

Beneficial Insects

Grow with USask



Not all of the insects that are found in your garden are harmful to your plants. In fact, several insects provide valuable contributions such as pollination or predation of harmful pests. These insects are referred to as beneficial insects and can be manually introduced into a habitat or naturally attracted by growing pollen and nectar plants nearby.

Bees

What would we do without bees? A key plant pollinator, bees are critical to producing the world's food supply. Prairie farm crops like canola, alfalfa, sunflowers and buckwheat would not exist without bees. Home gardeners who grow flowers, fruits and vegetables also need bees to pollinate their crops. While bees are busy collecting nectar from flowers, they pick up pollen which is transferred to the next flower they visit. The result is pollination and later on, a rich harvest of seeds, fruits and vegetables. Honeybees also reward us with delicious honey flavored with the nectar of their favorite plants.

There are at least 800 native species of bees in Canada. Honeybees (an introduced species) normally nest large numbers in hives, while wild bees are solitary, preferring to rear their young in tiny ground nests, beetle chambers, hollow twigs or holes in logs, depending on the species.



Honeybee



Bumble bee

How to keep bees safe and happy

Bee populations are impacted by the use of insecticides (neonicotinoids in particular), the loss of habitat and food sources, climate change, as well as certain parasitic mites and other diseases. Biodiversity in our gardens is a delicate balance. Here are some things home gardeners can do to help bees:

- Never use insecticides or herbicides. Home-made concoctions made of borax, tobacco or other household chemicals are just as toxic to bees as commercial products.
- Plant a variety of flowers, fruits and vegetables. Include some native species too. Select a variety of plants so that there are blooms at different times in the growing season. Avoid double flowering varieties as the extra flower petals come at the expense of the nectary so these types of flowers have little value to pollinators
- Offer bees a source of water, especially during our hot Saskatchewan summer months. If you don't have a bird bath or water feature in your yard, a shallow dish filled with pebbles and topped with fresh water will do the trick.
- While mulch and other groundcovers offer important beneficial insect habitat and weed control, leave some areas with loose soil bare in a protected, sunny spots for our native ground-dwelling bees. You will get weeds

- but handpick them. A bit of leaf litter is valuable in these areas but don't leave so much that it prohibits digging!
- Carpenter bees like to have a source of softwood available to strip or tunnel into for nesting. They will happily help themselves to your untreated decking materials, with no serious harm to the deck. Consider leaving a few small chunks of untreated softwood, such as inexpensive pine lumber, laying in an inconspicuous area.



Carpenter bee

A sampling of plants that bees love

Variety is key to attracting bees to your garden, so go ahead and plant your favourites. Include some native species too. If you like growing vegetables, then you need bees to ensure a bountiful harvest.

Some plants are magnets for bees such as summer flowering annuals like borage, bee balm, heliotrope, sweet clover and lavender. Perennials such as our native prairie crocus, chives, joe pye weed, rudbeckia, hyssop and salvia also fit the bill. Be sure to include one or two spring flowering fruits in your garden: raspberry, cherry, apple, chokecherry, plum and Saskatoons are delicious as far as bees are concerned.

Bees need to feed in early spring too. It may surprise you that early-blooming willow is a major food source for bees. Has-kap and forsythia are shrubs that also bloom early. Finally, there are those pesky dandelions that grace our lawns just as the grass is greening up. We're not suggesting that you grow a crop of them, but at least they are good for something. Bees just love them and this is another reason to keep herbicides off your lawn.

Late summer blooming sunflowers, chrysanthemums and asters complete the season to keep bees fed until fall. Almost any flowering plant you grow in your garden will benefit bees. The lone exception to this are the double flowering varieties of your favourite plants. Double flowering varieties have twice the number of petals as the typical flower. For example, lilies typically have six petals but the double-flowered lily has 12. Double flowering plants tend to have inconspicuous or inaccessible reproductive parts so they are not useful to bees and other pollinators.

Leafcutter bees need leaves that are pesticide-free to build nests. If you see leaves with perfect circles on them and no obvious chewing marks, blame the bees not your (hopefully beneficial) caterpillars!

