Animal & Plant Health Agency

National Bee Unit

Queen Trapping

Queen trapping is a technique developed by Dr. Maul in Germany. It is a useful technique for *Varroa* control; however, some skill is needed in carrying the technique out. It is claimed to give an efficacy of 95% and one of the advantages of this technique is that no chemicals are used when supers are on the hive. It is an important tool in an integrated approach to *Varroa* management.

1. Is it easy?

If you can find the queen and put her in a cage then the procedure is simple. A competent beekeeper assisting may be helpful.

2. When can I do it?

Local conditions will cause variations in the optimum time so some experimentation may be needed. As a starting point it should be carried out after eggs have been laid which develop into honeybees that forage the main crop (generally the end of April and beginning of May) and before those that will take the colony into winter. Normally this will mean the procedure can be carried out during the last week of May at the earliest, June and perhaps the beginning of July.

3. How is it done?

Brood production is restricted for a period by trapping the queen in a 'frame trap'. This special cage has a queen excluder design on either side of the two comb faces and envelopes a brood comb. *Varroa* attempting to reproduce enter the open brood cells within the caged comb, and, when the cells become capped over, the frame is removed along with any mites inside the cells. The queen is then trapped on one comb whilst worker bees still are able to carry out their duties. When the queen is trapped it is preferable to ensure that there is a small hole through the comb so that she can pass from side to side. These cages are available from some equipment manufacturers. A supply of empty, clean and drawn brood comb is helpful and it is much easier if your queen is marked clearly and brightly. This makes it easier to find her through the excluder material of the cage.

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The technique is as follows:

Start.

Find and place the queen on empty drawn brood comb in a frame trap and wrap the cage around comb ***'A'.*** The cage is then placed in the centre of the brood nest but as it is wider than a standard brood comb you may need to remove the dummy board or replace a frame with a dummy board. If using substitute comb it will have to replace an existing comb.

Day 9

Return to the colony and remove the cage. Examine the comb carefully through the excluder and find where the queen is. Open the cage and put the queen into a suitable container for safekeeping. Mark the frame ***'A'*** that she was trapped on with a drawing pin or similar and place back into the centre of the brood nest.

Examine the other brood frames for queen cells and destroy them. Select an empty brood frame, from the colony, or bring in a substitute, place the queen onto the comb and wrap the cage around it. This is comb ***'B'***. Place the cage next to the comb marked with a drawing pin (Incubating comb '***A'***).

Day 18

Go to the colony and remove the incubating comb ***'A'.*** The cells should now be capped over and the comb can be destroyed or recycled for wax. Next, remove the caged frame and perform the same manipulation with comb **'B'**as was performed on comb **'A'** for day 9. Select an empty brood frame, from the colony, or bring in a substitute, place the queen onto the comb and wrap the cage around it. This is comb **'C'**. Comb ***'B'*** now becomes the incubating frame. Mark comb **'B'** with a drawing pin. There will be no need to examine the other combs.

Day 27

Go to the colony and remove incubating comb ***'B'***, marked with the drawing pin, and destroy it. Remove the cage, which can now be dispensed of, find the queen and return her to the full colony. Mark comb ***'C'***, as before and place it in the centre of the brood nest to incubate. There will be no need to examine the other combs.

Day 36

Go to the colony and remove the incubating comb ***'C'*** and destroy it. Swarm control examination should resume at this point.

The 9-day examination period is important. This can be increased to 10 days for one period but should not exceed 19 days for two consecutive periods. This is because worker brood may hatch on day 20 along with captured mites and their progeny. If for practical reasons you wish to trap for 7-day periods, then four combs should be used to maintain efficacy.

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4. How long does this procedure take?

About 45 minutes per colony per season, but if you carry out swarm control examination on a 7 or 9 day period you will save some time as this will not be necessary on day 18 and 27.

5. With the loss of brood what happens to the honey yield?

With the removal of three frames of brood and loss of brood on other frames a drop in bee numbers is inevitable. However with little brood to care for more bees will forage. Experience indicates that colonies manipulated in this way, produce high yields of honey.

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