



SMALL HIVE BEETLE ROUND-UP

Beetles come on strong in the south right now – Be Ready!

Jennifer Berry

For the past few months I've been absent from these pages. There's no excuse other than the fact that I've been in the beeyard more than the office this year. Actually, if you could see the state of my office you would understand why I'd rather not be in here; piles of folders, books, various pieces of beekeeping equipment, data sheets, queen cages, clip boards, envelopes, stacks of un-opened mail (paper and e-mail), grafting tools, stuff I have no idea what it is and of course a wide collection of hive tools and veils.

Even though our research season is still in full swing, I've forced my way into the office. I had to plow through all the clutter and sweep piles into the corners, until finally my desk was revealed. Why? Well, it may have to do a little something with this fine new computer I just took out of the box (which is now blocking the only path to the door). And what is this new computer you ask? It's an iMac. Yeap, I'm back with Mac!

I was never very interested in computers, so most of the late 80s and early 90s technological innovations zoomed right by me. It wasn't until I came back to pursue a graduate degree that I was reintroduced to computers. A friend gave me an

older model apple computer. Wow, what a machine!!! I couldn't believe how many different things you could now do on a computer, plus the internet and the world it opened up. Because of school I did everything on the Mac.

Then along came this job and boom, I was forced into the world of Bill Gates. Now I'm not saying that's a bad thing, I just wasn't used to it. I had to be re-trained, re-programmed, re-formed.

Ok, enough jabber – let's move outside. Its Fall in Georgia and what a fine time to be here. October, in the south, is the crème de la crème of months. The heat and humidity, which is long past, has been replaced with crystal blue skies, cool breezes and marvelous days in the beeyard. No more head rushes as the temperature and humidity hits over 100°. The Fall colors are just beginning to make their appearance and the nights are almost chilly. You snowbirds have probably already tucked your bees in for the Winter while down south our bees are still desperately searching for that last droplet of nectar or granule of pollen. Not much remains, but if it's there the bees will surely find it. Goldenrod, which bloomed a month ago, with its brilliant orangey

heads and stinky nectar, is our clue to start preparing for Winter.

Even with the wonders of the Fall season there are still issues brewing. One which becomes really apparent this time of year is the small hive beetle (SHB). Earlier in the Spring/Summer we may have seen a few beetles on the inside of the inner cover, or end frames where the bees are absent but throughout the Summer the beetle populations have been on the rise. Actually, by July/August beetles are starting to rapidly multiply in our colonies, much like that other unwanted pest, *Varroa*. By September you can start seeing beetles by the hundreds on the underside of inner covers and bunched up in corners. But October can be even worse. Yet, it all depends on the colony and location. Some colonies will have a few while others a few hundred to even thousands.

In some cases, beetles probably bother us more than they bother the bees, especially during the warmer months when the majority are hanging out in the upper honey supers. However, when I start seeing hundreds of those slimy b!#!^!! crawling around the brood area, darting in and out of the brood cells, it's very un-nerving. This is when I begin to question how they're impacting the

The Hood trap sits on the bottom bar of an empty frame. The advantage is that the bees will fill up the empty space with drone comb, so you can get rid of trapped varroa and small hive beetles at the same time with the same frame.



The Freeman trap serves as a screened bottom board when not in use. Fill the tray with oil and beetles fall through the mesh and drown.



colony. Plus, as temperatures begin to cool down the beetles will start making their way to the center of the colony to the cluster for warmth. These sub-tropical species don't react well to cold temperatures. It's not part of their agenda.

Location may determine the seriousness of your beetle problem as well. Here in Georgia you don't just have to live in the southern regions or below the "fall" line to experience beetles. This fall line I refer to is a geological boundary that runs across Georgia northeastward from Columbus to Augusta. It used to be the Mesozoic shoreline of the Atlantic Ocean. Hence, sandy soils predominate south of the fall line, whereas harder clay soils are found to the north. Athens is north of this line. The sandy soils provide an easier home for the larva to excavate their pupae site. Beetles are often a problem in southern Georgia much earlier in the year and persist further into the fall. As far as Florida is concerned, it's a yearlong battle. But again, also depends on where your apiary is located.

