

GROWING TIMES

Growing Places Garden Project, Inc.

THE WEATHER:

FROM WWW.WEATHER.COM

Tuesday	89° high/ 67° low	
Wednesday	78° high/ 64° low	
Thursday	76° high/ 56° low	
Friday	77° high/ 59° low	
Saturday	80° high/ 61° low	
Sunday	84° high/ 64° low	
Monday	84° high/ 61° low	

Did You Know...

That peas can make your soil healthier? If you peas are finished producing, cut them off at soil level and leave the roots in the soil. They will break down and return valuable nitrogen (which is important for plant growth) to the soil during that process. Put cut pea tops on your compost pile.

TO DO THIS WEEK:

- √ Check for insect problems in your garden
- √ If your lettuce is starting to get tall and the leaves are starting to look like they are coming out of a stem, your lettuce is preparing to bolt. Pull it out and eat it as soon as you can.
- √ Plant bush beans in your empty lettuce and spinach square
- √ Harvest some radishes

HELLO GARDENERS,

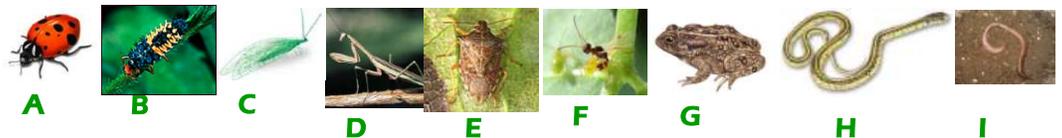
More questions have been coming in about pests, what they might be and what to do about them. Therefore, we're going to focus on some pest identification (both good and bad) along with some ways of protecting your crops from too much damage. Please note that while we talk about many pests here, you won't necessarily find them all in your garden—and even if you find some, they may not cause you any problems.

While we think our newsletters are a great general resource, this issue would be a good one to make sure you tuck in a safe place (maybe along with your Growing Guide) since it will probably be something you look at quite often!

Please let us know if you have any questions, issues, stories or thoughts.

Cindy and Kate

THE GOOD.... THERE ARE MANY CREATURE THAT ARE GOOD FOR YOUR GARDEN



Ladybugs (A) eat aphids which would suck the juices out of your plants. The ladybug larva (B), a very strange looking insect indeed, is also a large consumer of aphids in the garden.

Bees in general are required to help pollinate crops such as squash and tomatoes.

Lacewings (C) eat softbodied insects such as aphids, mealy bugs, small caterpillars and mites.

Praying Mantids (D) will eat any insect they can find.

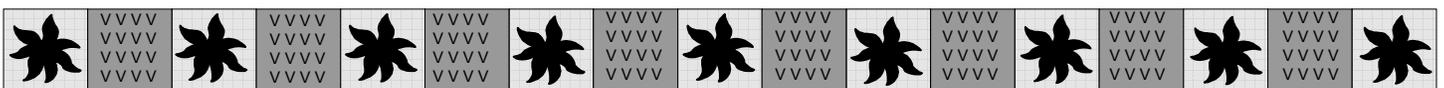
The **Spined Soldier Bug (E)** eats many caterpillars and beetle larvae including the Colorado potato and Mexican bean beetles.

Brachnoid wasp (F) consumes the eggs of over 200 species of moths as well as being a parasite to the dreaded tomato hornworm caterpillar. If you see these insects in your garden, be happy since they are probably doing their best to help keep your insect population under control naturally.

Toads (G) and **lizards** are also the natural enemy of a number of pest insects.

Even **snakes (H)** help by controlling mice and voles though we certainly do understand that most people aren't interested in having a snake hanging around. The most common snake around here is the common garter snake.

Earthworms (I) move soil around and help bring air to plants roots (yes, roots need air!) as well as adding back nutrients.



THE BAD....



Cucumber Beetle

Description: About 1/5" in length, yellow with black head and 3 black stripes on its back. Spotted version is about 1/4 inch long, yellow with black head and 12 back spots on its back. Found mostly on cucumber, squash and melons.

Damage: Chew on flowers, foliage and rinds of ripening fruit. Can transmit bacteria that causes the plant to wilt and die and can transmit cucumber mosaic virus.

Actions: Find and crush, plant radishes with squashes and cucumbers. Plant another crop for a fall harvest.



Squash Bug

Description: Adults are brownish black and 1/2" in length. Nymphs range in color from pale green to grey. They lay shiny bright orange egg masses on the underside of plant leaves. Most often found on cucumbers, melons, pumpkins and squashes.

Damage: Small yellow and pale green patches appear on the leaves that turn brown are caused by the bugs sucking the sap from the stems and leaves. Leaves can eventually wilt, dry up and turn black.

Actions: Hand pick and destroy adults and eggs. Trap by laying a board on the ground near squash. They will congregate there overnight and can be captured during the cooler part of the day and crushed, or drowned in a jar of water with a little cooking oil added to it. Spray plant with insecticidal soap. Plant radishes and nasturtiums around squash to repel the bugs. Plant another squash crop for a fall harvest.



