National Bee Unit

Wax Moth

There are currently two moths that present problems to beekeepers in the UK. They are the lesser wax moth, *Achroia grisella,* and the greater wax moth, *Galleria mellonella. Both wax moth species undergo complete metamorphosis and have four stages of development: egg; larva; pupa; and adult.* Generally speaking, wax moth are considered a minor pest of the honey bee, however, they can cause problems for weak hives.

What are the problems that wax moth cause?

Wax moth and the larvae do not kill honey bees or their colonies but are often found destroying unoccupied drawn comb in colonies that have failing queens, been damaged by pesticides, are weak, queen less, starving or diseased. They also have the potential to destroy or damage stored comb. The greater wax moth can also cause damage to hive components by boring into the woodwork of the hives and frames and making boat-shaped indentations and is generally recognised as causing significantly more damage than the lesser wax moth.

Do they have any benefits to bees and beekeepers?

In foulbrood diseased areas it is probably the 'beekeepers best friend' as it removes infectious comb from the disease cycle. This is particularly important respecting feral or abandoned colonies. Certainly when the greater wax moth arrived in New Zealand, as an exotic species, it was accompanied by a decline in the number of cases of American foulbrood.

What is the life cycle?

In order to control wax moth infestations it is important to be able to recognize them and understand their life cycles so that appropriate action may be taken.

Greater Wax Moth, *Galleria mellonella*

The adult moth has a length of about 20mm, a wingspan between 24 and 33mm. and is a brown colour with ash white markings. When seen in a hive it makes short runs or flights to darkness. It can sometimes be seen perching and flying in the vicinity of bee colonies at dusk usually entering hives or boxes at that time. Females

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lay clumps of eggs in crevices within the hive, laying between 300 and 600 eggs which are pink/cream/white and are difficult to see. They hatch after 5–8 days into the larvae that cause the damage to bee combs. These larvae cannot ingest beeswax but eat it and live on the impurities contained therein. As a result they are generally found in the brood comb or any comb containing organic matter. The larvae burrow through combs often just under the cappings leaving a silken white tunnel behind them. The bee pupae in the cells are rarely damaged, but sometimes become trapped in the cells by the silk threads and die. This condition is known as *Galleriasis* and is more frequent in newly drawn comb. The larvae grow from 24-33mm in length and when they pupate, often burrow into wooden frame components next to frame lugs, or adjacent to the hive walls leaving boat shaped furrows about 15mm long. In serious infestations the entire box can be filled with pupae in white silk cocoons. These are usually accompanied with dark specks of frass. On emergence adults mature and usually mate within the hive.

The Lesser Wax Moth *Achroia grisella*

The adult moth has a length of 10-13mm, a wingspan of 11-14mm and is silvery-grey to buff in colour with a yellow head. When seen it either flys, runs very quickly or holds onto the comb vibrating its wings. Each female can lay 250-300 eggs hatching into larvae that are similar in appearance to greater wax moth larvae but are smaller in size. Though larvae consume honey, pollen and wax they are not found in comb occupied by bees and do not damage hive components. Lesser Wax Moth larvae are unable to compete with Greater Wax Moth larvae as the latter will eat them. Keeping strong and healthy colonies is the best prevention against wax moth infestations and if they are not controlled, infestations can rapidly multiply, being exacerbated in warmer conditions.

Cases of mistaken identity

The larvae of the Small Hive Beetle (SHB), *Aethina tumida,*shows a striking resemblance to wax moth larvae and will consume beeswax, honey, pollen and brood, resulting in total devastation of bee colonies. The two key features used to distinguish SHB larvae from the greater wax moth larvae are the three pairs of legs near the head and the spines protruding from the dorsum. Further details can be found in the NBU leaflet 'The *Small Hive Beetle, a serious threat to European apiculture'*.

Please see https://secure.fera.defra.gov.uk/beebase/index.cfm?pageid=167 . At present it has not been confirmed in the UK but there is a significant risk of its introduction. If suspected it must be reported to the National Bee Unit.

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