

# Split Techniques

by Pam Fisher

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Beekeepers spend much of their time worrying about preventing swarms. Some beekeepers will cut queen cells out of a hive or clip the queen's wings in an attempt to prevent a swarm. But swarming is the natural reproductive behavior of a healthy colony and a successful beekeeper will work with the bees rather than against them.

One of the easiest ways to prevent swarming is to make splits to ease congestion in the brood nest. Splits can be made in several ways:

1. Splits made with the original queen mimic the natural conditions of a swarm and are sometimes referred to as an artificial swarm. By removing the queen from a large colony and allowing them to rear their own replacement queen, the colony benefits from the break in the brood cycle and the resulting reduction in Varroa mite population. With this method the beekeeper maintains a strong colony during the nectar flow for maximum honey production.
2. Splits can also be made with either queen cells or eggs from a colony of the beekeeper's choosing to perpetuate a line of bees with superior traits that are acclimated to the local area. The new split benefits from the break in the brood cycle but the parent colony does not. Again, the beekeeper maintains a strong original colony for good honey production.
3. Splits can also be made with a purchased queen to produce an immediate nucleus colony. Removing some of the bees does help to reduce congestion in the parent hive and reduce the tendency to swarm but it does not break the brood cycle. Furthermore, purchased queens are untested and not acclimated to local conditions.

To make a split using any of the above methods, begin with one or two strong parent colonies having five frames or more of brood. If the bees are to rear their own queen, drones should be present in the beekeeper's colonies as an indicator of a good drone population in the area to provide potential mates for the new queens.

Making an artificial swarm is simple - remove three frames of capped brood and nurse bees along with the original queen and place them in the center of a 5-frame nuc box. Add one frame of honey and pollen and one frame of drawn comb or foundation to the nuc box. Move the nuc box to a new location. Nucs made with an old queen are not suitable for sale. Make sure that you leave at least one frame containing eggs or two queen cells along with three frames of brood in each parent colony. Fill the space in the parent colony with either drawn comb or foundation.

If you left eggs in the parent colony, check back in 5 days and remove any *capped* queen cells; the bees will have started with too old a larva which will result in an inferior queen. Leave two open queen cells with larvae and royal jelly to develop into queens. Excess open queen cells can be made into more nucs with brood from other colonies.

Check back in three to four weeks for a laying queen and again two weeks later for a good brood pattern. If you left queen cells rather than eggs in the parent colony, let them develop and check back in two to three weeks for a laying queen with a good brood pattern.

To make a split with eggs or queen cells, identify the queen in each parent colony and set her aside with at least three frames of brood. Remove two frames of capped brood and one frame with eggs or queen cells along with nurse bees, placing them in the center of a 5-frame nuc box. Add one frame of bee bread consisting of pollen and honey stores. Fill out the other space with either drawn comb or foundation. Reduce the entrance on the nucleus colony, move the nuc to another location and feed 1:1 sugar syrup. Return the queens to the parent colonies and fill the vacant space in the parent colonies with either drawn comb or foundation.

If starting a split with eggs, check the nucleus colony in 5 days and remove any *capped* queen cells. Leave two open queen cells with larvae and royal jelly to develop into queens. Check back in three to four weeks for a laying queen and again two weeks later for a good brood pattern. If making a split with queen cells, you may not know how old they are; let them develop and check for a mated laying queen with a good brood pattern. Splits made with this method are suitable for sale following state inspection.

To make a split with a purchased queen, follow the instructions above using 3 frames of capped brood with nurse bees, one frame of bee bread and one frame of drawn comb or foundation in a 5-frame nuc box. Introduce a caged queen. Check in two to four days to make sure the queen has been released and inspect again for a good brood pattern in another week.

Age of Larva	# of Ovarioles	Avg. Qn. Weight
½ day	314	
1 day	320	208 mg.
2 days	321	206 mg.
3 days	302	163 mg.
4 days	30 – 200	118 mg.