Dragonflies and damselflies



Dragonfly, Odonata anisoptera

Seeing these gorgeous creatures in flight in the garden is a magical experience. Nimble and agile, their translucent wings shimmer above their distinctive long abdomen which ranges from iridescent blue to metallic green, depending on the species.

They are abundant in Saskatchewan: 52 species of dragonflies and 28 species of damselflies have been observed here.

These are beneficial insects you want in your garden: they are top predators when it comes to hunting and killing insects. The adults eat midges, moths and mosquitoes, to name a few. The larvae eat aquatic eggs, larvae and insects – larger dragonfly larvae will even feed on tadpoles and tiny fish.

They lay their eggs in still or running water in spring and their populations do well in wet years when sloughs are full.

Dragonflies and damselflies will also hatch out in ponds and water features in home gardens. Include one or two marshy standing plants in the pond to provide habitat for dragonflies and damselflies to lay their eggs.

A word of caution – if you have a pond or water feature in your garden and are using mosquito dunks containing Bt-israelensis (Bt-i), you may be killing dragonflies and damselflies too. A better way to control mosquitoes is to put fish and/or a pump in your pond.



Damselfly, Odonata zygoptera

Lacewings

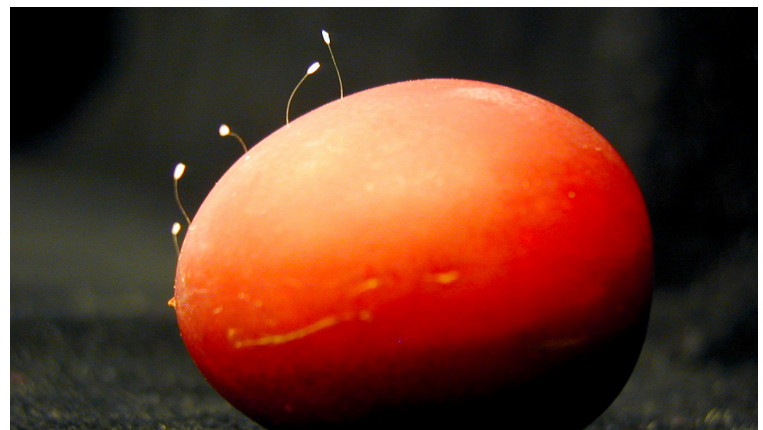
There are over 6000 species of lacewing, and they come from an ancient lineage of insects that have been on the planet for a very long time. They are usually green in colour with slender bodies, large eyes, and delicate looking, intricately veined wings. Don't let their fragile appearance fool you; for being a rather small insect, lacewings are actually ferocious predators that spend most of their day either devouring small insects or looking for their next meal. Aphids are their favourite, but any small, soft-bodied insect will do. Gardeners often find these voracious little beasts on the undersides of leaves or creeping up the stems of their perennials. They are very efficient at their job, and they themselves are important prey for songbirds, frogs, and other insects. Lacewings have a tendency to be more common in gardens where moisture is available; a pond or a stream is a good way to get their attention but a birdbath will also work. These pretty insects are definitely the gardener's friend and can sometimes be seen wearing tiny vests that say "pest control crew". (Just kidding.) Seriously though, if you find these hardworking and beneficial insects in your garden, leave them to do their work and maybe see if you can get a good photo of them; they are remarkably lovely when viewed up close.



Lacewings are typically green in colour.

Lacewing egg nests tend to puzzle gardeners when they first encounter them. They are tiny white egg-looking eggs that are suspended by a fine filament. Sometimes they are found in clusters and sometimes in neat little rows. If you see little white eggs that appear to float over your plant's leaves, don't harm them!

While the adult form of the lacewing is quite lovely, the larvae are less so. Just like ladybugs, it's the larvae that do most of the predation of the unwanted insects in your garden so if you see one of these in your yard, please thank it for its help keeping your yard pests under control.



Lacewing eggs can be found in clusters (top photo) or in neat little rows (bottom photo)

Ladybugs

Did you know that ladybug larvae (baby ladybugs) looked like teeny black alligators? Now you do! Lady beetles (ladybugs) are well known predatory insects that ought to be encouraged in our gardens. They are 100% carnivorous and while they feed chiefly on aphids, they will also eat scale insects and other soft-bodied creatures but to a lesser degree. While most of us recognize the adult form with its colourful red shell and spots, many people aren't aware that it's really the larvae that do most of the work keeping your garden free of unwanted pests.