Flea Beetle

Description: Tiny, 1/10" brown or black beetle that jumps like a flea when disturbed. Found on a wide variety of vegetables including beans, beets, broccoli, radishes, cabbage, eggplants, peppers, tomatoes, collards and cabbage.

Damage: Numerous small round holes found in the leaves which if the plant is very young, can result in a destroyed plant.

Actions: Use agricultural fleece to protect crops since flea beetles are most damaging in the early spring. Use a trap crop of radishes (which they really like). Plant extra if you want some for yourself to eat! Flea beetles prefer full sun so plant new seeds near larger crops that can provide shade.



Aphids

Description: Tiny, about 1/10" long with a pear-shaped body, long antennae and two tube like projections from the rear of the abdomen. They come in a variety of colors and affect many different plants. Ants are often present because of the sticky honeydew that aphids secrete.

Damage: Leaves will curl, pucker and turn yellow because the aphids suck juices from the leaves, fruit and stems.

Actions: Spray plants vigorously with water every other day in the early morning for a week or so. This shakes the aphids off the plants. Spray with insecticidal soap for heavy infestations. Luckily aphids have many natural predators including birds, ladybugs and lacewings.



Cabbage Maggot

Description: A small, white legless worm about 1/3" long with a blunt end. Found mostly on members of the cabbage family (cabbage, broccoli, collards, etc) as well as peas, radishes and turnip.

Damage: Plant will wilt during the midday heat and eventually die. Brown, slimy tunnels develop on the stem and roots where the maggot has entered the plant. Seedlings become yellow and the plant growth is stunted.

Actions: Plant vulnerable crops with a 3" paper collar around them (paper towel rolls work well) with 1" buried in the dirt and 2" above. Use agricultural fleece to prevent the adult flies from laying their eggs in the soil near the base of the plant. Plant turnips or radishes as a trap crop. Next year, plant cabbage family crops in a different garden bed.



Wire Worm

Description: A hard shelled worm, 1/3-1 1/2" long with a brown to yellow-brown jointed body found in the soil around the roots of the plant. Larvae bore into the seeds or plant roots either preventing germination or stunting and killing the plant. The can be found on most vegetable plants.

Damage: Plant will wilt, small plants may die.

Actions: Set a potato trap. Spear pieces of potato with sticks and bury 2-4" deep in the garden, leaving the part of the stick showing above the soil. Set traps at 3 foot intervals—wireworms will burrow into the potatoes to feed. Pull out after 1 week and destroy—replace as necessary.

AND THE UGLY....(AS WELL AS BAD)



Cut worms

Description: A fat grayish brown caterpillar 1-2 inches long that will curl up when disturbed. It feeds at night and hides in soil during the day. Favors tomatoes, eggplant and peppers but also found on beans, members of the cabbage family (broccoli, collards, etc), lettuce, radishes to name a few. Seen mostly in the early-late spring.

Damage: Your seedling may be totally eaten or is lying down in the garden with a severed stem or very little root left.

Actions: Plant vulnerable crops with a 3" long paper collar around them (paper towel rolls and milk cartons work well) with 1" buried in the dirt and 2" above. Or after planting transplant or when seed has germinated and grown a bit, stick a toothpick or matchstick in the soil against the stem (touching) - the cutworm must encircle the plant with its body to "cut" if off and the tough wood of the toothpick prevents it from being able to do this. Maggot mats, squares about 10 inches by 10 inches placed around plants (slit half way so slides around stem to reach middle of square) prevents fly from laying eggs on soil next to the plant. Carpet, tar paper or cardboard anything that survives some rains will do.



Tomato Hornworm

Description: Can get very large – 3-4 inches long and about the size of your finger; they have excellent camouflage – a light green color with 7 white and black V-shaped markings and a horn on the bottom. You can find them hiding under the foliage or blending in to a stem. Once you find one it will be much easier to spot any others. Sometimes you can even hear them chewing if you listen closely. Primarily found on tomatoes.

Damage: Holes in in the leaves or leaves that have simply been consumed, fruit that is partially eaten, and dark green or black droppings on the plant are all a good indication that these guys are at work.

Actions: Pick them off the plant and drop into a jar of soapy water or squish with your foot. Since they are hard to see, you can spray the plants with water—the caterpillars will thrash around so you can see them. If you find one with clusters of small white eggs on its back, leave it alone. Those eggs are from a parasitic wasp that will destroy the hornworm and then look for others to destroy. You can also spray plants with *Bacillus Thuringiensis* (BTK).



Cabbage Worm or Looper

Description: A green caterpillar with 2 white lines down it's back which can get up to 1 1/2" long. Found primarily on members of the cabbage family (broccoli, cabbage, kale, collards, etc). Small ball-shaped green droppings (poop) of are an indicator that these are on your plants.

Damage: Chews large holes in in the leaves and may destroy the entire plant if it is young.

Actions: Hand-pick and kill them (drown in water with salt or soap). Spray with *Bacillus thuringiensis* (BTK). After harvesting, soak produce in a salt water bath for 15 minutes (caterpillars will float to the top) and then rinse with fresh water. For a salt bath recipe, check the newsletter from 2 weeks ago (Issue 2).



