

'Bout a 100 – Sideline Beekeeping

MAKING NEW COLONIES DURING THE LATE SPRING & SUMMER

More & More Sideline Beekeepers Are Making Their Increase During Late Spring & Even During The Active Nectar Flow

Larry Connor

More and more sideline beekeepers are moving away from the traditional early-Spring increase mindset. Instead of making colonies in March or April, they are actively making their increase during the late Spring (post fruit bloom in most areas) and even during the active nectar flow by using the colonies unlikely to produce surplus honey. This follows the natural hive instinct to swarm during this period, and utilizes the behavior of the bees to brood up and build queen cells to full advantage. Swarms start in March in Texas and in April in Michigan, but peak in April-May in Texas and late May-early June in Michigan (both are big states with many climate zones). But keep in mind that the nectar flow is often over for the Texas beekeeper about the time it just gets going in most of Michigan.

An increase colony is a subdivision of a larger hive. Langstroth called them *nucleus hives*, which he established with a brood comb and adhering bees, plus an additional shake of bees if needed. He would utilize queen cells from swarming, or would force a colony to produce cells. Not much has changed since 1860 in terms of our basic knowledge on making up increase colonies, except that the number of variations on this theme is nearly endless.

Who is making Summer increase?

The primary group of beekeepers using Summer increase colonies are over-wintering these colonies as nucleus hives for the next season. There are several advantages in doing this.

First, it is easier to produce your own queens or to obtain locally produced queens or queen cells when you

wait until the fruit bloom to produce queens. Many of us have just read about the advantage of having queens that have mated with many drones. It is easier to have a larger, genetically more diverse population of drones later in the Spring than in late Winter or early Spring. So far we have learned that queens that have multiple sexual partners are more likely to resist severe disease attacks, have better control of their colony's temperature, and are more attractive to retinue bees. If there is an evolutionary advantage to multiple mating in bees, as there appears there is, then it is highly likely that worker bees have developed methods to detect those queens with a dozen or so mates rather than the ones that have mated with only one or two drones. The worker bees take better care of the queens with multiple mates. Again the swarming season in hives is timed to occur when the maximum number of drones is produced from the greatest number of colonies.

There has been tremendous interest on the part of many sideline and commercial beekeepers to produce their own queens, as evidenced by the six queen rearing courses I am teaching this season. The interest in locally produced queens is huge right now, and fits into two trends, the need to use stock that is locally adapted that may have been selected for mite resistance; and the trend to produce food and other goods locally.

Second, based on a prior generation of beekeepers, including England's Brother Adam, creator of the Buckfast strain of bees, American beekeepers like Kirk Webster and Mike Palmer, both of Vermont, have been producing summer increase colonies for well over a decade. This has stimulated other beekeepers to try this themselves, often

Collin County Hobby Beekeepers sponsor a bee school every Spring run by John Talbert at his apiary in Josephine, TX. He is helped by Texas Beekeepers Association president Ted Vance and 18-year old Blake Shook, VP of the Collin County group. Each class member, which includes 19 teenage scholarship students, receives a colony as part of the class. Some prior year students return with their parents to obtain additional colonies. Each colony is made with two frames of brood and bees, and placed against one side of the 10-frame box. The student/class members provide the hive body, the bottom board and lid, and eight frames to fill out the box. These colonies were set up in April and the colonies went home with the students at the end of that month.





The mating yard used by Texas beekeeper Ray Latner near the Dadant branch in Paris, TX where he is the manager. The colonies are set out on high, dry ground and out of the way of the prevailing wind (that always seems to blow in the spring). While used for several cycles for queen mating, they can also be used to provide nucleus hives. Note that these are not standard deep frame equipment. The jars are filled with syrup and fed to the bees during buildup. It was mid-April when I took these photos, so the flow was underway and feeding had ended.

with great success.

For some, success with over-wintering nucleus hives can be overwhelming. In March I spoke at the Kentucky Beekeepers meeting in Frankfort. As I was setting up my book display a man walked up to the table and said that he has purchased my book, *Increase Essentials*, the prior year, and had used the information in the book to produce Summer nuclei which he had over-wintered. I asked him how the increase colonies had done during the Winter. They were all five-frame nucleus hives.

“One out of 24 died,” he said, seeming somewhat upset.

“Well, aren’t you pleased with that?” I asked, totally confused.

“No, can you please tell me what am I going to do with 23 nucleus hives!”

I suggested he let folks at the meeting know that he had nucleus hives for sale, and he was later spotted wearing a second nametag that indicated he had Kentucky-raised, over-wintered nucleus hives available. I believe he had them all sold that morning.

Well, that is a great experience, but I would never tell anyone that they would do that well. But if the beekeeper



Empty jars on mating nucs or increase colonies. The jars remain in place to keep the feed-hole covered.

sold the nucleus hives for \$75 to \$100 each in today’s market, that gave him a tidy profit for the equipment and effort he invested in the concept. It was not a poor return for the \$15 he spent on the book I sold him. Even if added in the cost of being at the beekeeper’s meeting where he purchased it (probably the Heartland Apicultural Society), I think he did all right!

Other approaches

As I said, there are many variations on this theme. In April I taught a queen rearing class for the Collin County Hobby Beekeepers, located northeast of Dallas. I have added some photos from my visit to Texas from that trip that show how folks there are raising increase colonies, making queens, and more.