Ladybug larvae (baby ladybugs) looked like teeny black alligators

Birds tend to leave ladybugs alone since red and black are warning colours in nature. When harassed, ladybugs will release a foul-smelling yellow defensive fluid through the joints in their legs. Many children have exclaimed, "This ladybug peed on me!"

Ladybugs are highly sensitive to pesticides and will not fare well in gardens where they are used. You can actually purchase ladybugs, but we only recommend purchasing ladybugs for indoor greenhouse pest control.

Outdoors, it is better to try and create conditions that suit them. More on this below. If you do choose to buy a bag full of them and have them sent to you by mail, be sure that the ladybugs you are purchasing are actually native to your area. Ladybugs are best released early in the morning or late in the evening, and most of them will not care that there might be a few aphids in your garden. Ladybugs want there to be thousands of aphids, as they are looking to start families and want to be sure of a food source. A caragana shelterbelt teeming with aphids is appealing to a ladybug; one infected lupine in your garden is not. Because of this, releasing ladybugs outdoors if you don't have a serious aphid problem often leads to your purchased ladybugs flying off to somewhere that does.

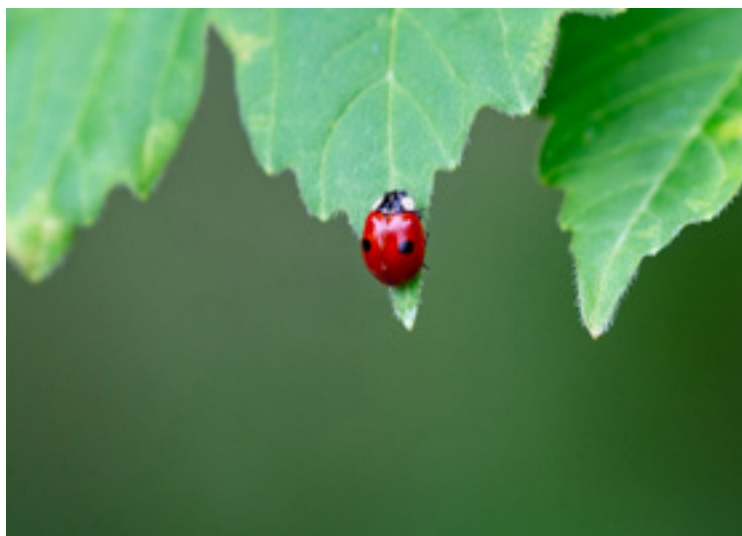
How do you encourage ladybugs to live in your yard?

Ladybugs hibernate, most often in leaf litter. Gardeners should not be too quick with a rake in the fall, and unless you absolutely can't bear it, to leave the foliage where it falls and deal with it (or not) in the spring. Gardens where leaf litter is left in place until spring planting time have much better ladybug populations than those who do not. If you want to keep your ladybug populations high, you must avoid pesticides, even organic pesticides, and you need to start mulching with a shredded bark or leaf based mulch. We have lots of mulching information on our site under the Soil section, but this article is a great place to start. We recommend that people who are gardening to attract beneficial insects will choose to mulch with a shredded bark mulch and remove fallen leaves from their flower beds in the spring. We recommend leaving these fallen leaves in place underneath low shrubs, where no one really wants to rake anyhow.

Instead of mulching with a shredded bark, you can also mulch with shredded leaves. Leaf mould is gardener's gold in terms of compost and ladybug value, but it does tend to pack so we do recommend shredding your leaves before applying them. To shred leaves with ease you can either:

Run fallen leaves over with your lawnmower, bag on, to bag them rather effortlessly; or

Fill a metal garbage bin about half full of collected leaves. Put on safety goggles at least, but ideally a full face mask. Use your weed whacker like an immersion blender. You do this by sticking your weed whacker into the bin half full of leaves and turning it on and off in pulses until the leaves are suitably shredded. You may also want to stir in some dried grass clippings or shredded bark by hand as well but this is optional.



Ladybug photo courtesy Bob Germain (2018)