Slugs and Snails

Description: Fat and slimy, brown to orange brown colored body 1-2 inches in length; snail counterpart has a shell on its back. Feed only at night and hide in moist dark places during the day. Can be found on any vegetable as they are not picky eaters.

Damage: Chew large ragged holes in the leaves, fruit and stems. Will often find trails of shiny, silvery slime on leaves and soil.

Actions: Refer to methods discussed in your Growing Guide. To make a beer trap, cut a 2-inch hole about two-thirds up the side of an empty margarine tub or plastic yogurt container. Bury the container so the hole is just above ground. Add 2-3 inches of beer (or a mixture of 1 tablespoon (Tbl) yeast, 1 Tbl flour, 1 Tbl sugar, and 1 cup water) and cover the container with its lid to seal the trap. Remove dead slugs daily – you might want to use a spoon. Plant marigolds which slugs love along your garden's border, hand pick slugs in late evening and dispose of them - aren't you glad that there were gloves in your gardening kit? Another thing to do is spread crushed eggshells around plants most affected—slugs don't like sharp edges. Toads and fireflies eat slugs!



Squash Vine Borer

Description: The larva are 1 inch long with a brown head and wrinkled white worm-like body. Adult moth is 1 1/2 inches long, looks like a wasp with a red body and black wings. Tiny dull red eggs are laid in late spring on the base of the plant, on the underside of leaves or near the base of the stem, larva emerge and bore into the stem of the plant. Found on squash and pumpkin.

Damage: Squashes start to wilt even if they've had enough water. Check the base of the plant for a hole that is filled with a yellowish material that resembles sawdust which indicates the presence of borers chewing

Actions: With a sharp knife, slit the infested stems lengthwise above the hole, find and destroy the borers. Cover the damaged portion of the stem with soil and keep the soil moist to encourage new roots to grow. Look for eggs and destroy. Shake black pepper on the ground around young squash plants—this is said to deter moths from laying eggs. Spray base of stems with *Bacillus thuringiensis* (BTK) once a week in late spring and early summer. Lay aluminum foil around the base of the plant as a mulch—moths can't locate the green plant due to the reflected sunlight. Wrap the stems of the plants with strips aluminum foil or old pantyhose. Plant another crop for a fall harvest.

AND LET US NOT FORGET...



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Japanese Beetle

Description: A large chunky green metallic beetle with bronze wings, 1/2" long.

Damage: Eats fruits and leaves of a wide variety of plants, leaves often look like skeletons.

Actions: During the cool hours of the morning, shake or knock beetles off of plants into a jar of soapy water and drown. Cover crops with agricultural fleece. Birds and spiders really like Japanese Beetles. Beetle traps are commercially available at Agway and other stores that

carry gardening items.

Terms and Other Information

Destroying eggs: Handpick or use a pair of tweezers to remove the eggs; destroy them by crushing the eggs or collecting them in a jar and then flushing them down the toilet.

Bacillus Thuringiensis: Often referred to as BT this is a commercially available bacterium that poisons, paralyzes and kills insects that eat it. BT is available as BTK, a version that affects caterpillar-type insects and is what we most often recommend for them. It has no effect on humans and will not harm beneficial insects that might be found in the garden. See the label for directions on use and ALWAYS KEEP ALL PESTICIDES OUT OF THE REACH OF CHILDREN. Found locally at Agway and many other garden centers.

Agricultural Fleece: A fabric barrier often called "row cover" that can be laid over the top of plants and seedlings to prevent flying insects from getting to the crop and destroying it. Must be anchored down with soil, stones, fabric staples or something heavy so insects can't fly under and wind won't carry it away. Note that bees can't get through it either so remove it when your plants start to flower.

Comes in lightweight for summer and heavy weight to protect against the frost in early spring and fall. Old sheets can be used but may be too heavy and cause too much of a heat buildup causing the covered plants to "cook". Available locally at Agway or can be found online at www.gardeners.com. Cheese cloth can be used as a substitute.

Trap crop: A crop planted specifically to attract a particular pest with the expectation that the pest will probably destroy it while leaving other crops alone.

Insecticidal soaps: Special solutions of fatty acids that paralyze pests when sprayed. They are effective for 1-2 weeks. For bad infestations, spray every other day. Available at garden centers.

ACKNOWLEDGEMENTS

Information courtesy of:

The Bug Book by Helen and John Philbrick
Rodale's Garden Problem Solver by Jeff Ball
Rodale's All-new Encyclopedia of Organic Gardening
by Barbara W. Ellis and Fern Marshall Bradley
Garden Insects of North America by Whitney Cranshaw
The Organic Gardener's Handbook of Natural Insect and Disease Control by Barbara W. Ellis and Fern Marshall Bradley
Organic Plant Protection by Roger B. Yespin, Jr.

Photos Courtesy of:

www.plantnatural.com
www.ecostudies.org/
www.greenlon.com/pestfaqs.htm
www.dept.physics.upen.edu
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www.hort.uconn.edu/ipm/veg/htms
www.apollos.net/arena/artemis/bugs

