SUGGESTED FIELD MAINTENANCE AND QUEEN REARING PROCEDURES FOR BIOLOGICAL CONTROL OF TRACHAEL MITES

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First of all, chemicals are at the very most a very short-term solution to the problem of Trachael mites, treating the symptoms which show there is something wrong, but not curing and correcting the actual cause of the problem. Many beekeepers are now reporting weak hives and dead-outs throughout all of Southern Arizona. These hives need to be worked to keep the Trachael mites from spreading, but you cannot work them the way you used to.

Caution – when hives are dead with no bees and the boxes are left standing with plenty of honey, no robbing is going on, the weather has been warm for a couple of months, and no months are eatingup the equipment: beware, for you may have tracheal mites. Most beekeepers known that wax moths readily enter and devour empty bee equipment in the field, quickly turning combs into useless rubble. Most beekeepers know that when hives die with chaulk, foul-broods, sac-brood etc with honey in them, unless there is a good honey flow in progress, they are quickly robbed out. So again, where wax moths are afraid to enter – beware.

We are finding here in Arizona that infestations are always greater at higher elevations than low elevations for some reason. We are still trying to observe why this is so.

We are also noting that the bees in strong hives are propolizing more and more and that the hives that are being found dead seemed not to have propolized at all or if so very little. Perhaps there is something to be said for the natural turpines in propolis to help bees to fight infestation and fungis infections, by sterilizing and self-medicating bees and hives. After all that is why we use bee propolis for ourselves, isn't this true?

Do not unite weak hives to strong hives to merge in those extra bees you are left with. You run great risk of spreading the infestation throughout all of your hives and equipment. If you must unite hives to save bees and equipment, unite only weak hives to weak hives, throwing in a new queen and storing excess equipment until it can be reused. Do not take sealed brood from a strong hive and exchange it with empty combs from a weak hive. You will not save the weak hive and you will only serve to infest the strong hive by infested combs!

To take up equipment the following steps must be followed:

1. Do not place empty equipment immediately onto and adjacent hive that is near-by to take-up the equipment. This will only serve to spread the infestation post-progressive. I.E. One dead-out spreads to 4-5 other live hives, 4-5 dead-outs spreads to 16-20 live hives, this in turn spreads to say 80-100 hives etc., very rapidly.

2. Take empty equipment back to your honey house and store for two weeks or at least ten days from the field. This includes supers with left over winter bee-feed frames. Treat with para-moth or other fumigating compound. This will keep out any hungry wax moths should some accidently decide to now get in, and also act as a side-effect to clear up any lingering Trachael mite infestation remaining in the equipment.

3. Once fumigated, take back to the field and add to remaining strong hives or use to make splits from healthy run-away brooding hives only.

Make-up numbers always by spliting run-away strong brooding hives. Do not waste brood on infested weak colonies, for this will only serve to perpetuate disease prone stock. Spliting from only uninfested strong bee colonies to make-up numbers will build-up mite resistance in your bees, for these hives will be the only ones staying ahead of the problem.

Learn to breed from strong colonies that are actively fighting off Trachael mite infestation. Do not mix weak and strong colonies together. Disease prone stock must be weeded out quickly so let it die and use only the strong that are left. Learn to spot symptoms when something is wrong. It has been observed that bees sick with Trachael mite side-wind in hive bodies keeping to the South wall side of the hives. The queen will favor laying to the side of the hive directly facing the sun. The bees will cling to the inside hive body walls of the supers directly facing the sun. The bees can be quickly driven down with smoke when working hives, as if gasping for air, and when hive bodies are stripped down to the bottom board they will seem a crawling mass, sometimes one to two inches deep, that no amount of smoke can intice to fly.

You can take these same bees and pick up a handful and squash them in your fingers and tear them apart and find the bees full of retained feces, swollen and rotten-like inside. The feces will look like baby feces (human) in color and the rotten bee internal flesh, will look bronzed-copperish, with blackened spots and irregular spots in tissues adjoining to trachea area. It's like the whole bee being eaten up from the inside to the outside from within.

