

Yard and Garden Predators

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The first time I saw an assassin bug in my garden, my first impulse was to kill it or immediately run the other way. It was a fierce looking little monster, different than any I had seen before in my relatively new garden. We were in the midst of Master Gardener training, and our previous class was on bugs. We learned that one of the first steps in controlling garden pests was identification. So I decided to figure out what it was before engaging in battle. Besides, it had a shiny iridescent gleam to it—maybe more interesting than frightening.

Indeed the assassin bug (Hemiptera Reduviidae) is one to be welcomed to your garden. They are predators of other bugs, rather than humans, although if interfered with they can deliver a nasty bite. They prey very efficiently on many other bugs including caterpillars and roaches. In turn they are prey for birds, rodents, praying mantis, spiders and other assassin bugs.

There is a potential army of predators ready and willing to help you get control of the pests that prey upon your flowers, shrubs, herbs and vegetables. Some of the obvious ones are birds, toads, and various types of lizards including the ubiquitous green anoles common to our area which are often called chameleons, as well as the Cuban brown anoles now making an appearance.

We are often less aware that there are many, many insect and spider predators which prey upon their fellow bugs. It has been said that over 90 percent of insects are “good” bugs—either beneficial or harmless-- while less than 10 percent are harmful to humans and plants.

Identification of the pest which is damaging your plants is one element in integrated pest management (IPM). This isn't always easy. Different developmental stages of an insect often look entirely different or resemble other insects. Many times just one stage of an insect will act as predator, while the adult stage feeds on nectar and becomes a pollinator. And there are many good/bad lookalikes. Our most aggravating garden pest, the stink bug, has a predator cousin, the soldier bug, and an aphid-eating ladybug is similar a Mexican bean beetle. The UF Insect ID Lab websites <http://entnemdept.ufl.edu/creatures/> and <http://entnemdept.ufl.edu/insectid/>) are very helpful and insect samples can be taken to your local UF/IFAS extension office for identification. See: <https://edis.ifas.ufl.edu/sr010>

Once you have identified your pest, you can pursue two avenues—controlling or discouraging the pest, and encouraging its predator enemies, both elements of IPM. To learn more about IPM see https://edis.ifas.ufl.edu/topic_pest_management

IPM strategies include

- Pest Monitoring—Check your plants frequently, identify problems, and understand the life cycles of the pests as well as the plants and conditions they prefer.

- Cultural IPM—Proper selection and maintenance of your plants. Incorrect watering and fertilization make your plants more susceptible to pests and diseases. You should also determine your level of tolerance. Is the damage reducing your yield or a major detraction in your landscape? Hand picking and destruction of mild infestations as well as eggs and larvae may be enough in some instances.
- Biological IPM—Encouragement of natural enemies and beneficial organisms and cultivation of trap plants. Trap plants are those which are more attractive to the pest than those presently in your landscape. They can be cultivated to help with early detection of an infestation and to lure pests away from your plants.
- Genetic IPM—Selection of naturally resistant species and hybrids when you plant. The controversial genetically modified (GMO) plants fall in this category.
- Chemical IPM—As a last resort, treatment with chemicals starting with natural products and spot treatments, targeting the pests you are attempting to control. Most chemicals, even natural products, are not selective in what insects they destroy. Good bugs, including pollinators, may be destroyed along with the bad bugs.

Some common insect predators are:

Spiders—the most abundant predators in your garden. Their primary diet is insects. Some use webs, but others like wolf spiders and jumping spiders are hunters, stalking their prey and consuming a large volume of insects, including other spiders.

Wasps—parasitic wasps lay eggs in beetles, caterpillars, aphids, and other insects, using them to feed and house their young, killing the hosts in the process. The adults also pollinate plants by feeding on nectar, and some feed on other insects including beetle larva, caterpillars, and cicadas.

Hoverflies—often mistaken for bees or wasps. Hoverfly larvae feed on aphids, while adults feed on nectar and act as pollinators.

Lacewings—Larvae feed on other insects including aphids, cabbage worms, whiteflies, mosquitoes and beetles.

Assassin bugs—There are over 100 varieties in the US. They feed on a wide variety of insects, harmful as well as beneficial. They are sneaky attackers, hiding in mulch and jumping on their prey.

Beetles—Ladybeetles feast on aphids. Ground beetles can help control slugs, caterpillars, Colorado potato beetles, corn earworms, cutworms, and squash vine borers. Well-tended perennials which are watered during dry weather will help retain beetles in your yard. Stack some wood nearby to provide habitat, or they can be gathered from rotting logs or a wood pile and transferred to the garden.

Finally, to encourage predators to hunt in your garden, a few simple ideas:

- Provide a water source--Many insects as well as birds are attracted to a bird bath, even a bowl of water on the ground and some rocks will work (so the insects can reach the water without drowning).
- Provide habitat--Install birdhouses suitable for the birds you want in your garden. Prop a few clay flower pots upside down to provide shelter for toads. Mulch around plants and between rows to provide habitat as well as conserve moisture and discourage weeds. Hang a can (try a two pound plastic coffee can) upside down on a stake at a safe distance

from the garden to provide a place for wasps to nest. Provide flat stones or boards for ground-dwelling predators to hide under. Allow some grasses and, dare I say, weeds to grow near your garden or plant ornamental grasses to shelter spiders and other good bugs.

- Provide nourishment-- Grow nectar plants to attract pollinators and provide food for predator insects which have a pollinator phase, particularly plants with small flowers or easily accessible pollen and nectar such as those in the carrot, goldenrod, and daisy families. Determine what plants your pest prefers, and plant them as trap plants at a distance from the plants you are trying to protect. If you have an aphid infestation, spray a light sugar solution on your plants to simulate aphid honeydew which will attract more lacewings and lady beetles.
- Be cautious and selective with insecticides to avoid eliminating the food source for predators.

Insect pests will always be with us. It's a much better idea to harness the potential of their natural predators when possible, than to fight the never-ending battle on our own.

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