

How to Make a Nucleus Honeybee Colony

(And Prevent Established Hives from Swarming)

Step 1: Timing the Splitting of Hives



The first step before you split is to get a feel for the strength and health of your established hive.

A hive is ready for splitting when you have all or a combination of any of the following characteristics:

- All hive bodies are filled with bees
- Signs of a strong nectar flow, i.e. - bees are building comb between frames, filling top brood box with nectar.
- Drone brood and larvae are present.
- Queen cups and queen cells are present (Once you see queen cups with eggs then you must split or they will most likely swarm)
- Hives have 10+ frames of brood and eggs.

Step 2: Setting Up Your Nucleus Equipment



There are two ways to house nucleus: (referred to from now on as 'Nuc' colonies)

- A single 5-frame box called a nuc box
 - The other is by housing two 5-frame nucs in a standard 10-frame hive body, called a double nuc.
- Regardless of the type, for each nuc you'll need five frames, the hive box, cover, floor board and entrance reducer all ready to go.

Single nuc box

A single nuc, or 5 frame nuc, is basically a halve size standard Langstroth box, holding five frames rather than the full ten.

These nuc boxes can be purchased from most beekeeping suppliers, or make one yourself.

See DIY drawing on the DWBA website under "Bee Information" – "Bee Equipment".

Double nuc box

The other method of housing nucs is to double them up in a standard ten frame hive body, divided in halve containing 2x5 frames.

Once again, the types of bottom boards and covers can vary, but what makes the double nuc special is that you're modifying existing equipment to put two small hives into one large box. You can do this by inserting a wall that divides the ten frame box in two parts, being sure there are no gaps around the wall.

Comparing the two

There are plus and minus for both methods, which is why I've put both methods here. First, a single nuc is easy to carry, and you'll no doubt be carrying it from one place to another as time goes on. Double nucs are a bit heavier, and a bit more difficult to move. Sometimes the bees will drift from one nuc to the other if the entrances are side by side instead of staggered on either end. The advantage of a double nuc is that these can be overwintered because the walls in common helps the baby hives stay warmer should you be overwintering them. Plus, having two boxes in one saves room in your apiary.

Step 3: Choosing Frames for the Split



First, locate your queen in the mother hive. You need to note where she is, so she doesn't accidentally end up in your nuc.

Next, look in your brood frames to find two that are filled with pollen and nectar or honey.

You'll want to be sure to choose the right frames to make your split. Your bees are going to need a lot of food to keep their queen larvae fat and happy, and the more food they get the more and better queens they can make. Those two food frames go on either side on the outer edge inside the nuc.

Next, you'll look for the right frames to get the new population of bees for the nuc going.

This may vary depending on how your nuc will get its new queen.

The main methods for getting a new queen are:

- A. Let the nuc build their own queen cells from existing eggs and comb,
- B. Place a queen cell that is already made in the nuc, or
- C. Buy a queen and introduce her with a cage.

(I explain the three methods in the following steps.)

Step 4:

Method A: Let the Nuc Make Their Own Queen Cells



The easiest way to make a split is to let the nuc make its own new queens. You'll want to do this if you like the genetics of the mother hive and want to propagate more hives with those characteristics.

It takes a total of 27 days for a queen to morph from a tiny egg to a laying adult, so you'll need a little bit of patience.

Start with two frames of honey and pollen as outer frames in the nuc.

From the mother hive you'll then take three frames of mixed capped brood, open brood, young larvae and eggs including all the adhering nurse bees and put them into the centre.

As the capped brood emerges, you'll have even more nurse bees, since this is the first task of a newly hatched baby bee. All these nurse bees will take on the task of feeding and caring for the new queen to come.

The nuc will sense within hours that they are missing the queen. They'll choose the best 4 day old or younger larvae to begin building a special cell to house their new queen.

You may also have a swarm cell already built out and ready to go from the mother hive. If so, then you're a bit further along on your task. Carefully place the frame with those cells into the centre of the box so they have the most warmth and attention.

It is also important do a regular check on available food.

Make sure they have at least one frame of pollen and honey, if not, consider feeding.

