



National Bee Unit Southern Region

Information Sheet 15

Varroa Control through Artificial Swarming

The principle of any bio-technical method of varroa control is to use the natural characteristics of the varroa mite to **your** advantage rather than that of the mite. In this instance we are taking advantage of the broodless periods created during artificial swarming and, in effect, baiting the hives with brood combs which the varroa mites then enter in order to breed.

The notes below are based on using the Pagden Method of artificial swarming, but almost any method will be adequate as they all rely on the same principles of dividing the colony into two component parts; the queen and a large number of flying bees and the brood together with attendants. To carry out this method you will need an additional floor, brood chamber and roof together with additional frames to fill the extra brood chamber.

Figure 1 shows the situation at the start of the procedure, at the first signs of swarm preparation - the colony has a single brood chamber, marked A, with two supers and is at location 1. The supers are removed and the floor and brood chamber are moved to one side of the original location, a few feet away, to location 2. A new floor and brood chamber, marked B, are placed on the original site (location 1) as in figure 2. After inspecting the original brood chamber A to find the queen, she is placed into the centre of brood chamber B on the original site 1. This brood box should contain a full complement of frames with undrawn foundation. The foraging bees will return to their old location 1 where the queen is resident in brood

chamber B but, as there is no drawn comb, the queen will be unable to continue laying eggs until sufficient comb has been drawn.

P.T.O.

Figure 1 – day 0

Original colony in brood chamber A at Location 1

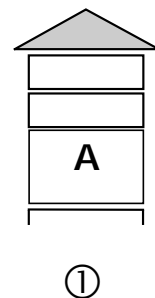
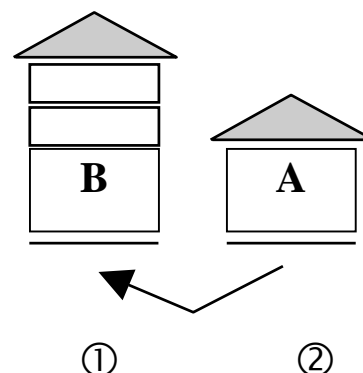


Figure 2 - day 1

Old brood chamber A at new location 2 containing brood and non flying bees. New brood chamber B at old location 1 containing queen, empty combs, supers and flying bees. Any flying bees in A will go to position of old home ie. location 1.



Now the original donor brood box (A) should be inspected and a suitable frame with a significant amount of unsealed brood identified. This frame should be shaken free of all bees and then introduced to brood box B. Any varroa mites which are present on the bees will migrate to this comb in order to breed. Sufficient time should be allowed for the comb to be fully sealed and then it should be removed from the hive and destroyed together with all of the mites it contains.

Brood chamber A meanwhile, will have sufficient nurse bees to feed and nurture the frames of brood and also contain a number of queen cells. Remove any sealed queen cells and leave only unsealed cells. This ensures that that a new queen will not emerge for at least 8 days. Place a roof on brood chamber A and leave both hives for a full week before taking any further action.

After 8 days, hive A can be moved to the other side of hive B, again a few feet away to location 3, and this will have the effect of bleeding off some of the bees which have commenced foraging in the last week. The reason for this manipulation is to reduce any “swarming” pressure which may exist in hive A by reducing the number of bees. Progressively, brood in this brood box will emerge over a three week period from the commencement of this manipulation until all of the brood has emerged. It is unlikely that any new queen will have emerged, mated and be laying by this time and we can now “bait” this brood box in a similar manner to that already used in brood box B

Inspect brood box B and select two suitable frames with significant amounts of unsealed brood. Shake off all of the bees and introduce these frames into brood box A where they are left until they are capped. Once capped they can be removed and destroyed

After a further period of two to three weeks, the new queen in brood chamber A should have mated and be laying eggs. You can now choose whether to reunite the two colonies under a new queen or whether to continue with the two colonies.

Figure 3 - day 1

One frame of unsealed brood is transferred from A to B to act as a bait comb.

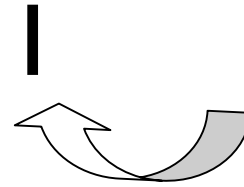


Figure 4 - day 8

Old brood chamber A now moved to location 3. Bees which have become foragers in the last 7 days will return to their old “home”, location 2

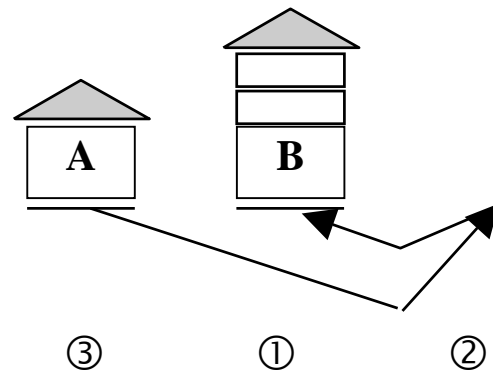
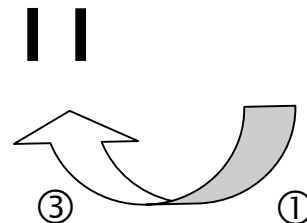


Figure 5 – day 22

Two frames of unsealed brood transferred from colony B to colony A



* Colonies should be monitored during these procedures to ensure that there are sufficient stores or that there is a sufficient nectar flow. Feeding may be necessary