

Making Overwintered Nucs

by Erin MacGregor-Forbes

This article was developed based on the materials from the hands-on “making overwintering nucs” workshop that Erin taught through Cumberland County Cooperative Extension. Use of divided hive bodies is the most economical way of creating nucs and utilizing equipment most beekeepers have on hand (traditional bottom boards and covers are used). Nuc creation and management methods can easily be adapted to utilize traditional nucleus colony equipment in whatever configuration you have on hand.

The goal of making summer nucs for overwintering is to provide a strategy for New England beekeepers to obtain locally raised increase/replacement colonies in the early spring. Due to climactic conditions, it is not feasible to raise and mate northern queens in the early spring months in New England. It is for this reason that we raise our queens in the spring and summer of the previous year and support them with a small (nucleus) colony through the winter. The following spring these overwintered nucleus colonies are used by beekeepers to replace deadout colonies, increase colony numbers, or provide income to the beekeeper by offering these nucleus colonies for sale.

The queens

While summer nucleus colonies can be started with commercially raised queens from the south, it is preferable to head these colonies with northern raised queens for several reasons.

First, and foremost, it is vitally important that as beekeepers we support our locally

available resources for bees and queens and promote ways for New England beekeepers to maintain their beekeeping operations in a profitable and sustainable manner.

Northern raised queens are the daughters of queens who have headed colonies that have survived winters in New England. These daughters of the surviving colonies should exhibit many of the characteristics of their mothers, therefore enhancing their ability to survive in our environment. Northern raised queens are produced in small “back yard” to mid-sized boutique beekeeping operations. Queens raised under these conditions are generally fed a more natural diet, less medicated, and better mated and therefore hopefully longer lived than commercially raised queens from the south or west.

Backyard or boutique raised queens generally spend a longer period in their mating nucs, allowing the beekeeper additional time to assess laying pattern. The longer period in mating nucs also allows the queen to fully develop physically, ensuring that she is producing the full complement of pheromones prior to caging and shipping. Locally raised queens spend less time in transit from their mating/holding colony to your own colony. The longer the queen spends outside of a colony, the more her reproductive organs become stressed and actually atrophy. Shorter traveling time reduces this stress on the queens.

Timing

Summer nucs are generally made in New England from mid-late June until mid-late July, depending on seasonal weather conditions. Nucs made early will need to be monitored for building up too fast (remove brood to reduce congestion and shrink colony size or expand nuc boxes by adding additional space). Nucs made late will need to be fed and possibly given stores in order to allow them to adequately prepare for winter.

Equipment

The nucleus colonies can be made into your own five frame equipment and then transferred to a divided box for wintering once the fall flow has ended and the bees have begun to cluster. This transfer is best done in the late morning or at mid day on a day which is warm enough for the bees to move around inside the box but not warm enough for substantial flight (daytime temps in the 40's – low 50's).

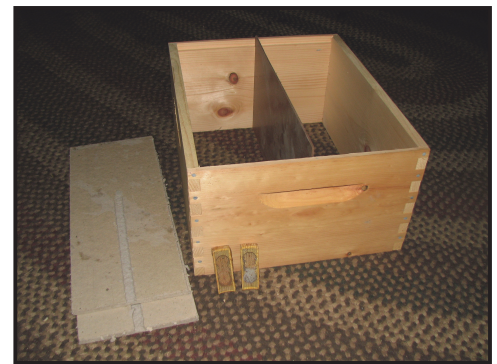


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Making the nucleus colonies

Our goal is to create a colony that will spend the remainder of the summer and fall building up to fill the five frame nuc box with bees and stores for winter. It is important to not make the colonies too strong, as they can quickly outgrow their space and swarm. Early in the season (mid-June) I make my overwintered nucs with one good frame of mostly capped brood, one frame of nectar and pollen or honey and pollen, one frame of “space” (drawn comb with worker size cells and few resources) and two frames of foundation.

Later in the season (July) I increase both the amount of bees/brood and resources, meaning one and a half to two frames of brood, one full frame of resources and one frame with about 50% resources, 50% available laying space, and one frame of foundation. The last nucs of the year will be made with all drawn comb, no foundation (end of first week of August at the latest).

