

Inland Empire Beekeepers Association

Use of Drone Frames as Mite Traps A Chemical Free Mite Treatment By Ted Swenson

Drone frames serve two purposes in beekeeping. The first is as a mite trap and the second is to produce large numbers of drones for queen mating.

When using drone frames for either reason, the drone frames are placed beside the worker brood frames. Queens love the drone frames and seem to fill them up very quickly. As a reminder, drone cells are capped for 18 days (compared to 15 days for workers). This not only means that each Varroa can sometimes produce three mites (compared to two in worker larval) but also means that the beekeeper has a great deal of latitude concerning visiting the hive to pull the frame if used as a mite trap. I will schedule my return to the hive anywhere from 24-26 days after I was last there. I will usually find a full frame of capped larvae.

The research community has established that Varroa Mites prefer drone brood. Researchers think that the Varroa mite can detect drone brood by pheromones. The research articles say that 90% of the mites will select drone brood cells over worker brood cells. It would be interesting if research was done to determine if the drone frame mite trap would do a better job if placed in the middle of the brood as opposed to the outside.

I have also noticed that when the bees have drone foundation they will produce drones right up until frost. I run my hives with almost-new worker foundation (none more than 5-years old). After adding drone frames I noticed that the bees will draw out the normal brood frames with very few if any drone cells. But before I started using drone frames I never noticed sealed drone cells so late in the year.

My yards have 25-30 hives each. When I leave in the morning I pull about 30 frames from the freezer (which holds about 60 frames), and place them in three - ten frame deeps which have $\frac{3}{4}$ plywood nailed to the bottom. I use bee tight lids. In the yard I will pull the drone frame, look to make sure the queen is not on the frame, turn the frame perpendicular to the ground, and then gently shake the frame. The bees use any open cells of the drone frame for temporary nectar storage during the day. By shaking the frame over the other frames this nectar is sprinkled over the frame tops and bees. It is amazing how much nectar comes out. Turn the frame back up and shake all the bees off the frame. You may need your bee brush for this. Place the frame into the frozen ten frame box, grab a semi-frozen frame and place it in the hive. The frames are still semi-frozen when I put them in the hives. It does not bother the bees. Usually in 48 hours these frames are clean and ready for the queen. The bees do not waste the frozen eggs, larva or pupas. The dead drone brood provides a protein boost to the hive.

By taking out the drone frames with capped brood you have removed ~90% of the mites that were in your hives. Each successive rotation quickly reduces your mite loads to very low levels. No chemicals, no powders, no oils. You are using the knowledge of your

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honey bee's main enemy against them. Caution: if you wait too long and the drones hatch out you just created two big headaches for your hives. Several thousand young and hungry drones and three times as many mites than you had a few days before.

Drone frames in the honey bank. As the weather cools, the queens reduce the amount of egg laying in the drone comb and the workers fill the cells with honey. A drone frame full of honey is very heavy. I like to pull as many of these frames as will fit in the chest freezer and store them for late winter or early spring feeding. Another tool in the beekeepers belt.