Several years ago we moved beehives down to Perry for SHB IPM test. We started the colonies here in Athens, late in the Summer (bad idea) and then transported them south (another bad idea) to take advantage of irrigated crops still providing nectar. The first month the colonies were thriving beautifully. They were drawing out comb, the queens looked healthy, bee populations were strong and they were making honey. We patted ourselves on our collective back, said job well done and drove away with not a care in the world. Four weeks later we returned to a disaster. Over half of the colonies were dead and those remaining were in sad shape. Several colonies had absconded and were still clinging to shrubbery a few yards from their hives. All that remained from those that had perished or absconded was the dripping, disgusting slime and stench of tens of thousands of beetle larvae. The other colonies that still had bees were hanging on, but barely. Adult SHBs were everywhere. The poor bees were spending more time chasing the beetles out of the cells than attending to the brood or other duties necessary for their survival.

We rectified the situation by hauling the colonies back home to Athens.

Now here's the irony. The study was to investigate which IPM method or methods best controlled SHBs. So, in essence, we needed beetles, not as many as we encountered down south, but we still needed beetles. Within a few weeks the remaining colonies recovered but unfortunately there were no beetles. For whatever reason this particular location didn't support them.

There are numerous "non chemical" options available to reduce SHB populations. But probably the best defense is maintaining a healthy, strong, queenright colony. However, in some cases beetles can overwhelm even those. Again location, location, location.

Here are some basic cultural practices to consider. Avoid providing extra space that the bees cannot properly protect. For instance, don't stack a bunch of supers (empty or full) onto a colony. Swarming is no longer an issue in late Summer early Fall, so consolidate frames of honey into one or two supers, depending on the strength of the colony. Leaving empty supers with no bees, or worse, empty frames with pollen and no bees is asking for trouble. Also, if a colony is weak for whatever reason, take it from a 10 frame and put it into a four or five frame nuc. I like to keep the bees compact so to say, especially this time of year.

If your apiary is prone to having high beetle numbers, move the hives. Find another location for a season or two in order to break the lifecycle of the beetle. Also, beekeepers have found keeping colonies in the sun as opposed to the shade helps in reducing beetle numbers. Frame spacers are a magnet for beetles. They love to hide under the metal flashing and laugh at you as you try to wedge your hive tool down in there to mash em! The bees are also frustrated because they can't get to them either. Get rid of them if you have a problem. Seal all cracks and crevices inside the hive. Don't leave them any place to hide.

If you find a colony heavily infested with beetles don't combine it with one that's not. Suddenly increasing the SHB population may cause a strong colony to collapse. In our experience here at the lab, when we come across a colony loaded with beetles, we add traps (which I'll get to here in a minute) reduce the amount of space available, take any frames



The Beetle Jail replaces a whole frame in a super or hive body. Beetles hide in the slot on top, fall into the container of oil below and drown. The clear plastic container simply slides out of the surrounding frame to be emptied and refilled. No spilling, and a huge capacity.

infested with larvae and freeze them, manually remove as many adult beetles as we can and then move the colony. In the long run, however, I prefer to re-queen colonies with a more hygienic stock since it's been shown that bees with hygienic behavior will remove cells infested with beetle larvae. But sometimes the option just isn't available.

Making weak splits or mating nucs in mid to late Summer can be disastrous if you're not careful. They are beacons to those homeless beetles flying about in search of prey. And finally, for honey that you plan to extract, get it done sooner than later. Most beekeepers in the south have probably learned this lesson the hard way.

Before the days of the beetle, we could remove honey supers, stack them in our honey house and get to them when we had time. Not true these days. Stacking honey and walking away could mean the loss of your entire crop. Humidity and temperature levels in your honey house helps but it is still recommended to not pull honey supers off until you are ready to extract. I spoke to Bob Binnie who has had a lot more experience extracting honey and he told me some interesting information. If comb has had brood reared in it, you better get the honey extracted within four to five days or beetle larvae will appear. However, virgin comb (never had brood reared in it) won't succumb to beetles that quickly. But beware, if there's any lingering pollen in those cells the beetles will jump on it even faster. Another thing, the experts claim that honey houses with humidity levels below 49% won't allow beetle eggs to hatch. Be careful



The 2 piece BeetleEater trap. Beetles try to hide from the bees by running into the holes on the sides of the top. The Cutts trap has the holes in the center. The value of this trap is that it is reusable.

