

Swarm Prevention By Demaree Method

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Swarming is the natural means of reproduction of the honeybee colony. Bees swarm to insure their race will continue to survive. When bees swarm, they divide an existing colony in two forming a new colony. For this to occur a new queen must develop and the old queen leaves the hive with a large proportion of bees in search of a new home to live and proliferate. The remaining bees stay and wait for their new queen to emerge.



When a bee colony intends to swarm, the bees build queen cells on the bottom of a comb to raise new queens to take over the parent colony. The colony swarms as soon as the queen cells are sealed and before the queens hatch from their cells. Once the first virgin queen hatches she kills the other hatching queens, mates and begins to lay eggs and the colony continues on with normal hive business.

Photo credit: adoptahive.co.uk



After leaving the hive with the old queen a swarm hangs up on a tree while scout bees look for a new home. Photo by Ed Costanza

Swarming normally occurs in strong populous colonies, and mostly occurs in spring and early summer when weather conditions are favourable and flowers in bloom. A colony may issue several swarms leaving the hive nearly empty. Swarming is a problem in beekeeping. It weakens the colony and greatly reduces its honey production as the swarming occurs prior or during the main nectar flow season. Colonies that swarm do not provide a good working population for pollination of a crop.

Although swarming is associated with reproduction, it can be triggered by other factors, most commonly by the following:

- . Overcrowding or congestion within the brood nest
- . The presence of an ageing queen
- . Insufficient space for the queen to continue laying eggs and for the worker bees to store the nectar and pollen they are bringing in to the hive
- . Some races of honeybees (Carniolan) are more prone to swarming than others (Italian).

Swarming should be avoided because it severely reduces colony strength. The beekeeper should inspect his hives during the swarming season every ten to fourteen days and take measures to prevent his bees from swarming. A neglectful beekeeper may have hives that swarm often. There are several methods of preventing swarming i.e. dividing the colonies or keeping young queen or preventing overcrowding.

One of the best ways to prevent a bee colony from swarming is by the way of the Demaree method. The method was devised by George Demaree and was first explained in an article in the American Bee Journal in 1884. In 1892 he again explained an improvement in his method. The objective is to separate the unsealed brood and eggs from the queen. Brood goes above an excluder, while the queen is below. This measure reduces overcrowding in the hive and therefore the bees desire to swarm; and makes it possible to retain the total colony population; and to keep honey production at a maximum. The technique has the advantage of allowing a new queen to be raised as well.

It is important that Demaree's method be applied at the correct time. The times will vary depending on the season and rate of building up and nectar source in the area (March in warmer climate, May in cooler climate).

Demaree method, is carried out as follows:

Step 1

Remove the hive from its floorboard and put a new box with 8 drawn frames on its place.

Step 2

Go through the original brood box and locate the queen. Place her with two frames of sealed brood in the centre of the new box.

Step 3

Place a queen excluder on this box and put a super or several supers above the excluder.

Step 4

Put the original brood box with remaining unsealed brood on top. Fill up the gap with 2 frames of drawn comb, one on each side. The foraging bees will return to the bottom box where the queen is and the nurse bees will stay with the brood, as if they had swarmed.

Fit inner cover and roof on the stack.

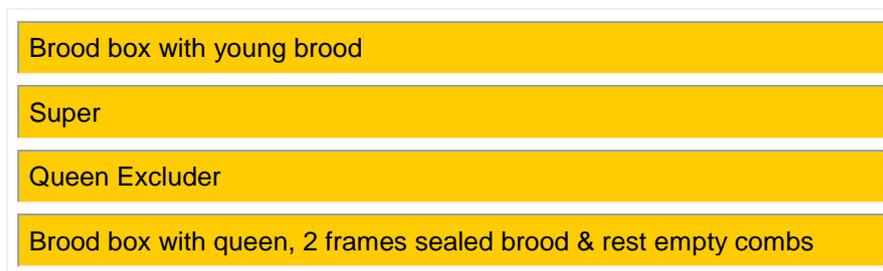
Step 5

After 7 to 10 days, inspect the hive and destroy any queen cells that may have developed in the top brood box. After then none can be started above since larvae less than three days will not be available. As the brood hatches, the combs will be filled with honey.

Step 6

The procedure of separating most brood from the queen is repeated after 9 to 10 days with queen cells destroyed in the top box. Once demareeing is completed the swarming drive is extinguished.

In this rearrangement, the hive is stacked up like this:



The colony has all of its brood and the queen, but the queen is separated from most of her brood and has a new brood nest below the excluder. A large portion of the bees is in the top where most of the brood is moved, and a small portion of the bees with a small portion of brood and queen in the bottom brood box.

By doing this, the queen will have plenty of space to lay eggs and expand her brood nest; the nurse bees will be upstairs away from the brood nest in the lower box, which relieves congestion. The foraging bees will get a great deal of room to store honey in the middle hive bodies.

In the top box due to the absence of the queen the bees will attempt to raise a new queen from the open brood. These can all be destroyed or used in replacing old queens and making increase (splits). Alternatively a new queen may be allowed to hatch out after selecting the best cell and inserting a screen floor under the top box as upper entrance to allow the queen to leave the hive and mate. The hive is managed as two queen colonies. What you do

after this depends on your needs. This new queen, once laying in good brood pattern can be used to re-queen the old queen or the hive is split to start a new colony, whilst still producing some honey, or after harvest.

Tips and Hints

1. Demareeing or separation of the queen from the brood is intended to be used before a hive has already swarmed, and when the colony is becoming a little crowded i.e. has eight or more combs of brood and before queen cells are constructed.
2. Demaree method should be applied immediately on a strong colony, showing signs of swarming (presence of several queen cells) or if the hive's population covering all combs in a two chambers brood nest and there is no more space for egg laying.
3. It is important that all queen cells in the brood boxes be destroyed that were already constructed at the time the brood is divided. When destroying the queen cells shake the bees from the combs or they will cover some of the cells, which will thus be missed. Don't miss any. If a queen cell is missed, the hive will still swarm.
4. If you have more brood than the top box can hold, you can put a few frames of sealed brood in the middle of the second super.
5. When the queen fills the brood box under the queen excluder transfer the frames of unsealed brood and eggs into a top story and return 7-10 days later to destroy any subsequent queen cells.
6. Remove queen excluder and recombine hive bodies when the prime swarming season is over.
7. Use the Demaree method once during a season.
8. Keeping a race of bees with a low tendency to swarm, and selection of non swamy strains are the first steps to swarm prevention.