



Splitting Your Hive

Why split your hive

Splitting a hive can be beneficial to both bees and beekeepers. Both should get what they want:

- An additional hive for the beekeeper to increase honey production or to sell as a nuc.
- Prevents bees from swarming and thus losing 50% of the hive.
- Bees gain additional space to keep the queen busy and to store more honey.

Swarming is the way bees without our assistance achieve their goals:

- Their hive may be weakened due to disease or pests, most commonly small hive beetle but more seriously American or European foul Brood.
- A strong hive may be out of room both in the brood box and or the super or both.
- Swarming is also a way in their early origins they increased their numbers and spread ensuring their survival.

Regular inspection of the hive, both brood and super, is the beekeeper's method of managing the hive in relation to disease and pest management and preventing the bees from swarming.

Allowing bees to swarm is costly from the beekeepers point of view as the hive is weakened and will take time to regain strength and in addition our neighbours may not appreciate bees seeking a new home in their home range.

When to split your hive

On the Sunshine Coast we are lucky to have a mild climate with reasonable rainfall and good tree coverage for the bees to forage.

Most beekeepers split their hives in spring, from September to January, as they are concerned to allow time for their hives to recover before the cooler winter period.

If a beekeeper makes a plan to split a hive in the first half of the year (January to April) they must analyse a number of factors to ensure they do not put their hive at risk for the period when they will be relying on their store of honey.

The best time to make a split is during the swarming season which is spring as this way you are working with the bees natural instincts.

What to check before splitting your hive

- **Climatic considerations:** weather, temperature, rainfall, local indigenous trees in flower able to provide the nectar and pollen needs of the foraging bees.
- A **strong hive** with a large number of bees: on opening the hive you must observe large numbers of bees in both the super and brood box, across the top of the hive and on each frame.
- **Favourable characteristics and qualities** of the bee-hive colony to split:
 - Docile and friendly bees.
 - Strong and healthy – resistant to pests and diseases.
 - Prolific bees – eager to maintain a strong colony and produce honey.
 - Wintering – the hive is strong in early Spring.
 - Low urge to swarm.
 - Good grooming and housekeeping characteristics.

- The **brood box** has a solid pattern of brood:
 - The brood takes the shape of a football with the outside two frames being mostly honey with the brood increasing as you move towards the centre three frames of the hive. Look for a solid block of brood being formed in the central frames (frames four, five and six) all stages – eggs, pupae and capped brood.
 - There may be the occasional empty cell but, for the most part, the brood area should be reasonably solid across the foundation.
 - Spotty coverage could be a cause for concern, since many diseases show this as a calling card.
 - Pollen and honey will form above the brood in a rainbow shape.
 - The cap on brood cells should be smooth and slightly convex. If the caps are sunken, rather than raised, then this could indicate a disease.
- **Queen cells** and their position within the hive:
 - Queen cells are peanut shaped.
 - The colony will often “build up and tear down” queen cells, with no particular intent to fully develop a new queen - a practice run.
 - If the queen cells are built along the sides of the frames then the colony may be thinking of supersedure i.e. replacing the current queen with a new one.
 - If the queen cells are along the bottom of the frames then this should be taken seriously as a sign that the colony is considering swarming.
- The availability and presence of **drones** is essential if intending to allow the hive to create their own queen.

How to split your hive

Before you split your hive using any of the following three methods, you will need:

- An empty five frame nucleus hive (“nuc”)

with the ability to close the entrance so that you can relocate the new hive to another site away from your apiary (min five kms).

- Protective gear i.e. bee suit etc.
- Smoker and hive tools
- Five frames with foundation or stickies, to replace the frames taken from the original hive.

1. A “walk away” split

This split allows the new hive to create their own queen. A novice would be advised to seek a mentor to go through the procedure as outlined.

- Take the following frames from the original hive and place into the nuc: one frame including eggs, and day three larvae (this larvae is extremely small), one frame of brood, a large number of nurse bees, one frame of pollen, one frame of honey and one frame of foundation.
- From egg to adult queen takes 16 days.
- Maturing and the mating flight can take another seven days
- The new queen should start laying on her return with another 21 days for a worker to hatch.
- This method will take between 30 and 50 days before new bees hatch.
- Timing is critical and a clear knowledge and understanding of the bee life-cycle is key. Identifying the eggs are critical as the new queen will be raised from one of the eggs rather than the larvae.
- Remember the queen has very different dietary needs and she is indulged from an early age.
- The bees will not queen just any larva. Instead a couple of days after the egg hatches the nurse bees will provide the chosen larva/e with the special secretions designed for royalty.
- Remember during this exercise the new colony will be left without foragers hence why they need adequate honey and

pollen.

- Check nine to 12 days after setting up the hive to ensure that the queen cell or cells are progressing.
- Days 12 to 30 – do not check the hive during this period as the new queen will emerge and is then away from the hive during her mating flight. A new queen can be extremely skittish. Know your life cycle.
- If all is going well the next check should be made to see that the new queen is laying eggs and that there is larvae. This should be three weeks after your first inspection.

2. Split by introducing a new queen cell

A novice would be advised to seek a mentor to go through the procedure as outlined.

- Take the following frames from the original hive and place into the nuc: two frames of nurse bees and brood including the developing queen cell or cells, one of honey, one of pollen and one frame of foundation.
- From pupae to adult the queen takes eight days.
- Maturity and mating flight can take another seven days.
- The new queen should start laying eggs on her return with another 21 days for a worker to hatch
- This method will take between 30 - 40 days before new bees hatch.
- Check the hive at day nine to make sure the cell is intact after setting up the hive and to ensure that the queen cell or cells are progressing. The queen will emerge through the bottom of the peanut.
- If all is going well the next check should be made in 21 days to check that the new queen is laying eggs and there is larvae and capped brood and new lighter coloured baby bees.
- Remember, you may not know the exact stage the queen cell is at when you place it in the new hive. You do not want to check the hive when the new queen is out of the

hive on her mating flight.

3. Split introducing a mated queen

- Take the following frames from the original hive and place into the nuc: requires two frames of capped brood with a large number of nurse bees, one frame of pollen, one frame of honey and one frame of foundation.
- This method will take approximately 21 days for new bees to hatch.
- Check the hive after two to three weeks to ensure the new queen has been accepted and is laying brood.

Please note, none of the above methods are guaranteed success.

Splitting is best done with a very strong hive as removing five frames effectively reduces the hive by 50%.

It is best to remove the new hive at least five kms from the apiary to let them settle independently.

You cannot expect to split a strong hive and immediately harvest honey as the hive needs to regenerate to full bee numbers.

Never put a super on a new hive until the bees are absolutely overflowing out of the brood box.

Your queen will live up to three years. If she is managing a normal brood there is no need to replace her. Ensure that she has enough space to lay eggs in the brood box by introducing new frames.

Remember you are effectively manipulating the genetic makeup of your hive.

The queen is the mother of all bees in the colony therefore raising a new queen or selecting a new queen from good stock is important.

In the first two splits described above, you cannot control the selection of drones as the new queens go out on a mating flight

In the third split type, you are dependent on the process of the queen breeder and the only sure way is by artificial insemination.

Remember more hives does not mean that you will harvest more honey. One strong hive will make more honey than many weak hives.

References and further reading

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