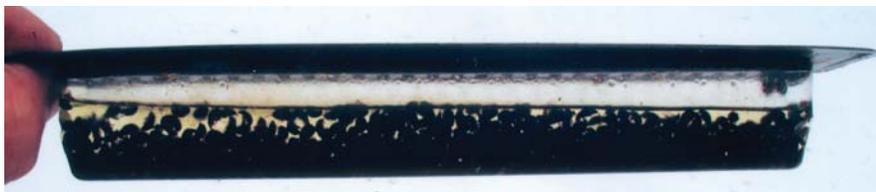
about relying on this completely. Once in the past Bob had the opposite occur. Nothing worse than all your hard work ending up in the bellies of those beasts.

During the Summer months I insert beetle traps in colonies that seem to have populations higher than I'm comfortable with. Like most beekeepers here in Georgia and the south, I've been experimenting with all sorts of traps and "non chemical" baits. So far nothing eliminates the beetles completely but I do see a reduction in the numbers.

For top bar traps you put inside the colony there's the reusable AJ's beetle eater and the Laurence Cutts' Better Beetle Blaster. The AJ beetle eater is a two-piece plastic trap you snap together and place in between two frames. The reservoir is filled with oil before placing and the beetles when chased by the bees, look for a place to hide, head into the holes and drown while trying to escape from the bees. It works well because you can place the trap wherever you see the most beetles. However, be careful not to spill any oil when placing and especially when removing the trap. If you don't already know, bees and oil don't mix.

The Beetle Blaster works the same way but is a one piece, disposable (and therefore cheaper) plastic trap that has a clear reservoir. It is just now available and is sold by major bee supply companies. According to the inventor, Laurence Cutts, it will hold around five to six hundred beetles and is very easy to install.

Beetleblaster by Lawrence Cutts.



Just put it between the frames and then use a squirt bottle to fill the trap with oil. Any vegetable oil will do. Once the trap is full of beetles, you just remove it and throw it away. The bees will propolize the top of the trap to the top bars so use care not to spill oil when prying up.

Both of these traps can be used in the brood nest for a continual trapping method even over Winter.

There are other in-hive traps available on the market; the Hood trap and a new comer, the Beetle Jail produced by Millerbees. Both of these traps take the place of a single frame. The Hood trap is a three-chambered plastic trap that sits in a frame. The outer two chambers are filled with oil and the inner chamber with apple cider vinegar. The beetles are attracted to the vinegar and enter the oil chamber and suffocate. The beetle jail uses a slightly different concept; it actually "traps" the beetles. The trap fits snug up against the wall (hence no space to hide) forcing the beetles inside the trap to escape the pursuing bees. The trap comes in three different sizes, deep, medium or shallow and has a small slit along the top of the trap where the beetles enter. Now here's the trick, the opening has a lip protruding outward on the underside. According to the information on the website, the beetles stay in the jail because they won't cross over that lip. There is a plastic reservoir that you place oil into so the beetles eventually drown.

There are also bottom tray traps. The West small hive beetle trap and

the Freeman beetle trap. The West trap consists of a plastic tray with a slotted cover that sits on the bottom board. The tray is filled with oil which suffocates the beetles that crawl or fall into the tray.

The Freeman trap takes the place of a screened bottom board. It is a separate unit with a wooden frame to support the colony, a wired mesh screen and a removable plastic tray. The tray is filled with oil and again the beetles either fall or are chased into the tray. The tray can be removed from the back of the hive with little to no disturbance to the colony. Both of these traps will reduce large numbers of beetles from your colony, but need to be perfectly level to operate efficiently.

For you northerners, I am assuming by October the ability to enter colonies is limited due to the weather. If beetles are present they have made their way to the cluster and don't plan to leave until the temperatures outside are much warmer. So trapping beetles now may not work. Unfortunately, in your area it was something that needed to be done in August. However, for our southerners it's not too late. Get out there, enjoy this magnificent weather, check in on your hives and make sure they're ready for whatever the season may bring. See ya! **BC**

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