

The Good, the Bad and the Ugly Bugs

Are those good bugs or bad bugs lurking in your garden? Before you spray, find out if that creepy-looking bug is really a hazard to your garden.

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In this article ...

Page 1

The Rogue's Gallery

Centipedes and Millipedes

Integrated Pest Management

Flying Stingers

Worms: Green, Brown and Invisible

Page 2

Grubs

Grasshoppers, Katydid and Crickets

Lacewings and Preying Mantids

Beetles

Buying Bugs

The True Bugs: Aphids, Whiteflies, Mealybugs and Scale

Moths and

Butterflies

Spiders

Bugs can be classified into two general categories: bugs that eat plants

and bugs that eat other bugs. While it would seem that having no bugs in a garden is a good thing, this isn't necessarily so. We need some bugs in the garden to pollinate plants and others to break down plant debris so those resources can work their way back into the soil equation.

A lack of healthy predators leaves a garden open to the invasion of a pestiferous species. In fact, the best protection against pest outbreaks is having a preestablished resident bug population.

For a gardener, it's important to know a bit about bugs in order to understand which creepy crawlies are helping your garden and should be encouraged, and which harmful creatures are undesirable and should be discouraged.

Spiders, for example, have an undeserved reputation. These active hunters eliminate many of the harmful insects that appear in gardens, but nevertheless, people usually kill spiders whenever they encounter them. Butterflies, on the other hand, are considered lovely, wonderful creatures, but in actuality, the eggs of butterflies often contain insatiable plant eaters like cabbage loopers and tomato hornworms.

So, yes: Bugs are both good and bad, but even the bad ones aren't usually a persistent nuisance or a real danger to the garden. Gardeners can learn how to roll with the punches and surf the ever-changing waves of different bugs that appear in their gardens by understanding when to remain calm and when to take action. A calm and educated gardener is a better surfer.

The Rogue's Gallery

Strictly speaking, "bugs" are solely members of the insect order Hemiptera. However, in the context of this article, any crawling, flying or wriggling creature will be called a "bug."

Top

Centipedes and Millipedes

These two bugs look similar because both have a lot of legs, but it's easy to distinguish the round-bodied millipedes from the flat-bodied centipedes. Millipedes, the round ones, are slow movers and eat mostly decaying plant materials; however, sometimes they munch on young seedlings. Millipedes are such slow crawlers that picking them up and throwing them away from a bed of seedlings is probably the best eradication strategy for gardeners. Millipedes won't bite, but they might stink a bit; when threatened or handled, they emit a musky smell that can stay on a person's hands for a few minutes.

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Integrated Pest Management

Good nutrition not only helps a plant grow bigger fruits, it also helps a plant maintain its own self-defense mechanisms. A well-fed plant repulses bug attacks and heals wounds more quickly. Integrated Pest Management (IPM), so popular among agribusinesses these days, is all about knowing what bugs are in the field and what real risk they pose. Organic farmers need to apply the same methods and study the bugs in their gardens. Knowing how to achieve a self-regulating fauna balance is another aspect of IPM; farmers often leave untilled swaths with the intent that these areas will house an active bug population. The key to encouraging a healthy fauna population in a garden is to have a highly heterogeneous plant population that includes large amounts of both wild and cultivated plants.

Plants in the carrot family all have umbel-shaped flowers that are known for attracting beneficial predators. Carrot family plants are attractive to pollinators as well, so one will get more protection and pollination for their garden plants if there are some umbelliferous plants in the vicinity.

Top Centipedes are flat, fast movers and tireless hunters of plant predators; they don't receive the admiration or thanks that they deserve. Everybody seems to remember the National Geographic articles about the big, poisonous centipedes in Asia, but they don't realize that centipedes are unequivocally good for gardens. These crawling hunters feed on all sorts of other bugs in the garden. As long as you keep them out of your house, there shouldn't be any problems with these creepy-looking creatures.

Top

Flying Stingers

Flying insects with stingers are some of our least favorite; we tolerate bees because they pollinate our plants. They can sting if backed into a corner or sat upon, but they do a lot of good in gardens; any farmer is lucky to have these creatures among their crops.

In addition to the European Honey bee, our gardens can be visited by a variety of other bees. Native bees, both social, like bumblebees, and solitary, like mason bees, are still fairly plentiful in gardens that offer a wide range of flowering plants. The one species that damages plants, the leaf-cutter bee, is not very destructive and not worth the fight.

The stars of the stinging category are the predatory wasps. These hunters prey upon a range of garden pests, usually attacking grubs and larvae. Some of these colorful wasps don't really even have stingers, like the Trichogramma wasps that assault moth eggs and caterpillars; Ichneumon wasps that prey on flies and beetles; and Aphidius wasps that prey on aphids. All of these wasps are so valuable that they're among the most frequently sold beneficial insects. Although there are a growing number of physical retail locations where beneficial insects are sold, the Internet is the most easily accessible for the majority of people (see "Buying Bugs" on page 72 for some online resources).

Hover flies, which aren't actually related to bees or wasps, look like a bee, and are identifiable by their repeated bobbing and hovering. These are valuable bugs to have in the garden because the adults are active pollinators and the larvae seek out aphids.

Top

Worms: Green, Brown and Invisible

In worm talk, green means bad. All of the green worms that crawl on plants are bad news. Cabbage worms, inchworms and the huge tomato hornworms are well-known worm pests. These annelids are impressive eaters; whole plants can be stripped in just a few days. Twelve of these hungry beasts, or their more colorful caterpillar cousins, can wipe out a whole row of cabbage or tomatoes. Attentive gardeners know when worms appear in their garden and often treat them using beneficial bacteria such as *Bacillus thuringiensis* (Bt), readily available at nurseries.

Earthworms are always good, but the most numerous worms in the soil are the tiny, barely visible nematodes. Nematodes come in two forms: The more numerous type are predatory on animals, while the other species attack plants by burrowing into roots. While a gardener doesn't see nematodes, one can practically sense their presence in soil that is rich with good texture. It's a good idea to keep soil nematode populations healthy and happy, as they themselves provide the best protection against pestiferous nematode outbreaks. You can do this by reducing your use of pesticides and keeping the organic fraction high.

[Top](#)

[Next Page](#)