Australian Government
Rural Industries Research and Development Corporation

Management of Small Hive Beetle (SHB) in Australia

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Compiled by Des Cannon, Committee Member Honeybee R&D Committee

Since Small Hive Beetle (SHB) was first identified in Australia in 2002, it has been the subject of widely differing anecdotal discussion and conjecture about its spread and effect on beehives in Australia. It is now apparent that its area of influence is spreading, and it is now common in the eastern states (NSW, Queensland and Victoria), but the severity of its impact has varied greatly. This has been the case between apiaries, and even from hive to hive within an apiary.

In 2003, the RIRDC Honeybee R&D Advisory Committee funded a study tour to the USA to examine its spread and impact in America, and the study group, on its return, reported back to the Australian honeybee industry. What has become obvious, over time, is that the spread and impact in Australia has closely parallelled the American experience. There was little spread in the early days, beekeeper reaction was largely emotion-driven, and later, more recent impact has varied from beekeeper to beekeeper. Given that it has been decided that it is not possible to eradicate SHB, the Honeybee Committee has funded research to look at effective control strategies and techniques.

What is also apparent is that, to cope with the pest, beekeepers in Australia have to change the way we work our bees. It is not that what we were doing in the past was wrong – rather, it is necessary that we change our management habits so that we can effectively keep bees in the presence of a new pest.

African beekeepers have little problem with SHB. Admittedly, they keep different bees – African bees are more aggressive to SHB (and to humans), but the African beekeeper pulls just enough honey so that they can extract that night or next day, and put the supers back on the hives. They keep their honey houses very clean, with no cappings or old comb laying around, and do not bring any brood home with the honey.

Some common Australian practice allows SHB to flourish. We sometimes leave dead hives in the bee yard for more than two weeks, we store comb in the honey shed (often in a hotroom) for considerable time before extracting, we save cappings with pollen that SHB likes to reproduce in, and we often store slum gum around or near the honey shed for a lengthy time until it is convenient to dispose of it. This does not mean we have been sloppy or lazy – this is just the way we have done things for a long time. For the enthusiastic beekeeper, the challenge is to change in order to be more productive and efficient. Like GST, SHB is something new to adapt to.

Some of the things we've learned in the last four years about Small Hive Beetle (SHB)

1. Small Hive Beetles are very good flyers.
2. They have very well-developed pheromone receptors.
3. They can live outside the hive on pollen or rotting fruit.
4. They can reproduce on rotting fruit.
5. They can live over one year in captivity.
6. One female can lay 300-500 eggs a day for 30-60 days.
7. Beetles attract beetles.
8. They prefer hives in the shade to hives in full sun.
9. They are attracted to the stress pheromones of a hive.
10. They use a hive like a hotel – food, warmth, and shelter.
11. Nurse bees will feed the SHB in the cells just like they feed a bee.
12. European bees don't harass the SHB as much as Africanized bees do.
13. They can overwinter in a hive at –40°C.
14. A strong hive will keep them in check most of the time.
15. To reproduce in spring or summer, they will go to a weak hive.
16. In autumn, they go to strong hives to keep warm.
17. When the SHB eggs hatch and the larvae slime the hive, the bees will abscond.
18. SHB can't survive cold temperatures outside the hive. They can fly in cold temperatures if they have to move.

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Treatments in the Hive

1. Traps – oil
2. Hand kill
3. Homemade fall traps

Treatments Outside the Hive

1. Cold weather
2. Low humidity
3. Cleaning the honey house with bleach (Sodium hydroxide) WARNING: CAUSTIC
4. Treat ground with Permethrin (Permex ®)

Best Management Practice

1. Keep all hives strong. Don't try to keep weak hives going.
2. Make sure hives are in full sun.
3. Don't leave deadouts in the bee yard.
4. Check yards every two weeks.
5. If a hive dies out and you can't tell if SHB larvae came out of it and went into the ground, treat the ground around that hive (1metre square).
6. Don't keep permanent bee yards. Move hives every 2-3 months.
7. If you have a lot of SHB in an apiary yard, move it.
8. Do not make splits in a heavily infested yard.
9. Do not pull honey from a heavily infested yard.
10. Don't store a lot of empty supers on hives.
11. Do not allow bees to start robbing in a yard.
12. Keep bottom boards clean. Remove burr comb, brace comb and debris, since they are hiding places for SHB.
13. Screened bottoms help to keep SHB off the bottom boards, but they make the SHB go up in the hive.
14. Remove the hive lid and place it upside down on the ground. Place supers on the lid. Work the brood box and return the supers to the hive. The sun will have driven (most) of the SHB down into the lid. Kill them with your hive tool or tap the lid over a bucket of soapy water. The beetles that fall in the soapy water should die.
15. Keep your hives from being stressed. Stressed hives attract beetles. This means you will also become stressed.

The Honey Shed

1. Don't pull more honey than you can extract in 1-2 days.
2. Don't bring brood home with the honey.
3. Skim the top of your settling tank daily.
4. Clean out the bottom of your extractors frequently.
5. Render cappings and broken comb weekly.
6. Don't store slum gum. Get rid of it on a regular basis.
7. Sweep up dead bees, pollen and debris daily. Keep your shed clean. This includes your hotroom.
8. Treating stored comb with Phostoxin to control Wax moth will also assist in controlling SHB.
9. Set 1 or 2 hives at each end of the honey shed to attract any SHB that is attracted to your honey shed. Use these hives as beetle traps. Inspect them weekly for SHB.
10. Don't store deadouts with frames of honey/pollen. Clean them up and get the frames/boxes back onto strong hives.
11. If you see SHB larvae leaving the shed, treat the ground at the exit points.
12. Lower the temperature in the storage area to freezing (-13 to -22º) for 6 hours or refrigerated cold room (1 to 9ºC) for 12 days and/or the humidity to 50%. This will kill eggs, pupae and adults.
13. Hang a low wattage (25W) light near the floor inside the comb storage room. This will attract the SHB larvae as they try to go outside to pupate. If you have a beetle problem starting, you will know.

RIRDC Honeybee R&D

Rural Industries Research & Development Corporation
PO Box 4776
KINGSTON ACT 2604
Phone: (02) 6272 4819
Fax: (02) 6272 5877
Email: rirdc@rirdc.gov.au
Web: www.rirdc.gov.au

Chair, Honeybee R&D Advisory Committee
Keith McIlvride
PO Box 9
Bargo NSW 2574
Phone: (02) 4684 2605
Fax: (02) 4684 2628
Email: kmcilvride@bigpond.com