

Beneficial Insects

by Michelle Johnson

As we carry out our gardening tasks, we are often unaware of the great deal of work being done by our allies in the garden the hoard of beneficial insects that play such an important role' in natural pest control. There is a huge array of beneficials, including hover flies, lacewings, parasitic wasps and predatory wasps, ladybirds, predatory mites, spiders, ground beetles and the list goes on! Many have fascinating life cycles, particularly the parasitic wasps.

One parasitic wasp, *Trissolus basalis*, lays its eggs in the sulphur yellow eggs of the green vegetable bug. This wasp is black and very tiny, only about 1 mm long. It was introduced to Australia back in the 1930's, specifically to control this pest. However it probably cannot control bug numbers on its own, so it would be wise to also use other control methods for the vegie bug, such as the "squish'm" approach as summer comes on.

Other parasitic wasps lay their eggs inside the larvae of common garden pests. The larvae of the wasps feed inside the host, but do not actually kill the host until they burst out, at which stage they pupate on the collapsed skin of the now dead host (rather gruesome isn't it). One, the *Cotesia Glomerata*, is a parasite for the Cabbage White Butterfly.

A third type of parasitism occurs with the aphidine parasitic wasp which attacks aphids. In this case the wasp passes its entire larval and pupal stages inside the host body and bursts out as an adult.

Many wasps are predatory of course. Two predatory wasps are the paper wasps, which build their nests out of chewed wood "paper", often under the eaves of houses, and the mud wasps, with their familiar mud nests on the walls of buildings. Both will eat caterpillars and spiders. The paper wasp will also eat the pear and cherry slug. If you find these nests around your home don't destroy them just to tidy up, or you will lose valuable allies in the garden!

There are so many insects, it is impossible to describe a fraction of them here, but if you see an insect and you wonder if it is a beneficial one, the following may help:

"As a general rule, fast moving grubs and related creatures are beneficial. They need to be fast as their prey, small slugs and insects, is mobile. Plant eaters, pests from our point of view, tend to be more "sluggish"." Joy Larkcom, "Vegetables From Small Gardens", p 93.

Given the usefulness of many insects we need to encourage them in our garden. The HDRA Newsletter (from England) in Spring 1993 lists six steps you can take to attract them:

Stop using pesticides

Many pesticides kill beneficial insects as well as pests. Since pests tend to breed very fast, they will often come back first.

Remember: “Whenever we kill a beneficial insect we inherit its job. And as novices we are attempting to take on the task of an expert. Whenever we fail, the environment suffers.”
Stuart Hill, Acres Vol 1, No 7, p10 “Broad perspective on sustainable agriculture”.

Only use organic sprays if you must

Many are not harmless, e.g. sulphur fungicide harms parasitic wasps and predatory mites, insecticide soap harms hover fly larvae.

Grow flowers to feed them

Flowers are a source of food for many pest controlling insects, particularly in their adult form. Many have short mouthparts, so simple open flowers or very small flowers are best. Among the favourites are flowers such as fennel, parsnip, parsley, daisies, dandelions, marigolds, sunflowers, thistle, and yarrow.

In a recent study, it was shown that the fennel flowers attract almost 500 different insects, of which 195 were partly predatory and 105 were parasitic.

Provide a nursery.

It is essential to have some pests in your garden if you want the beneficial insects to come in as well. The idea is to control, not eradicate pests, so we need to tolerate a low number of them. There is no place for the “Rambo Syndrome” in an organic garden!

Therefore it can be useful to allow a small number of nursery plants in your garden. A “nursery” plant is one which supports pests with no ill effect. HDRA gives the example of the common nettle which supports the nettle aphid which however does not attack other garden plants. Nettles will therefore attract many beneficial insects, particularly ladybirds when they emerge from hibernation. The nettles can then be cut down in summer so the predators will move to garden plants. However don’t let the nettles become a weed!

Provide safe cover

Ground dwelling insects do not like bare soil. Provide dark, cool moist conditions with ground covers, carpet, bits of bark etc.

Don’t be too tidy

Leave cover for other insects, including some old plant material. HDRA suggest you don’t cut back your herbaceous borders in autumn as the hollow stems are a favourite hibernation place.

Following these six steps will encourage beneficial insects to stay in your garden and help keep down the numbers of garden pests. As an added benefit, the increased insect life will also create a more interesting garden to be in.

References:

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personal communication with Dr Ian Neumann, CSIRO, Div. Entomology