



“Ladybug”

Beneficial Insects



“Lacewing”

Biological control is the management of pest populations by the use of natural enemies known as beneficial insects. Beneficial insects are classified either as predators (organisms that control the pest by eating it), or as parasites (organisms that live in or on the pest until its death). Predators are usually general feeders which work on many pests. Parasites are specific, usually able to control only one target pest. The use of biological controls in the garden works to reduce pest populations to an acceptably low level. Most crops can tolerate a substantial amount of damage to foliage before yields start to decline.

Home gardeners can easily adopt an effective pest management strategy by attracting and protecting beneficial insects. Although gardeners can buy some beneficial insects, the selection that can be purchased is nothing like the huge variety available in nature.

Aphids are a common pest in many gardens but they have lots of enemies. Common predators of aphids include the slug-like larvae of flower flies, which are beautiful black and white or black and yellow flies that hover like helicopters over flowers. The small, bright orange larvae of predatory midges feed on aphids, as do ladybugs and their larvae. Aphids occasionally fall victim to the ferocious larvae of the delicate green lacewings and to such general predators as assassin bugs, minute pirate bugs, dance flies and big-eyed bugs. Tiny parasitic wasps that inject an egg into each aphid are common and widespread. The parasitized aphids are easy to find because they turn into black or silvery brown rigid mummies as the young wasps develop inside.

Of course, there are many pests in the garden besides aphids, and fortunately, there are many more native predators and parasites as well. In the upper layers of the soil reside the predatory beetles including large ground beetles, rove beetles, hister beetles, tiger beetles, and fireflies (which are really beetles). Both larvae and adults feed mostly on snails, slugs and insect larvae while the leathery winged soldier beetles eat aphids, caterpillars and other small larvae.

The first step to enticing predators to colonize a garden is to stop using pesticides. Beneficial insects are much less resistant to pesticides than are pest insects. Even botanical pesticides such as rotenone and pyrethrum kill both pest and beneficial insects.

The next step is to design and plant your yard or garden so it contains perennial beds or areas that remain undisturbed each year. Keep uncultivated areas as sod-covered or mulched pathways through the garden to give refuge to ground-dwelling predators and provide a stable habitat from year to year so their populations can build up.

A profusion of flowering plants, especially those with small flowers rich in nectar, is necessary to attract beneficial flies and wasps to the garden. It is the larvae of most beneficial species that are predators, not the adults. The adults need pollen and nectar to sustain them and enable them to lay the maximum number of eggs. Particularly attractive to these adults are members of the mint family (lemon balm, pennyroyal, thyme), the carrot family (dill, parsley) and cabbage family (radishes, mustard, broccoli) that have been allowed to bolt. Many weeds are also attractive to predatory insects including Queen-Anne’s-lace and milkweed that provide nectar.

Herbs interplanted among the vegetables do not necessarily repel pests (many pests have very sophisticated sensory equipment for locating their host plants), but the herbs attract the pests’ natural enemies to the garden.

One last attraction that can be added to complete this beneficial insect paradise is an “insect bath.” Set up a small birdbath and build up gravel islands in the water so insects can drink without drowning during the hot, dry days of summer. Providing a stable habitat from year to year and an attractive food and water supply for adults will entice many beneficial insects to your garden.

For More Information on Capital District Community Gardens’ programs or to make a tax-deductible donation contact:



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