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BEEKEEPING BASICS - PESTS AND DISEASES

Braula fly

The Braula fly (*Braula coeca*) is a wingless fly primarily affecting honey bee colonies. Often mistakenly referred to as a braula louse, the insect can directly impact the overall function and health of a colony or entire apiary.

Braula flies live directly on the bodies of bees, clinging onto them with comb-like attachments to their front legs. The insects do not bite the bees themselves. Instead, they migrate to the bee's mouth and feed on nectar, pollen and other natural secretions.

These flies typically present on bees where most feeding occurs, but they can lay eggs all across the hive. Despite the prolific egg-laying, capped honeycomb is the only area where eggs will successfully hatch.



Physical description

Braula flies are tiny, measuring just 0.9 mm wide and 1.5 mm in length. They are reddish-brown, with six legs and a hairy body.



Symptoms

Braula flies are typically a much lower threat compared to other insects or parasites. However, there are several negative effects they can have if left untreated in a colony.

DECREASED HONEY PRODUCTION AND COMB VIABILITY

Successful Braula fly hatches occur directly on the honeycomb within a hive. As the fly larvae grow, they burrow through the comb itself. This affects the overall number of comb available within a hive. In severe cases, this can lead to a reduction in honey output.

MALNOURISHED QUEEN AND POOR HIVE PRODUCTION

Braula fly infestation on the queen is fairly rare, but can happen in cases of severe infestation. The Braula can attach to the queen and impair her ability to eat. In these cases, poor egg laying can

lead to a population drop-off within the hive. This level of infestation can snowball into a weakened bee population and a higher susceptibility to other diseases, parasites or infections. Additionally, the visual impact of burrowed honeycomb makes it considerably less appealing for sale.



How it spreads

Braula flies can be introduced into a colony in a variety of ways:

- fly attachment to swarming bees
- drifting or rogue bees introducing flies into the hive
- package or queen bees from other locations spreading the pest
- spreading infected honeycomb to other areas.



Eradication methods

There are three main ways to help eliminate Braula flies.

1. TOBACCO-INFUSED SMOKE

Tobacco-infused smoke has been shown to be an effective and environmentally-conscious eradication method for the fly. Please note that regular use of tobacco should only be employed in more severe cases of infestation. Frequent use of this method could negatively impact the bees — potentially killing adults and compromising hive function.

IMMEDIATE HONEY STORAGE IN THE FREEZER

Finally, after extraction, comb honey should be placed immediately into the freezer. If there are any eggs or larvae present in the honey, the freezing process will kill them. This process is also effective against multiple other bee pests.



Preventing Braula fly infestation

The overall threat of Braula flies is minor for the majority of colonies it affects. In many cases, a strong, robust hive can easily survive and overcome an infestation through natural means.

The use of miticides has helped to mitigate the population of this pest throughout most of the world. As a result, most beekeepers will not need to worry about an infestation in their apiaries.

Fortunately, miticides will likely be unnecessary to prevent infestation within a hive. If flies are suspected or visually confirmed, beekeepers should take caution in the removal and spreading of combs. Additionally, a few tobacco-infused smoke treatments will likely eliminate the threat from the hive altogether.



Detecting Braula fly presence in your colony

Beekeepers can use these identifiers to positively confirm the presence of braula flies within a hive.

TUNNELLED APPEARANCE OF LARVAE BURROWING ACROSS THE HONEYCOMB

A telltale sign of this particular pest is confirmed through the honeycomb itself. Braula larvae will burrow across the comb as they grow and search for adult

bees. As a result, tunnelled, uneven burrowing paths will be present on the comb.

VISUAL IDENTIFICATION OF FLIES ON ADULT HONEY BEES

Braula flies are much larger than other mites or pests that plague colonies. As a result, visual identification is often the most effective method to identify these insects on bees. Beekeepers can generally spot one or more of the flies on the top or sides of an adult bee.

STICKY MATS AND TOBACCO-INFUSED SMOKE

If Braula flies are suspected but not visually confirmed, another detection method involves a sticky mat and a little bit of smoke. Place sticky mats on the bottom board of the hive, add a few grams of tobacco to the bee smoker and add smoke to the hive until it comes out from the top. Wait a few minutes then check the mats. If Braula is present, many of them will appear on the sticky mat and their presence can be confirmed.

SOURCES

http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0006/176658/Braula-fly.pdf
<http://beeaware.org.au/archive-pest/braula-fly/>
<http://www.planthealthaustralia.com.au/wp-content/uploads/2013/03/Braula-fly-FS.pdf>
<http://www.planthealthaustralia.com.au/pests/braula-fly/>
<http://www.dave-cushman.net/bee/braula.html>

BANNER PHOTOS ON PAGE 1

1. Braula fly. PHOTO: Kelly Ventura
2. Evidence of Braula fly may present as tunnelling on honeycomb. PHOTO: Nick Anand
3. Adult Braula fly on honey bees. PHOTO: Harold Ayton