It is best to leave the nuc queenless for a period prior to installing the queen. 24 hours is generally recommended for

requeening colonies, but in making nucs, I tend to leave the colonies queenless for a much shorter period, usually one to two hours. In general, I make up my nucs one after another, and then I return and add the caged queens starting with the first nuc I made up. (Research has shown that bees will recognize queenless status and begin changing behavior in approximately one half hour).

Install the queen between the brood and the resources so she will be directly in contact with the cluster of bees and the area where they are accessing food. Our queens are in wooden cages so it may be necessary to either crush the comb in an area to make room for the cage or to remove a frame of foundation until the queen is released from the cage. In the case of removing a frame (and therefore violating bee space with the queen cage) be sure to return to the colony within 48 hours to remove the queen cage and any burr comb built by the bees. Once the queen is released and the cage is removed, check briefly for eggs to ensure that the queen is laying, and leave your nuc alone for at least two weeks. The brood you put in the nuc when you set it up will be hatching and the new brood being laid by the queen will not quite be of hatching age after two weeks (you will however need to monitor the feeder, if you are feeding).

Managing Your Nucleus Colonies

It is best not to micromanage your nucs. That being said, nucleus colonies are generally less defensive than full sized colonies (less guard bees) and easier to work than full sized colonies (less bees per frame and less frames to look through), making them an excellent learning resource for the intermediate level beekeeper.

Feeding can be accomplished with jar feeders (in the event only one side needs feed, place something solid over the second nuc's inner cover hole to prevent the bees from accessing the space above). Use an empty medium or deep box to create space for the jars and replace the telescoping cover above.

You do need to monitor your nuc's build-up through the summer and fall. If the nuc becomes crowded, remove a frame of brood and replace it with a frame of mostly space or resources. I generally like to see my nucs with two full honey walls, one on each side and a small football sized cluster of bees and space on three frames totally surrounded by honey as they get ready for winter (September 20th). You can feed your nucs through the hole in the inner cover with a jar that totally covers the hole (in divided hive boxes with two nucs do not allow the two colonies to cross over into each other's space) but all feeding should be done by October 15th.

You can also super your nucs and allow them to continue to grow (preferably with drawn comb) or if you have a strong nuc late in the season that doesn't have much stored honey, you can super them with a medium or deep of honey.

Wintering the Nucs

I start packing my nucs above parent colonies for winter on November 1 with the goal that all will be up and ready for winter by the end of Thanksgiving weekend. Try to move colonies within yards on a nice day when the temperatures allow the bees to move within the box and maybe fly a little, but when the immediately following forecast will keep the bees in the box (rain or cold).

The divided hive box configuration is designed to be used with a solid bottom below – this can be the inner cover of the parent hive with the inner cover hole blocked on both sides by duct tape and the inner cover turned so the notch is down, or this could be the homasote insulation board of the parent colony in the event that homasote is used. The idea is that you will place your divided box with the two overwintering nucleus colonies on top of a larger parent colony above the inner cover or homasote and under the telescoping cover. This reduces the need for additional equipment, raises the nucs up out of the snow, and provides some heat gain from the colony below.

Your nucleus colonies above will prevent you from being able to check the parent colony below until spring when you remove the nucs. I suggest leaving “extra” stores on the parent colony, meaning two deeps plus one medium or the equivalent with your equipment configurations (four or five medium boxes, if in all mediums).

Cover the entire box with a traditional telescoping cover.

You can check your nucleus colonies briefly in winter on the occasional 50 degree day we find in late January. The best way to feed your colony is to add an additional box (super or deep) of honey if they need it. You can add a full frame of honey on a warm sunny day but this is more disruptive than adding honey above.

Check your colonies again in late spring and feed if necessary. If the weather is warming (April), syrup can be fed, or dry sugar can be fed in March if they need feed at that time and you have no honey.

Surviving overwintered nucleus colonies are some of the best organized, most motivated colonies I've ever seen. Unpack them from the parent colonies between April 1 and April 15 and move them into full sized equipment as soon as incoming nectar becomes available in your area (dandelion bloom start – generally early May).



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