

# Gardening for Beneficial Insects

Nature abounds with beneficial insects that can help us battle the bad bugs in our gardens. And all gardens have plenty of 'bad' bugs in them! However, by providing the right conditions for beneficial insects, such as nectar and food sources, we can provide non-toxic, biological control of those bad bugs.

## Know your good bugs!

The good bugs don't necessarily look that different than bad ones to the novice gardener. A good way to start is to get a hand lens (at least 10x) and a picture book on insects and go out into the garden in spring and summer. If you have not used pesticides in your garden and if you have a selection of flowering plants in the garden, chances are you will find you have an army of allies already at work. Beneficial insects can be divided into two groups: those that eat their prey directly (predators) and those that deposit eggs into or on their target host (parasitoids). Below are some descriptions of the most important beneficial insects. For more information and pictures, please go to the websites listed at the end of this article.

*Lady Beetles* – Everyone loves ladybugs, (more properly called lady beetles as they are not true bugs), but gardeners are passionate about them. Lady beetles eat all sorts of pests including aphids (an adult ladybug will eat as many as 50 aphids a day), scale, thrips, mealybugs and mites. In your desire to rid your garden of pests, don't make the mistake of killing the lady beetle's larvae! They look like small black alligators with orange stripes and they eat as much or more as an adult lady beetle; a hatched larva will eat 400 aphids.

*Ground Beetles* – These beetles are dark-colored with a metallic sheen. They generally come out after dark to hunt prey, so unless you happen to discover one under a rock, you won't see them. But as with other species, it's the larva that does most of the work, as it develops in the soil and preys on a diet of slugs, root maggots, cutworms and other ground-dwelling pests.

*Soldier Beetles* – These long-bodied beetles show up in the garden in early spring and feed on aphids, caterpillars and grasshopper eggs.

*Green lacewings* – Adult lacewings feed on pollen and nectar. However, the green lacewing's larvae are voracious predators of aphids, caterpillars, mealybugs, leafhoppers and white flies. Up close, the larva looks like a tiny alligator, not at all like its parent. A steady supply of flowering plants should keep lacewings in your garden.

*Syrphid flies* – These can often be mistaken for wasps or bees due to their yellow and black markings. However, like all flies, they have two wings instead of four.

Syrphid flies are also called ‘hover flies’ as they tend to hang in the air. The maggots do most of the work, eating up to 60 aphids a day. As an added benefit, the adults act as pollinators in the garden.

*Pirate Bugs* – The larvae of these tiny bugs (less than 1/8” in length) devour aphids, whiteflies, thrips and mites. They have a distinctive black coloring with a white chevron pattern on their backs, but you’ll need a lens to see them.

*Assassin Bugs* – This bug feeds on everything from caterpillars to beetles, using trickery and disguise to capture its prey. But be careful.... they pack a mean bite.

*Damsel Bugs* - You wouldn't expect a bug with such a nice name to be such a voracious predator, but in this case, both the adults and the larvae are effective. Adults feed on aphids, caterpillars, thrips, leafhoppers and other soft-bodied insects. The larvae feed on small insects and their eggs. Their brown coloring, similar to that of the assassin bug, allows them to blend in.

*Parasitic Wasps* – These tiny bugs are dangerous.... but only to other bugs. They lay their eggs in or on corn earworm, tomato fruitworm, cabbageworm and tent caterpillars, as well as aphids. When the eggs hatch, the larvae eat their way out of the aphid or caterpillar.

*Dragonflies* – These beautiful insects can consume up to 300 mosquitoes a day.

### **Make them feel at home in your garden!**

In order to keep beneficial insects in your garden, it's important to provide them with the food, water and shelter they need... a small birdbath or saucer of water with pebbles and stones for them to land on to drink, a constant source of nectar with flowers that bloom at different times of the year, and the soil organic matter such as mulch covering the soil to provide shelter and protection from their predators. Most importantly, you should use no harmful chemicals in the garden. If you spray pesticides to control pests, chances are you will eliminate the beneficials as well. When you switch from pesticides to biological control, you may experience an upswing in pests for a bit as it takes time for the population of beneficials to expand to take on the new workload. In the meantime, you can opt for alternatives such as neem oil or insecticidal soaps to help control the problems, which are safer than most traditional pesticides. However, be aware that these can also damage the beneficial

population and should be used sparingly. Once the population of ‘good’ bugs gets big enough, you will be amazed at the speed at which they reduce the pest population.

### **Planting for Beneficials**

Creating the right mix of nectar sources for the adult populations of beneficial insects is an imprecise science. However, there are a number of flowering shrubs, perennials and grasses that can be planted to provide a mix of nectar and pollen sources throughout the year. Intersperse some in your vegetable beds as well. On the website listed below you will find a list of plants that will provide nectar sources throughout the year.

No gardener should be discouraged by the sudden appearance of pests in the garden. Patience will usually be rewarded by a new wave of beneficial insects drawn by the siren call of their prey!

### **Websites for additional information and photos**

[http://ucanr.org/sites/scmg/Beneficial\\_Insects/](http://ucanr.org/sites/scmg/Beneficial_Insects/) <http://www.ipm.ucdavis.edu/>