

# Beneficial Insects in the Yard & Garden

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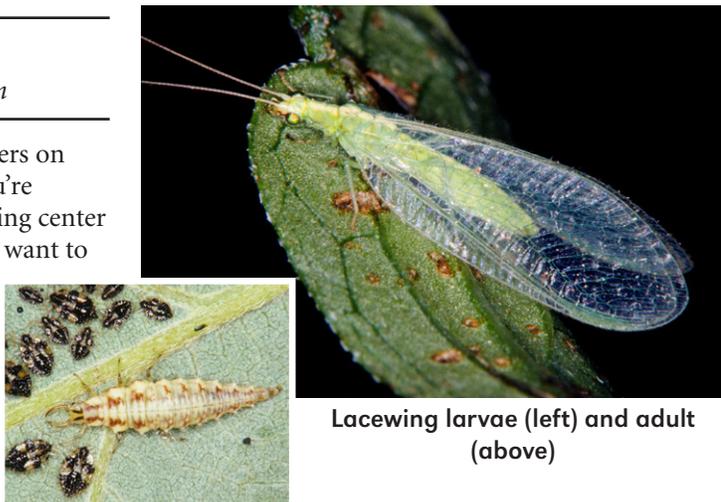
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If discovering a few loopers on your tomato plant means you're headed to the nearest gardening center to find a spray, then you may want to know there are a number of control methods that should be used before applying any chemicals. Chemical control for insect pests is a popular type of treatment since it is convenient, fairly inexpensive and it typically shows fast results. However, using insecticides which control a broad range of insects can be problematic if they also become detrimental to beneficial insects. When the number of predators is reduced, pests surviving the chemical application may be able to reproduce with very few natural control agents. Furthermore, the uses of chemical control may threaten human health if residues are left on food crops. Chemicals applied to larger areas such as fields or lawns could also potentially contaminate our water sources.

Rather than using pesticides as the only line of defense, smart gardeners also use cultural, biological or physical methods to control pests. Learn to recognize beneficial insects in your garden and provide adequate habitats for them. Some beneficial insects forage on flowers during their adult stage, so it may be helpful to

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Lacewing larvae (left) and adult (above)



Multi-colored Asian lady beetle



Carolina praying mantis



Damsel bug



Orb weaver spider



Wheel bug is a type of assassin bug

**Know how. Know now.**



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Many ground beetles are black but there are also metallic blue and green species.



Tachinid fly adult (left) and eggs (right) on a host caterpillar.



Ichneumonid wasp



Cricket hunter wasp

Photos by Jim Kalisch, UNL Entomology

plant a variety of plants that together will provide nectar and pollen from spring to fall. Using hay or straw as mulch around your vegetables can also provide a good habitat for spiders, which are important predators of many pests. Listed below are a number of beneficial insects you might want to get to know.

### Spiders (Aranae)

Spiders are not insects, but they are the most abundant group of predators present in the home landscape. They act as important biological controls for a wide variety of insects including, but not limited to, grasshoppers, crickets, moths and true bugs. The ability to create uniquely designed webs may be used to distinguish certain spiders including sheet web spiders, funnel web spiders and orb weavers. Although these creatures are usually associated with their webs, spiders such as the wolf spiders and the crab spiders actively hunt or use camouflage to hide from approaching prey. In this region of

the country, there are only a couple species of spiders that have toxins in their venom. The negative impact of spiders is certainly minor compared to the benefits they provide.

### Praying Mantis (Mantodea)

Mantids prey on a wide range of insects and are such avid predators that the female will eat the male during or after mating. This is possible because they have a long “neck” allowing them to move their heads 180 degrees. Many people make the mistake of destroying the mantis egg case because they do not know what it is. The egg cases are about the size of a quarter and look like many layers of cream-colored paper pressed together. They are typically found on branches or flat surfaces.

### Assassin Bugs (Reduviidae)

All assassin bugs are carnivorous and use their powerful forelegs to quickly capture their prey. After

capturing their prey, assassin bugs use their rostrum, or beak, to inject a poison causing paralysis and liquefies the contents inside. Then, the beak sucks up the liquefied contents of the prey. These beneficial insects are best left alone since they may bite, and although they are not poisonous, their bite can be very painful.

### Damsel Bugs (Nabidae)

Damsel bugs have long slender bodies with enlarged forelegs for grasping and slender back legs allowing them to move quickly. These predators tend to prefer soybean, alfalfa and grassy fields. However, they can be found in the garden, where they prefer low-growing grasses and ground covers.

### Lacewings (Chrysopidae, Hemerobiidae)

Lacewings are effective predators in both the adult and larval stages. The larvae are such voracious feeders they can consume more than 200 insects

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each week. The two major families of lacewings are green lacewings (Chrysopidae) and brown lacewings (Hemerobiidae). Of the two, green lacewings are more commonly found in yards and gardens.

### **Ant Lions (Myrmeleontidae)**

Ant lion larvae use the unique method of building a pit to capture ants and other small insects. After digging a pit, the larva sits at the bottom with its jaws open, waiting for its prey to slide into the trap. These pits are constructed in dry sunny locations that have sandy soil and protection from rain and wind. They are most commonly found along buildings where they are protected by the eaves of the roof.

Adult ant lions somewhat resemble damselflies and are only active during the night.

### **Ladybird Beetles, Ladybugs (Coccinellidae)**

Many people believe all ladybugs are of the same species. However, there are approximately 350 species of ladybugs in North America alone. The name of this insect originated in England as “ladybird” after the Virgin

Mary and later evolved into “ladybug” in the United States. The majority of ladybugs are predators both as adults and larvae, and their prey include a wide variety of small insects.

### **Ground Beetles (Carabidae)**

These insects get their name by their poor ability to climb. Nearly all ground beetles spend their time under leaf litter and other debris on the ground. Both the adult and larva are predators of a wide variety of pests. The hard wing covers of the adult are typically shiny, black and ridged. However, some species may be brightly colored or metallic.

### **Tachinid Flies (Tachinidae)**

The larvae of all tachinid flies are internal parasitoids. Hosts vary greatly, but the majority of tachinid flies are parasitoids of caterpillars and beetle larvae. There are three basic ways in which the larvae enter the host: 1) eggs are laid on the leaves of the plant, and, after the eggs hatch, the larvae are ingested by the feeding host; 2) eggs are glued to the host and the larvae penetrate the host's body; 3) the female uses her piercing ovipositor

to insert the eggs directly into the host's body. Adult tachinid flies often resemble house flies, but are usually larger, hairier and more robust.

### **Wasps (Hymenoptera)**

While some wasps are capable of becoming a nuisance, most do not pose a problem, and instead, act as a major biological control for many yard and garden pests. Social wasps, such as paper wasps, form colonies and feed their larvae live prey. Hunting wasps are solitary insects, which construct their nests underground, in the pith of plants or with the use of mud. The females carry the captured prey to the nest where it is used as a food source for developing larvae. Examples of hunting wasps include the cicada killer and steel blue cricket hunter. Ichneumonid wasps are interesting insects able to use their antennae to detect caterpillars and other larvae within the wood of trees. After detecting the host, the female drills her ovipositor, or egg-laying device, into the wood and injects an egg near or directly into the host's body. The larvae of the ichneumonid wasp then feed on their host as they continue to develop.