Beneficial Insects

Only a few of the world's 750,000 known insects are worthy of the label "pest". Most are harmless, and some are beneficial. So the next time you spot an unfamiliar critter in your garden, consider it innocent until proven guilty. Beneficial insects provide a number of essential services including pest control, pollination and the break down of decaying matter.

Attract and Protect

Beneficial insects will help you attain great garden success with minimal or no chemical use. Follow these guidelines to attract and protect these allies:

- Fill a shallow birdbath or dish with stones and water so tiny beneficial insects can drink without drowning.
- Attract adult insects with a variety of nectar and pollen-rich plants including herbs (e.g., fennel, dill and parsley) and flowers of the daisy family (e.g., cornflower, coneflower, sunflower, and coreopsis).
- Leave some weeds in your yard including lamb's quarters, Queen Anne's lace and dandelion for food and shelter. Dandelions are especially important as they play a part in the ecology of 93 different insect species.
- Avoid chemical pesticides and fertilizers as well as botanical insecticides that kill the good insects with the bad. If you must use these products, spot-spray instead of broadcast spray.
- Plant hedges and windbreaks to protect beneficial insects from dehydrating dust.
- Minimize tillage to protect the habitat of soil insects and animals.
- Establish permanent walkways and perennial beds, apply mulch and allow some leaves to remain where they fall for year-round shelter.
- Top-dress lawns and gardens with finished compost to enrich soil life.

What is Pollination?

Pollination is the transfer of pollen from a stamen (male part of flower) to a pistil (female part of flower). About 80 per cent of flowering plants are dependent on insects, birds and even some bats to help them transfer pollen. While bees are the most recognized insect pollinators, flies, moths, butterflies, wasps and beetles also move pollen about.

Different insects have different feeding preferences. For instance, bees seek out blue, purple, white and yellow flowers instead of red ones because they cannot see red. And while small bees require open flowers with easily accessible nectar, larger bees feed on more complex flowers. Choose your plants with these differences in mind so that a variety of pollinators are attracted to your garden.

Source: Gardening for Pollinators by Canadian Wildlife Federation

The Usual Suspects

Below is a list of beneficial insects commonly found in gardens. The larval (immature) form of most of these species differs greatly from the adult form. Familiarize yourself with the appearance, diet and shelter requirements of all life stages.

ladybugs *(ladybird beetles)*

Adults range in colour from pale yellow to red to black and are often spotted. They are attracted to angelica, tansy and scented geraniums. Larvae look like spiny alligators. Both adults and larvae feed voraciously on small soft pests such as aphids, scale insects, mealy bugs and spider mites.

lacewings

The pale green or brown, alligator-like larvae prey on aphids, scale insects, whiteflies, small caterpillars and thrips. Adults have jewel- like bright eyes and large, somewhat iridescent green or greenish yellow wings with fine veins. They feed mainly on flowers including Queen Anne's lace, wild lettuce, golden-rod and tansy.

tachinid flies

These large, dark grey flies resemble house flies except for the long stout hairs on their hind ends. Female flies place their eggs on cutworms, sawflies, stinkbugs and other pests. Adults are attracted to pollen and nectar plants including bee balm, comfrey, black-eyed Susan and butterfly bush.

aphid midges

The larvae of these midges look like tiny orange maggots. They voraciously consume aphids and are sold commercially to orchards and greenhouses to do exactly that. The delicate long-legged adults feed on the honeydew left by aphids.

syrphid flies

Also known as hover flies or flower flies, these black-and-yellow/white striped flies resemble wasps but do not have stingers. They are attracted to bee balm, butterfly bush, marigold and members of the daisy family and are highly-effective pollinators. Most of these flies are predacious. Females lay their eggs in aphid colonies so that the greenish-grey larvae that emerge may find food right away.

true bugs

This is the common name for insects in the Hemiptera order. Members of this order have needle-like beaks for sucking fluids and leathery wings crossed flat over their backs. Immature insects closely resemble adults. While some are garden pests, many others are allies. Assassin, ambush and minute pirate bugs prey on the tomato hornworm, thrips, leafhopper nymphs, corn earworms and a great number of other pests.

ground beetles

These large, iridescent black beetles hide under rocks and logs during the day and move quickly when disturbed. They live in the soil and eat a variety of pests including slugs, snails, grubs, cutworms and root maggots. They are attracted to perennial groundcovers, logs and stones.

parasitic wasps

Adults of these mostly tiny and non-stinging wasps are attracted to members of the carrot and daisy families, strawberries and clover. Females inject their eggs into or onto pests such as aphids, flies, beetles and many caterpillars. Larvae grow by absorbing nourishment through their skin.

spiders

Although not insects, spiders are often grouped with them. Some of the best predators in the garden, spiders catch their prey in webs or leap on their prey using silk thread as a dragline. Common garden spiders do not move indoors come fall and are nonpoisonous.

earthworms

Earthworms, also not insects, are highly beneficial in gardens as well. Referred to as "nature's plow", earthworms aerate and enrich the soil. Worms are highly sensitive to chemical and physical changes, so avoid synthetic pesticides and fertilizers and minimize tillage.

Additional resources

- Canadian Wildlife Federation – Wild about Gardening **www.wildaboutgardening.org**
- Cornell University – Biological Control **www.nysaes.cornell.edu/ent/biocontrol**
- Good Bugs for your Garden by Alison Starcher, 1998
- The David Suzuki Foundation – A Guide to Toronto's Pollinators **www.davidsuzuki.org**
- The Organic Gardener's Handbook of Natural Insect and Disease Control by Rodale Press, 1992

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