

Inland Empire Beekeepers Association

Sure Fire Requeening with Nucs **By Bob Arnold**

The number one task for beekeepers is keeping young vigorous queens in each of our hives. This gives us the best chance of making a good honey crop and in keeping our hives alive through the winter. We will need to replace every queen eventually with a new young queen. This can be very difficult in a strong colony! It is guaranteed that all of you, whether you have one hive or 10, will face this challenge within 2 or 3 years of your beekeeping experience.

Requeening a hive can be quite simple and almost foolproof when using a nucleus hive or what is commonly called a nuc. So what is a nuc? A nuc is a small hive consisting of 2 to 5 frames of young bees, brood, honey and pollen that is assembled from a larger hive or hives. Frames of bees, brood and honey are removed from a larger hive and put into the nuc with a laying queen, virgin queen or queen cell. The nuc can then be removed from the location to a new site several miles away or placed in the position of a larger hive which is moved to a new position in the apiary.

Five frames of bees, brood and stores with a laying queen can be introduced into any size hive with 100% success. Having the 5 frames will make a weak August hive that needs requeening good enough to winter. A 3 frame nuc will not! The five frame nuc can be introduced into a strong hive anytime of the year (including the depths of winter) with guaranteed success.

What kind of equipment do you need? The best nuc box is designed to hold 5 deep frames of bees, brood and stores with a nailed on bottom, reduced entrance size and room enough to place a standard queen cage between the frames. A 9 5/8 inches wide box is quite adequate. Boxes that have room for less than 5 frames will work fine but have less flexibility. The entrance can be reduced to a 3/8" by 4" opening which is adequate for a hot day or one filled with marauding yellow jackets. The frame rest rabbets are standard dimensions of 5/8" x 3/8" with an outside box dimension of 19 7/8" long x 9 5/8" high and 3/8" for the bottom board cleat. I like to put 2x4 green plate on the bottom board to keep them off the ground and to move easily in the bee yard with a hand truck. I also use 4 cleats on the migratory type lid and hand cleats on each end of the box for easy handling.

The best time to make up nucs is during the swarming period of the year during late May or early June. At this time there are a lot of young bees, brood and stores available and the bees will accept being put into a new box with strangers from other hives with the least difficulty. The nucs are best made up from one or more of your strongest colonies by simply removing frames (without the queen!) of mostly sealed brood and frames with capped honey and pollen. You can assemble frames from 5 different hives or from one hive during this period of the year without any danger of fighting. For insurance make the fifth frame a frame type feeder and put some feed on at the same time you assemble the nuc.

Inland Empire Beekeepers Association

The procedure for making up the nuc is to first select hives that are strong and need to have some brood removed to reduce the swarming tendency. I like to then put a queen excluder between the two boxes checking first that each box has sufficient capped brood for the nuc. Then I return after three days and locate the box with the queen by finding freshly laid eggs. The brood, bees and stores are removed from the other box and replaced with drawn frames or foundation and the hive is reassembled without the queen excluder. You may also avoid the three day wait by simply finding the queen and setting aside the frame while you pick your nuc frames. During this process it is best to minimize the amount of smoke and disturbance to the colony to keep the young bees on the frames. If you select two or three sealed brood frames and one or two frames of stores all with attached bees you will have an excellent start for a 4 or 5 frame nuc. It is best to have at least 3 of the four or five frames covered with bees to insure sufficient bees for feeding and warming the brood and queen.

It is best to re-locate the nuc in another apiary a few miles away to prevent drifting of the bees back to their parent hives. Block the entrance with some grass or paper they can remove in a day or so, this will help them get adjusted to the new hive and location before they fly away and get lost. If you cannot move to a new location put the nuc in the place of a strong hive that needs some swarm control and is moved to a new location perhaps 10 feet away in the same apiary. The field bees of the strong hive will drift to the original location, where the nuc is located, keeping the population strong in the nuc even though some of the bees from the nuc drift back to their parent hive location.

Once the nuc is prepared and in position you can introduce a virgin queen, queen cell or a mated queen on the same day. It is best to control when the mated queen is released by leaving the cork in the queen cage candy end for two to three days and then just pulling the screen off and releasing the queen. If you have a good nectar flow this can be done without much risk to the queen. Your best bet is to put feed on the nuc the day you make it up then you insure the very best conditions for release of the queen.

