

When we think of wasps, we generally are unaware of the many types of wasps that exist, many of which have positive roles in our garden. The wasps that are of concern to humans (butterfly gardeners) are social wasps (see footnote about other types of wasps).

As social wasps, the two main wasp families which are a nuisance live in colonies.

- German and Common Wasps (*Vespula germanica* and *V. vulgaris*)

- Australian and Asian Paper Wasps (*Polistes humilis* and *P. chinensis* respectively)

These wasps affect bee-keeping operations by competing for food with bees. Their sting also poses a potential health risk. Both types of wasp will strongly defend their nests if one gets too close.

In the summer of 2005-2006 a pest exterminator in Russell dealt with a nest which was about 1.5 metres high, and almost a metre in thickness!

The German Wasp and Common Wasp are very similar, both with yellow and black bodies – slightly bigger than a honeybee with smooth rather than hairy bodies. German wasps are a distinct grey colour.

Nests are often underground, with one or more entrance holes, although they may be found in sheltered spots such as branches of trees or caves. Common wasps' nests are a yellowish to reddish brown.

Australian and Asian Paper Wasps are smaller and slimmer than their cousins.

The Australian paper wasp is brownish-black or yellowish, with light brownish yellow wings with a blue tint, whereas the Asian is yellow and black. Regional councils frequently can help you identify them with pictures on their website, or with brochures.

If you have wasps in your garden, there is bound to be a nest somewhere nearby. In the early morning or late afternoon, when the sun's angle highlights them, watch for their flight path – they will be going to and from the nest.

German and common wasps are usually found as close as 200 metres from their nests. Sprinkle them with flour or icing sugar so they're more visible; they generally fly in straight lines. Return at night and tip a tablespoon of dry Carbaryl powder insecticide into each entrance. Although the regional council doesn't recommend it as it pollutes the soil, some people tip petrol or diesel into the nest's entrance, and then block the hole.

Paper wasp nests are umbrella-shaped and usually hanging from eaves or in trees/shrubs. You can kill them by spraying the nest with fly spray – be careful as dying wasps may drop down and sting you. Once there is no sign of any live

wasps, enclose the nest in a plastic bag and cut it off with scissors.

An effective wasp trap can be made by cutting the top ¼ off a large plastic bottle. Glue or staple it on upside down, so the narrow opening faces down into the bottle – and then half-fill the container with a soft-drink or sugar and water, with a little detergent. At the time of year when wasps are searching for nectar, they will fly in to feed on the sweet solution and cannot fly out again. Another suggestion is to add a piece of smelly meat – they love the smell when they are feeding on protein.

As at December 2007 we are currently trialling a wasp trap which will collect live wasps. These wasps will then be dusted with insecticide and can return to the nest and so poison the other wasps in that nest. We will update this Fact Sheet when we have more information.

I was puzzled as to why wasps suddenly abandoned their diet of Monarch caterpillars towards the end of summer, and learned that wasps actually change their dietary requirements around this time – from protein to nectar.

“The growth phase of the nest cycle is over and the wasps do not need to gather much protein to feed growing wasp larvae,” I was told by a wasp expert. “Much of the wasp activity you see in the autumn relates to mating rituals and tends to involve dancing males.” He said that *Vespula* wasp nests are also in a declining phase at that time of year, but will carry on a little longer than *Polistes*.

He also advised that there was not much point in trying to control wasps in the autumn or spring.

“In early Spring, many of the small founding wasp nests will fail for natural reasons, and they're more difficult to find when small. Forget about wasp control until early summer,” he told me. “Then begin searches for paper wasp nests and control them with a good dose of fly spray at dusk or dawn to kill the adults. Snip off the nest and burn/freeze/squash to prevent new emergent wasps taking it over.” We hope that soon people will be able to buy wasp bait for the control of *Vespula* wasps (not *Polistes*). This can be put out in raised bait stations from January to March and the wasps will take it back to their nest (thereby alleviating the need to actually find the wasp nest).

Paper wasps are habitual foragers that will keep returning to forage on plants that have been profitable for them in the past (because the herbivores they prey on tend to have clustered distributions in the environment). This is why paper wasps, like other predators, are so effective at removing all the eggs/caterpillars on any given plant once they've started working it.

Having your milkweed in pots means you can shift the plant to other locations in the garden on a regular basis to

alleviate this habitual foraging effect. Another way is to monitor your plants until they have evidence of monarch eggs/new larvae, and then cover the plants in an insect screen cage to prevent the wasps getting at them.

Note:

The various species of wasp fall into one of two main categories: solitary wasps and social wasps. Adult solitary wasps generally live and operate alone, and most do not construct nests; all adult solitary wasps are fertile. By contrast, social wasps exist in colonies numbering up to several thousand strong and build nests—but in some cases not all of the colony can reproduce. Generally, just the queen and male wasps can mate, whilst the majority of the colonies are made up of sterile female workers.

Wasps are critically important in natural biocontrol. Almost every pest insect species has a wasp species that is a predator or parasite upon it. Parasitic wasps are also increasingly used in agricultural pest control as they have little impact on crops. Wasps also constitute an important part of the food chain.

In wasps, as in other Hymenoptera, sexes are significantly genetically different. Females come about from fertilised eggs. Males develop from an unfertilised egg. Wasps store sperm inside their body and control its release for each individual egg as it is laid; to produce a male egg a female simply lays the egg without fertilising it. Therefore, under most conditions in most species, wasps have completely voluntary control over the sex of their offspring.

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NB This Fact Sheet is a work in progress. As other useful information comes to hand, it will be updated. Further copies will be available by email to trust@monarch.org.nz, or black and white copies by mail at \$1 per Fact Sheet.