



Small Hive Beetle

Best Management and Biosecurity Practices

SMALL HIVE BEETLE IN ONTARIO

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Understanding the biology and life cycle of the small hive beetle will help beekeepers to identify this pest and aid in the effective implementation of best management practices.

BEST MANAGEMENT PRACTICES (BMPs) TO CONTROL SMALL HIVE BEETLE IN ONTARIO

The small hive beetle (SHB), *Aethina tumida*, is a honey bee pest capable of damaging and stressing colonies in addition to causing honey spoilage. If SHB is detected or suspected, beekeepers must report this to the Ontario Ministry of Agriculture, Food and Rural Affairs' Apiary Program. SHB adults are long lived (up to 6 months), can disperse by flying (10 to 14 km), and have great reproductive capacity. Although SHB can live independently from honey bees, they will actively seek out honey bee colonies for shelter, food and breeding areas for young.

Although SHB is capable of damaging honey bee colonies, this impact can be managed. Beekeepers must recognize the risks of SHB, the potential damage resulting from the spread of SHB and the steps they can take to mitigate this pest.

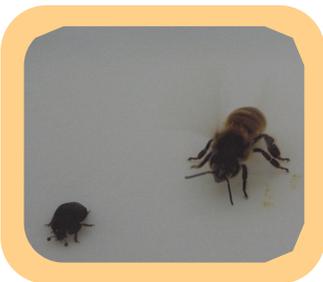
The risk of SHB infestation increases with the following factors and activities:

- ◆ Proximity of bee yards to the US border
- ◆ Sharing of beekeeping equipment among yards and honey houses
- ◆ Catching bee swarms of unknown origin
- ◆ Co-mingling and transportation of bees
- ◆ Importation of bees or equipment into a beekeeping operation

Treatment options for SHB, including in-hive and outside of hive chemical treatments, chemical-free physical traps, and biological control options exist. More information about treatment recommendations can be found online at www.ontario.ca/beekeeping. Prevention is the best mitigation strategy.



Adult Small Hive Beetle



Size comparison, adult Small Hive Beetle and Worker Bee

When choosing to move honey bee colonies within the province, beekeepers must be aware of the distribution of SHB in Ontario and make movement decisions with this in mind. Sharing extraction facilities, beekeeping yards or equipment may increase the risk of transmission of SHB. If you share with another beekeeper, ensure:

- They are aware of the risks of transmission of SHB
- They have a similar risk profile
- They are in a low risk area
- Frequent SHB inspection and cleaning and disinfection protocols are performed to detect infestations early and reduce the likelihood of cross contamination

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Preventing the spread and reproduction of small hive beetle is more effective than treating for the pest once it becomes established.



Adult Small Hive Beetle



Larval Small Hive Beetle

Be aware of the distribution of SHB in Ontario and make decisions about colony movement with this in mind.

To reduce the likelihood of SHB infestation, prevent the spread of SHB and to minimize damage to honey bee colonies, beekeepers must implement best management practices (BMPs) and adopt routine biosecurity practices. The following BMPs will be updated on an ongoing basis as more local data and knowledge becomes available.

APIARY BEST MANAGEMENT PRACTICES (BMPs)

1. Regular colony monitoring
 - Engage in routine monitoring using a visual scan underneath the inner cover on the top bars of the frames and in the cells of the wax comb to detect adult SHB.
 - Larval SHB can be detected underneath pollen patties, in cells of wax comb and amongst debris on the bottom board.
 - The use of physical traps may assist in detecting SHB.
2. Maintain strong, healthy and populous honey bee colonies
 - Reduce potential colony damage or stress by managing other honey bee pests and diseases (in particular varroa mites) throughout the beekeeping season.
 - If treatment for pests or disease is required, choose the appropriate, legally registered treatment and apply according to label instructions.
 - Ensure nucleus colonies are of sufficient strength, and/or not below three frames of bees and that there is little to no extra comb space.
 - Combine three way or two nucleus colonies into a single standard Langstroth brood box.
3. Take immediate measures to manage weak colonies
 - Requeen queenless colonies immediately.
 - Cull or combine weak honey bee colonies, after assessing these colonies for other pest or disease issues.
 - Minimize the amount of unprotected comb in proportion to the honey bee population – do not over-super colonies.
 - Ensure dead bees and unused equipment (especially darker brood comb) are not left exposed in the bee yard.
 - Keep the apiary clean of wax debris from broken frames or wax scrapings.
4. Follow biosecurity protocols
 - Obtain bee stock from an operation with known health status.
 - Keep vehicle windows and doors closed when visiting a bee yard.
 - Before leaving a bee yard and prior to entering a vehicle, conduct a thorough inspection of your bee suit and veil for insects. Remove the bee suit and veil and shake vigorously.
 - If visiting a bee yard or location with a greater risk of harbouring SHB, visit this site last during a day of beekeeping activity.

HONEY EXTRACTION FACILITY BEST MANAGEMENT PRACTICES (BMPs)

1. Promptly extract honey supers. Do not bring more honey supers to the extraction facility than can be extracted within a week (ideally within 24 to 48 hours).
2. If possible, manage colonies with queen excluders. If queen excluders are not used, ensure honey bee brood is not brought into the honey house in honey supers.
3. Run dehumidifiers in hot rooms to maintain relative humidity below 50%.
4. Ensure that extraction facilities are kept clean.
5. Remove unprotected comb, wax cappings and slumgum, or store them in beetle-tight containers.
6. Store honey comb, extracted frames and unused honey supers in a freezer or a cold room (< 10°C) and/or a room with low humidity (< 50% RH).

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ADDITIONAL PRECAUTIONS FOR HIGH RISK AREAS

1. Park vehicle 10 meters outside the boundaries of the bee yard. Wash the exterior of vehicle prior to leaving a high risk area.
2. Take only required beekeeping equipment into the bee yard. Use a different set of beekeeping equipment and apparel from yard to yard in a high risk area.
3. Following a visit to an infested bee yard, place bee suit and veil in a tied garbage bag before entering a vehicle. Freeze the garbage bag and the contents for 48 hours before wearing.

ADDITIONAL RESOURCES

For more information or for questions related to inspection requirements and any current potential regulatory activity on a bee yard under the *Bees Act*, please consult with the Apiary Program or your local apiary inspector. Further resources on biosecurity can be accessed online at www.ontario.ca/beekeeping.



Également disponible en français

For more information:
Telephone: 1-877-424-1300
Email: apiary@ontario.ca
www.ontario.ca/beekeeping