Large Hive Beetle

Large hive beetle is often seen as a bit of a mystery in the beekeeping community. While the pests have caused some damage to apiaries, few research studies have been devoted to this pest's biology and impact on European honey bees. However, it's important for keepers to understand how to identify and remove LHBs if they're encountered.

Physical description

The large hive beetle (LHB), or *Oplostomus fuligineus*, is a large, black beetle species native to Africa. Adults typically measure about 20mm in length with a large, scarab-like appearance and a black, shiny body.

One of the largest challenges in identifying this pest comes due to the similarities it shares with other common beetle species. A similar pest, *Oplostomus haroldi*, has also been identified as a pest within many bee colonies. Whether a beekeeper encounters this species or the former in their hives, they can cause significant damage if left unaddressed.

While these insects can cause damage within a hive, appearance and effects are often less severe than similar pests such as the small hive beetle. It's believed LHB reproduce outside of bee colonies, laying their eggs in nearby decomposing leaf litter or dung from herbivorous farm animals.

Symptoms

LHBs consume a hive's brood. Their presence can be detected through the following telltale characteristics:

- obvious signs of brood damage
- diminished bee population
- less honey output or unused combs.

How it spreads

Originating in Africa, LHB has spread to many other regions in the world. The primary cause of this spread has been the pest hitchhiking when hives are transported. As LHBs consume honey bee brood, the overall quality and viability of the comb is directly impacted. This gives them plenty of places to hide and avoid detection before comb, brood or related honey products are shipped to other areas.

Eradication

The most environmentally-conscious eradication method is a simple manual identification and removal of specimens from the hive. Most research shows that LHBs do not lay eggs within the hive itself — they simply infiltrate it to consume brood. Accordingly, beekeepers need not search for larvae or eggs within the hive. Instead, they can regularly inspect hives to identify and remove the large, distinctive scarab beetle presence.

Another simple method to eradicating LHB presence within a hive is to remove nearby sources of their eggs. Eliminating nearby egg or hatchling sources such as cow dung and leaf litter removes the source of continued hive infestations. This eradication solution is as easy as cleaning up near hives, moving herbivorous livestock away from colonies or even relocating the bees to a different area within an apiary or farm environment.

In cases of extreme infestation or highly affected hives, additional steps may be necessary to remove the threat of LHB. Many beekeepers have reduced the size of entry points to prevent these larger beetles from getting into the hives altogether. However, these smaller entry points may impact a colony's overall functionality and health due to increased stress coming in and out of a hive.

Prevention

Like many other pests and infestations, maintaining a strong hive remains the most effective method to reducing the risk of the LHB. Strong colonies able to defend the hive entrance will keep this insect away

Regular inspection of colonies for the presence of LHB is also an effective prevention method for large-scale infestation. Adult beetles will enter hives and affect the brood — but they will not reproduce or lay eggs there. Ongoing inspection can help to ensure the colony is strong enough to fend off beetle populations. Additionally, early detection and removal of beetles can keep the hive healthy and strong against this and other infestations.

Another important concern related to LHB is stopping its spread. Maintaining a high awareness of LHBs within colonies is imperative to reducing or eliminating further spread throughout the world. In many cases, irresponsible beekeepers did not inspect their hives or brood before shipment to other countries and regions, leading to their introduction into new ecosystems. As a result, their presence has become a problem to multiple regions where these insects are non-native.

LHBs have not yet been identified in Australia. Continued responsible apiary management will keep these pests from spreading any further. Preventing the spread of LHB and other pests should remain a top concern to beekeepers in all areas of the world.

Detecting Large Hive Beetles in your colony

Since LHBs do not reproduce within a hive, the best detection method is simple visible identification of the insects. Their distinctive scarab appearance and large size often makes them easy to spot when first opening and inspecting the colony. However, they will flee from sunlight and hide under combs or other areas in the frame. A quick motion to open the hive for inspection can often expose LHBs if they are present.

SOURCES

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http://www.padil.gov.au/pests-and-diseases/pest/main/135699
http://www.uniprot.org/taxonomy/1232491

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1. Large Hive Beetle in a beehive. PHOTO: Agricultural Research Council, South Africa
2. Large Hive Beetle specimen. PHOTO: Simon Hinkley and Ken Walker, Museum Victoria
3. Large Hive Beetleon honeycomb. PHOTO: Ben Oldroyd, University of Sydney