Remove resting places. Hand pick from plants at night or from resting places during the day. Copper foil barriers. Sluggo (iron phosphate).
Squash bug	Adult's body ¾" x ¼"; orange edges of abdomen seem to outline dark body. Nymphs light gray with black legs. Eggs shiny red-brown, oval.	Leaves develop yellow specks, vines wilt. Young plants can be killed.	Handpick. Crush eggs. Trap under boards and vacuum them up every day. Clean up debris as much as possible, as adults overwinter.
Stinkbugs Green stinkbug Harlequin bug Conspense stinkbug	Shield shaped, ~1/2" long and wide. Adults green, brown, or brightly colored. Nymphs are rounder, more brightly marked. Eggs barrel-shaped.	Pierce plant tissues and suck out cell contents, causing distorted fruit, blemishes, pinprick wounds, or leaf blotches.	Handpick . . . be prepared, because they move fast! Encourage predators (parasitic wasps, big-eyed bugs, tachinid flies).
Tomato Hornworm (Five-spotted Hawk Moth)	Very large (3-4") green worm with prominent horn on rear. Egg smooth, round, pale green, laid singly.	Eat entire leaves and small stems of tomato. May chew fruit.	Handpick. Encourage parasites (Trichogramma or Hyposoter wasps). Bt for very small larvae.

References:

Pests of the Garden and Small Farm, 2nd Ed.; Flint, Mary Louise, University of California Press
Natural Enemies Handbook, Mary Louise Flint, Steve H. Dreistadt, University of California Press.
 UC Integrated Pest Management website: ipm.ucanr.edu.