



National Bee Unit

Honey Bee Colonies and Wasps

January 2022

Wasps can be a major problem for honey bee colonies in late summer and autumn. It must be remembered that use of poisons as controls may also kill bees and can be harmful for the beekeeper!

How many wasp species are there?

There are many species of wasp but most of these are solitary in habit and usually aren't a threat to honey bees. In the UK there are seven species that are social and create problems for bees and beekeepers. They are the common wasp (*Vespula vulgaris*), the European hornet (*Vespa crabro*), the red wasp (*Vespula rufa*), the tree wasp (*Dolichovespula sylvestris*), the German wasp (*Vespula germanica*), the Norwegian wasp (*Dolichovespula norvegica*) and the median wasp (*Dolichovespula media*). These are all eusocial, having a nest headed by a queen with workers (undeveloped females) who feed and care for their siblings, including drones (males) and virgin queens in late summer. There is also *Vespula austriaca*, which is a cuckoo species having male and female sexes only.

Which species present the greatest threat to honeybees?

Most accurate reports of wasps attacking honeybee colonies in the UK identify the species as common wasps *V. vulgaris* or German wasps *V. germanica*. However the other species are generally less common or local in distribution.

Where do they nest?

Common, German and red wasps nest underground, the European hornet prefers nesting in hollow trees whilst the tree wasp and Norwegian wasp nest in trees and bushes, having nests hanging from branches.

What is their life cycle?

Mated queens hibernate in a sheltered spot, emerging in spring to seek a nest site. When a suitable site is found, she then starts to establish the nest. Wasps do not have wax glands so make their nests out of paper and can often be seen scrapping wood from trees and frequently garden fence panels or posts. They then mix the wood strands with saliva

in their mouths, making a paper pulp, which is then formed into a nest which starts as an umbrella shaped dome, with cells that are built facing downwards.

The queen lays eggs in the cells, which hatch into larvae and are then fed meat such as green fly and other plant pests. When fed, the larva yields a sugary secretion as a reward to the feeder providing carbohydrates. When developed the larvae pupates and subsequently emerges as an adult. The nest is expanded by workers and towards late summer, drones (males) and virgin queens are reared. As the nest moves into autumn the virgin queens leave to mate and hibernate over winter. The old queen dies, and the workers are left queenless. As a result of no queen, no larvae are reared to feed sugary rewards and so wasps go out in search of other sweets such as fizzy drinks, jam sandwiches, beehives, etc. In spite of this nuisance they play an important role in nature.

Do wasps eat honeybees?

Throughout the spring and summer wasps sometimes prey on weaker colonies, looking for dead bees to use as food. On occasions, they take live bees in the field, but numbers taken have little effect on colonies. In the autumn, they are intent on robbing honey from hives with the collateral damage meaning many bees die defending the hive.

What can I do to prevent wasps robbing my bee colonies?

Strong healthy colonies are better able to defend themselves. Weak and those colonies with Varroa damage are more vulnerable. There are three measures that can be taken to assist honey bee colonies:

Controlling wasp nests in the environment. Destroying nests in the spring and summer is clearly a good method of reducing the overall wasp population and reducing robbing problems in the autumn; so ensuring no wasps' nests are close to your apiary helps. However, destruction of wasp colonies on a wide scale is disadvantageous to the environment.

Trapping wasps in the apiary. Placing wasp traps such as jars/bottles containing a mixture of water and jam will help. Wasps will tend to go to these traps as an easier option and then drown when they can't escape. Commercial traps which may be more effective and easier to use, are available from some bee equipment suppliers and other commercial outlets.

Assisting the bee colony. Reduce the hive entrance to make it easier for the bees to defend the colony. With severe problems cut the entrance to a single bee space. A small tube entrance can be easier for bees to defend. Closing open mesh floors with the floor insert will also help. Commercially available hive floors have been developed with in-built traps designed to help control Asian hornet predation on colonies. These also help in the control of wasp predation too and can be bought from most beekeeping suppliers.

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