

## Swarms & Hive Management

Swarming is the bees normal process of reproduction of a new colony. Swarms usually begin in this area in April and go through June; however they can occur later in the season. This year swarms are happening right now. It seems bees swarm for two reasons, the colony is overcrowded, or the colony wants to reproduce. It is very difficult to stop a swarm if it wants to reproduce. Most of the steps we take will delay rather than prevent it. There are things we can do to relieve congestion.

Planning and preparation by the bees have been going on for a quite a while before it happens. Drone population increase four to six weeks before swarm season. Bees will also start preparing queen cups. A populated queen cell means the colony is committed to swarming and it's time for serious intervention at that point.

As swarm day approaches, the queen must drop 25% of body weight in order to fly and foragers become lethargic. Foragers take about a week's worth of nectar supply with them when they swarm. 66% on average of the bees will leave, and the old queen will go too, leaving the new queen.

The queen can't fly long or far, so initially the swarm will find a spot to rest while they send out scouts for a new good hive location. Check out "Honey Bee Democracy" by Tom Seeley for more detailed information.

### **Benefits of swarming:**

- Getting free bees.
- Getting a young queen that is more genetically diverse.
- Breaks the brood cycle (method of Varroa control).

### **Good reasons to prevent swarms are:**

- Lost swarm means less honey production less pollination.
- A swarm may intimidate neighbors or become a public nuisance.
- A late-season swarm may jeopardize the parent colony's survival.

### **Prevention Tips:**

Inspect your hives every ten days in spring and early summer and watch out for drones developing and nectar in the brood chamber. Provide adequate ventilation and prevent moisture.

March is the most likely time for bees to starve, but it is also close to the time when bees will swarm. Also, be careful about feeding your bees and then suddenly stopping, as bees will expand their brood population according to food supplies, and a sudden decrease in the supply will create strain on the colony. If it's rainy, be sure to feed the bees, as they can go through their food supply in a short amount of time and begin to starve.

Requeening in the early spring can help reduce swarming because young queens tend to produce more pheromone than older queens. As the amount of queen pheromone decreases the urge for swarming increases.

Cutting swarm cells is popular among beekeepers, but it is not a particularly effective way to control swarming. The beekeeper usually loses because if he misses a single cell or cuts a day too late, the swarm will leave anyway. Worse, if he unknowingly cuts the cells from a hive that already has swarmed, or is just about to swarm, he may leave the old hive queenless. Rather, bees will not swarm if they have their queen, their field force, or their sealed brood absent or removed. Any one of these can be achieved by splitting the hive. If swarming is imminent, it is one of the best things you can do. By

splitting you are essentially initiating an artificial swarm during which you (try to) control when and where the bees go. By taking the old queen and some brood and nurses and putting them in a new hive, both parts seem to “think” they have swarmed and, if you’re lucky, they will both grow into strong colonies. Both colonies together won’t produce as much honey as one big colony, but you were going to lose them anyway, so it doesn’t much matter.

If a colony has an urge to swarm due to overcrowding, anything you do to reduce congestion will help.

- Slatted racks give bees more room to cluster in the brood nest
- Follower boards between the brood box and frames give bees more room to cluster
- Screened bottom boards not only separate mites from the colony but provide better ventilation
- An upper entrance improves ventilation and decreases congestion at the lower entrance
- Reversing hive bodies keeps the brood nest lower in the hive and provides room above the brood nest to store honey. But, don’t split the brood nest or it will be difficult for the hive to keep both areas warm. Checkerboard the hive by first moving the brood to the bottom box, and then place frames of honey alternating with empty frames in order to keep the colony thinking that they need to expand and continue building.
- Empty supers provide room above the brood nest to store honey
- Burr comb built between the frames, some beekeepers believe, should be cut away, but burr comb makes a bridge between frames which makes it easier for the bees to go from frame to frame. Removing it would make this more difficult.
- Using a twig (thickness of an ice cream stick) between every 2 boxes provides extra ventilation.

These things may be able to prevent a swarm - or not. The best we can do is note what has worked in the past and experiment in the future.

#### **Preventing swarming by moving frames:**

Another method is to break up the brood nest by borrowing brood frames from a stronger hive and adding them to the weaker hive (make sure you aren’t moving the queen by accident). When you do this, make sure the varroa mite population in the strong population is under control, so you are not adding more varroa to the weak hive.

You can also buy a frame that is pre-set for drone cells, so that you can select for drones, which also attract more varroa mites. This frame can then be removed and destroyed or frozen once the cells are capped, thus reducing the varroa population in the colony.

**Swarmed hives:** If your colony swarmed, you would need to check in 14 days, if the weather is good, to see if the queen is laying eggs. If the weather is not good for mating, it will take longer so you have to adjust. If the queen is not laying you may have to re-queen. You can also add a frame of open brood once per week for three to four weeks to bolster the colony strength. Watch for after swarms. Reduce the entrance five to six weeks post-swarm to prevent robbing. Be prepared to feed the colony and treat for mites. Remember the colony will be at its weakest about six weeks after swarming. In a new swarm hive you will also need to check for eggs and do the same thing. If the swarm you caught came from your own hive you may have to re-combine the hives back together if there is not a viable queen in one of them. There is also a limited time period for the bees to harvest the main nectar flows and boost up their honey supplies for winter.

If possible, set up a new captured swarm colony away from your established apiaries, until you can

determine if the hive has any diseases such as American Foulbrood, or how bad their Varroa mite count is.

**Additional risks for the post-swarmed hive include:** repeated swarming of the old hive (until it's completely depleted), new queen failure, undesirable genetics if the new queen mates with drones that are less genetically diverse, workers laying eggs (inefficiently and ineffectively), and robbing. The number of varroa mites in the colony will also exponentially increase, as the remaining bees are mainly from the brood chamber, where varroa would be concentrated (5/6th of the mite numbers will be in the brood). Use oxalic acid to treat for varroa.