Immediately following a rainy spell one can go out into the field into an apiary and walk among the hives and observe. At this time, in front of the hive on the ground, draw an ark from either side of hive entrance on the ground about 8-9 inches out. Within the ark look freshly dead or drying bees on their backs or barely crawling. Examine for Trachael mites by use of either a microscope or rubbing through your hands or fingers. You should find these recently dead or dying bees severely infested with trachael mites. Unfortunately, you may see these bees in front of fairly strong to strong colonies. Beware – this is the starting of Trachael mites within these hives.

When you find a colony heavy with honey stores in the spring and only two to three frames of bees where there should be two to three boxes of bees and brood beware. If you examine the bottom board of these colonies you will often find the chewed caps from stored sugared-honey frames on the bottom board. This is not normal. Most bees when they chew the caps, spit out the debre out the front of the hives on the ground. This shows that the bees are feeding, but have stopped house cleaning. Once this begins you will find other stress diseases starting to occur that are associated with house cleaning i.e. chaulk, foul-broods etc. When you find chaulk and roting dead bees together with yellow stains (feces spots) on the bottom board, together with the accumulation of chewed caps from sugared-honey frames, beware. Clean-off or replace these bottom boards immediately. Don't let the bees continue to walk all over this mess. It is unhealthy.

Learn to unstress your bees. Learn to requeen from your own or proven local state bee stocks. Most states have several local bee breeders within their own states. Learn not to spread mites unintentionally within your own equipment. Open your eyes in the field and observe what is happening and keep good field notes on what is happening. Take your field notes to bee meetings and compare with other beekeepers in your own area or from other areas. If you have decided to breed from your own bees to requeen your equipment, learn to do it safely. Some guidelines you might wish to use are as follows:

Graft your queens the same way you normally do and place them into starters/finishers the same way you normally do. However, when the cells are capped over on the fourth or fifth day place them into an incubator at 95 degrees F. in three dram bottles standing up.

When the queens emerge, squash opening of queen cell closed so that newly emerged queen can not get up inside of and die. Next take some granulated honey on the tip of your finger and gently wipe just a little on the squashed queen cell so that the newly emerged queen may feed. Water from the incubator will absorb into the granulated honey so that she will have water and food both. Lay bottle down. From here you may screen the queen for colour, uniformity, race etc and take only those queens you like to the field for immediate virgin introduction into a hive or place into a mating nuc. The nice thing about using an incubator is that your starter/finisher hive goes back together within four to five days and with this reduced stress, may be reused more often for requeening. You also get to screen your queens before hand.

Last and best of all, if you are having problems with Trachael mites and needs lots of queens to out-run the infestation, you can raise them quicker and with less stress on your breeding hives, starters/finishers. To keep your newly emerged queens uninfested until time of introduction you merely keep the newly emerged queens fed and in their bottles. To take them to the field you merely use some scotch tape over the wooden cell cups to hold them in place as a stopper. Place the queens with bottles into a cushioned six-pac Styrofoam carrier to keep queens from getting too hot or too cold. To introduce into the field simply build a smoker, pull back a corner of your top-cover, smoke into the bottom of your hive until smoke comes out of the top pulled-back cover, crack open the bottle with the queen by removing the tape and tap queen into the hive, and lastly close the lid and move on the next hive. One should be able to requeen successfully 70-80% or more of queens introduced this way without labour intensive hive splitting. This way beekeepers may requeen more often whenever queens play-out from Trachael mite infestations or you merely just want to requeen without a lot of work. Of course you still have option of requeening the old ways you are used to:

If you cannot find three dram bottles, Opticlear makes them, Adchemco Sciinc 1-602-746-1973 carries them for beekeepers to order citing Article No 60975L, size 21x50 mm 3 dram vials.