Method B: Bring in an Existing Queen Cell



1. Place your two frames of honey and pollen as the outside frames in the nuc, just like you do for all methods.
2. Then you'll choose frames with capped brood only. Ideally those frames will have pollen and honey around the brood towards the outside of each frame. Frames completely filled with brood are fine too. Choosing frames without eggs gives a greater break in the brood cycle, and gives an even better chance that the mite population will drop in the hive while your new queen is out on her mating flight.
3. Wait a day or 2 before you place the new queen cell in the hive. This will ensure that the hive is ready to accept another queen, since they'll have figured out by now that they have no queen. Be sure to inspect each frame to make sure you didn't miss any queen cells and that the nuc hasn't built any cells of their own.
4. Wrap your new queen cell in aluminium foil before you place it in the hive. This helps to block the smell from the mother hive and keeps worker bees from chewing through the queen cell and killing her before she has a chance to hatch. Choose a brood frame that has some empty space and simply push the plastic edge into the comb without damaging the queen cell.
5. Place that frame in the centre of the brood frames.
6. If you're placing an entire frame with a queen cell attached, then make sure to give that frame a gentle shake or brush to remove all the flying workers. This keeps bees from the two different hives battling each other. The bees that remain clinging to the frame after you shake it will be nurse bees, and they won't care what hive they're in so long as they can do their jobs. Gently place the queen cell frame in the centre of the hive so it stays warm and well-tended.

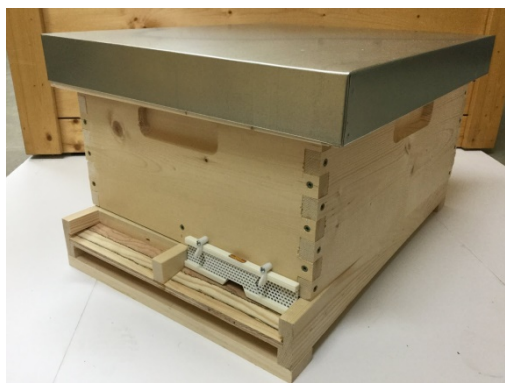
Method C: Introducing a Young Mated Queen



You'll want to have your nuc ready before your queen arrives. To set up the nuc, start with your two frames of honey and pollen placed to the outer edges inside the nuc box. Then, as with introducing a queen cell, you'll choose three frames from the source hive with capped brood only and plenty of nurse bees to look after it. Give the nuc a few days of being queenless before you introduce a new queen. As the pheromones wear off from their old mother queen, the nuc will be eager to accept a new queen.

The minute your queen arrives, inspect the nuc to make sure you don't have a queen or any queen cells, and simply hang the queen cage in between the centre frames. Place it so that the mesh is facing out so she gets plenty of air and make sure, the sugar blocked queen exit is facing slightly "uphill".

Step 5: Finishing a Split: Big Time Bees



Now that you've set up your nuc colonies, they desperately need adult foraging bees to ensure it thrives. The very best way to get this is to place that nuc in the location of the mother hive.

All the foraging workers out in the field will return to the old location, and they won't care that instead of landing in a full sized hive, they're crammed into a tiny nuc. This will greatly boost the population of the nuc, ensuring that there will be plenty of pollen, nectar, and bees to make and look after the new queen. Plus, the mother hive will suddenly have a drop in population, making it less crowded. This method will definitely reduce the urge to swarm,

Step 6: Verify That You Have a New Queen



Check regularly to determine whether you have a laying new queen and a building population and check if they need supplemental feeding.

When and how to check

A. a nuc making their own queen from larvae: it will take four to five days before the queen cells are capped, and another eight days for her to hatch. It takes a total of 27 days for a queen to morph from a tiny egg to a laying adult, so you'll need a little bit of patience. Don't check a hive while a queen cell is not yet capped, as the cells are very delicate and can be easily crushed. After the cells are capped on day 6, then the risk is lower for damage to the pupating queen, but.... be careful or leave them alone for at least 3 weeks.

B. inserted a capped queen cell; you'll have up to eight days before the queen hatches. Once the queen hatches, she will battle any other newly hatching or pupating queens she finds in the nuc. Then she will take her mating flights, going out for up to seven days before she settles down to begin laying. During this time it's best not to disturb the new queen and her nuc.

C. inserted a new queen in a cage, check after 3 days to see if the bees have taken the sugar blockage from the queen cage and released and accepted her. If they look calm and are feeding her, all is OK. Check again in a few more days to verify that she is laying.

When enough time has gone by, verify the queen's presence by looking for eggs. If there are no eggs, then give it a few more days and check again.

(Sourced from: <https://www.instructables.com/id/How-to-Make-a-Nucleus-Honeybee-Colony>)