I prefer transferring the purchased mated queen from the mailer cage to a screen cage for the introduction. The screen cage is made by forming a 2.5" x 4" piece of 1/8" hardware cloth on a 3/8"x 3/4" x 6" stick. The hardware cloth is soldered together at the longside overlap and the bottom is pushed tight together on the end of the stick. A removable plug is made for the open end out of a 3/8"x 3/4" x 2" stick and is fitted into the cage. This plug has an attached wire thru the plug which then can be passed through the cage and another hole in the plug once it is in position in the cage insuring that the plug doesn't accidentally come out! The queen is gently coaxed into the cage while you are in a truck or car cab or small closed room where the queen can be confined if she gets loose. If you can do the transfer where there is some bright sunlight through a window and the queen gets loose she will usually fly to the window. Note that the queen will fly away if she gets out of the cages! You can pick up the queen by the wing or thorax. The queen will not sting you.

This cage is put between the frames above the capped brood with the broad side of the cage exposed to the bees. Come back in three days, gently remove the plug without

Inland Empire Beekeepers Association

agitating the queen, and just set it on the top bars for the queen to walk out. If the queen becomes agitated wait until she settles down or wet her with some sugar syrup so she can't fly then pull the cage plug as above. Put the nuc top on and recheck in a week. You will have a fantastic new hive!

Another way to queen the nuc is to use a swarm cell. Often when you are checking your hives in May and June you will find one that is ready to swarm with many capped swarm cells. These hives will often issue many swarms leaving the hive useless for producing any honey. Swarming is best controlled earlier by making up nucs from these strong hives reducing hive strength before they get the urge to swarm. However, some always slip through the cracks and start the swarming which once started is usually impossible to stop. If the original queen has already left with a swarm the best you can do is to split the remaining hive into two separate hives and move the hives to a new location leaving a single ripe cell in each box. Now you may have several other cells that are ripe and available for a nuc. Simply put these cells, I like to put two, in each nuc above the capped brood. These cells will eventually hatch and the new queens will mate and you will get a nice new hive.

Sometimes these swarm cells will be hatching right in your hands! Alas all is not lost. Simply catch the virgin queen and put her in the screen cage you carry in your bee suit pocket and get busy making up a nuc right on the spot. Once the nuc is ready release the virgin queen in the entrance giving them a light puff of smoke and go away! The bees will not kill a virgin if they are queenless especially during the swarming time of the year.

So what do you do with the nuc? This is the easiest part. If you have a hive that you wish to replace the queen here is a tried and true procedure that will work 100%, or nearly so, of the time. Inspect your nuc checking the presence of eggs, brood and a queen. Set the nuc nearby the hive you wish to requeen. Find the old queen in the hive you wish to requeen. Take her frame and the 4 more frames with brood, bees and stores out of the hive and set aside making certain not to drop the old queen on the grass. Set up the old hive with the bottom box full of frames. Take 6 or 7 frames out of the top box and then put in the 5 nuc frames in the same order and then the remaining frames filling the box and setting it back on the hive. The old queen and her frames are placed in the nuc box and set in the nuc box location.

If the bees are not in a honey flow it is best to use newspaper to combine the nuc with the old colony. After finding the queen and removing 5 frames from the hive shake all of the top box bees into the bottom box and place a sheet of newspaper over the bottom box. Place the frames of the nuc into the top box and then on top of the newspaper. The bees will break thru the newspaper within a day and combine with a minimum of fighting. The old queen and 5 frames are put into the nuc as before.

This method gives you your old queen with bees, brood and stores in the nuc box still going to town if by chance the nuc doesn't work. You can always dispense with the old

Inland Empire Beekeepers Association

queen after the nuc has been accepted. You should check back perhaps a week later to make certain that your new queen is laying.

It is good policy to have 10% of your hives covered by spare nucs. The nucs can be used anytime in the summer for replacing bumper queens. These nucs can also be wintered in a single deep fed with 25# of sugar over a double screen on top of a strong hive. The cost of \$9 of sugar and \$5 of medications is much cheaper than a package that will have a questionable queen in the spring. Plus you have more insurance for that strong hive that goes queenless in March.

Well it is easy to write and read but something else to do. I will be happy to show interested beekeepers this May and June. But get ready—you need to make up the equipment now and be ready before the event happens! I will bring a nuc and queen introduction cage for the January meeting.