

This module was prepared for members of the New Westminster Beekeeper's Association and are intended to be augmented by hands-on experience in the bee yard.

Swarms are a natural occurrence. It is how bees propagate. We have babies, bees swarm!

## Swarming

Swarming is natural. It is how the species grows in numbers and relocates to take advantage of new forage opportunities and at the same time leave behind predators, pests, and disease. The process to swarming is as follows:

1. When the three preconditions are met, the colony starts the swarming behaviour,
  - No room for the queen to lay eggs,
  - Congested brood nest such that the worker bees cannot smell the queen,
  - Abundance of nectar and pollen in the environment.
  - [Watch closely for 5/8 population]
2. The start of swarming behaviour is invisible to the beekeeper,
  - Worker bees stop feeding the queen to reduce her weight so she can fly,
  - Worker bees remove dozens of fertilized eggs from where the queen has laid them and move the eggs to the bottom of the hive. When the eggs hatch into larvae, worker bees feed them copious amounts of royal jelly which changes the physiology of the insect and grows into a queen bee that lives 4+ years, rather than a worker bee that lives 45 days,
  - One or two days before the first of many new queen bees emerge from the pupa stage, usually in the afternoon between 2 and 4 pm, 5/8 of the population leaves with the old queen,
  - Once outside the hive, the queen lands on a tree or bush and the worker and drone bees that emerged with her, form a cluster around her while scout bees leave to find a new home for the new colony,
  - The swarm will remain clustered for between 3 hours and 3 days before leaving to their new home,
  - The first virgin queen to emerge from the old hive, stings to death all of the other queens while they are still in their pupal casings.

### Cost to the Beekeeper

Each swarm that emanates from a beehive costs the beekeeper approximately \$100 in lost honey production. To prevent swarming, good bee management requires that the beekeeper ensures that there are no more than five frames of brood in the hive from March 15 to July 15



## Swarm Prevention

It is fairly easy to prevent swarming. When a colony is at 5 frames of brood, remove one or two frames and replace with empty drawn comb so the queen has room to lay more eggs. Check your colonies once every 10 days from April 1 to June 30 and remove brood as required.

What to do with removed brood?

1. Start a new colony to replace winter dead outs,
2. Boost weaker colony(ies),
3. Make a nucleus colony for sale,
4. Sell brood frame to another beekeeper to boost his/her colonies

### Starting a new colony to replace winter dead outs:

Make a 4/7 unit and move three kilometers away for one month, then return the colony to your apiary.

1. Walk-away Split (super-fast to make, but you need to come back to remove the bees),
  - a. Remove 4 brood frames from 2 or 3 strong colonies,
  - b. Brush off all bees
  - c. Place in a pre-prepared brood box with 2 frames honey and pollen
  - d. Place on top of the strongest colony in the bee yard above a queen excluder
  - e. Nurse bees and field bees will immediately move up through the queen excluder to tend to the brood. The queen will not.
  - f. That night, or sometime in the next two days, remove the new split and 'walk away with it' to a bee yard 3 kilometers away and add a new queen (do not uncork – manually release the queen in 3-5 days),
  - g. Return split to apiary in one month.
  
2. Regular Split (takes a long time to make, but you do not need to return to the bee yard),
  - a. Identify colonies that will give up brood (any and all 5/8 or larger),
  - b. Find the queen, remove her with the frame she is on and place to the side of the colony,
  - c. Remove brood frame with bees attached and place into pre-prepared brood box with two frames of honey and pollen,
  - d. Add shake of bees from a brood frame,
  - e. Once you have 4 frames of brood and 1-2 shakes of bees, close up the new split and move it 3 kilometers away,
  - f. Add new queen to the split (do not uncork – manually release the queen in 3-5 days),
  - g. Return the split to the apiary in one month.



### Boost Weaker Colony

1. Remove frame with hand-sized brood patch of mature pupae or hatching bees,
2. Brush off adult bees,
3. Place brood frame in a weaker colony, between the 1<sup>st</sup> and 2<sup>nd</sup> brood frame



### Make a Nucleus Colony for Sale

1. See 'Starting a New Colony to Replace Winter Dead Outs',
2. Make split with 2 frames or 3 frames of brood instead of 4 frames,
3. Sell for \$200 to \$280 with 1 frame of honey and pollen,
4. Add a box and empty frames to fill it for another \$75.



### **Sell Brood Frame to Another Beekeeper to Boost his/her Colonies**

1. Remove brood with bees, add shake of bees (make sure no queen),
2. Place in transport box (screens for airflow),
3. Sell for \$40 per brood frame with bees,
4. (Bees can easily be held for 3-4 days if confined to the transport box).



## Swarm Capture

Swarms are usually docile and can be handled without gloves. The queen is in the centre about 1/3 down from the top.

### Swarm on a tree branch

1. Bend branch over a cardboard box or large pail and shake vigorously to knock bees off. Immediately pour the bees into a pre-prepared brood box with a frame of honey and pollen on the ground below the swarm. Ideally, the box will also have a fresh frame of brood with no adult bees.
2. Come back at night and remove from the area. Does not need to be moved 3 km away.



### Swarm on the ground or low bush

1. Place pre-prepared brood box with the entrance facing the swarm. Lightly smoke the bees to move them into the box.
2. Come back at night and remove the from the area. Does not need to be moved 3 km away.





### Swarm on the bowl of a tree or on a flat wall high above the ground

1. Use a bee vac. It will take 45 – 60 minutes, but you do not need to reattend in the evening.
2. Pour bees from the bee vac into a pre-prepared brood box in your apiary. Ideally, have a fresh brood frame inside the box with no adult bees.



### Swarm Care (Similar to Package Bee Care)

1. Check in 3 days to ensure the queen is laying and the bees are consuming honey that you provided,
2. Feed 1 gallon syrup and pollen patty one time only.



End.