The class was full, and others wanted to participate. Beekeeper and host John Talbert, a retired engineer who gives back a lot of time to the beekeeping community, had brought in colonies to use for the class. They were set down in an area where dozens, if not hundreds, of Spring nucleus hives were set up by the bee class he teaches with Ted Vance and 18-year old Blake Shook, VP of the Collin Country group.

When I asked I learned that each student had made up one or more deep hive bodies containing eight empty frames each, (they just as well could have made up the unit with seven frames and a plastic frame feeder). To this two frames of brood and bees were added. Queens were obtained from a major supplier in Hawaii, although Shook produces his own queens as the season allows.

The system is pretty simple. The two frames of brood are placed along one side, or wall, of the hive, and allowed to expand outwards into the empty combs, most of which was foundation. An open feeder supplemented food supplies. The entrances were partially reduced to prevent overwhelming drifting from one hive to another.

At the time the increase colonies were assembled the black locust was about to bloom, and was in bloom while I was there. This gives you an indication that the season is well underway, that the main nectar flow was upon them, and that the bees had plenty of opportunity to gather nectar and build in size. In late April each box of bees would be taken home to the beekeeper’s home site. They would have May and early June to build on, and then the nectar flow is usually over in that part of the country. If you want to move bees to the Chinese tallow in the southern part of Texas, this is another source in June. And then in the middle of the Summer the bees can be moved to West Texas for the cotton bloom, a crop much safer for bees now with the use of genetically modified cottonseed and the boll weevil eradication program.

The timing of your local nectar flow must be considered when you decide if and how to use increase nucleus hives. At another meeting this season, this one in Western Pennsylvania held in late February, I had a long discussion with many of the participants about the state of their nectar production in much of that area. In a few parts of Pennsylvania you might get Spring flow from Spring trees including black locust, tulip popular, sumac and basswood. But in a huge part of the state the abundance of these trees is not large enough to provide a predictable nectar flow. There are plenty of minor wildflowers that are enough to keep a colony going during the Summer months.

Instead, the beekeepers rely upon one primary nectar source for the main honey crop: goldenrod. These plants bloom in August and September in most of the northern parts of the United States, and are at times highly attractive to honey bees. In Pennsylvania the beekeepers consider the honey to be high quality and highly marketable. Beekeepers from other areas do not always share this experience or opinion or perhaps they do not share the same variety of goldenrod.

With a late season nectar flow, the increase nucleus can be made up as a method of swarm management in the mid to late Spring, and increase colonies can continue to be made throughout the season. As the goldenrod nectar flow approaches, the increase units are simply made stronger. The goal is to have a strong population of worker bees ready to forage the moment the nectar flow begins. Populations can be monitored during the Summer to make sure the bees are building to an adequate number. If not, the colony may be fed. Or the colony may become too strong and produce late season swarms. These colonies should be reduced in strength by removing frames of brood and bees and making more increase colonies!

Beekeeping would be very boring if one management plan worked for every beekeeper. But the challenge for the new beekeeper is to learn 1) What are your local floral sources, and 2) How can you best manage your bees to benefit from these flows.

A simple increase colony

In June over-wintered colonies should be plenty strong to make one or more increase colonies from them. Here are some simple steps for you to follow if this is your first time making a new beehive from an existing one:

1. Find, purchase and prepare one box for the bees. This might be a three to six frame nucleus, an 8-frame hive, or a 10-frame hive. The box and frame size may be deep or shallow size. But, remember this *must* be the size of the brood frames used in the colony you are taking bees and brood from.

2. Go to your apiary. For many sideline beekeepers that means you need to walk out to the backyard. If you have 10 colonies, I bet three or four are doing really well, three or four seem to want to catch up with the first group and the rest are sitting there, and don't seem to know the nectar flow is underway. Go to one of those colonies that will not produce a honey crop this season.

3. Smoke and enter the hive, inspecting frame by frame, searching for the queen. Since it is June there is a strong likelihood the colony is undergoing swarming and there may be queen cells. If they are sealed, the old queen probably left with the first swarm.

4. Select two frames for the new hive. One should be a frame of *sealed* brood where the center of the brood frame has emerging workers. These bees will rapidly emerge and help populate the hive. The second frame should be a brood frame with good food reserves – both pollen and nectar – in the corners of the frames. Put the frames, including the bees, into the new box. Add more bees from the brood combs if you feel the bees do not cover the frames of brood. No returning forages will be added to the bee population.

5. If you have not found the queen, carefully check the frames for the queen bee. If you have found the queen, carefully check the frames for a *second* queen.

Latner had harvested queens the day before this picture was taken. During that visit any equalization of strength was done.

We visited the nucs and added queen cells that were about one day away from emergence. The jar was removed from the feed-hole, the frames separated slightly, and the queen cell carefully



placed between the frames so the tip of the cell was not obstructed and any part of the cell was pinched. The colony was not opened and the bees were not disturbed except for removing the jar and giving the bees a light puff of smoke.

6. Move the box to its permanent location. This may be an outyard or you may keep it in the yard. If you keep the increase colony in the same yard, I strongly suggest you do two things to keep the bee population high: First, add a shake or two of bees from brood frames so you are adding young, never-been-flown-worker bees to your increase hive. Second, reduce the entrance with *green* grass so the bees cannot get out until late in the day. This will help keep some of the older bees in the hive, but many will go home the next day or two. This is why you need to have plenty of young bees emerging from the frames.

7. The day after you establish the increase nucleus, add a ripe queen cell from a colony that is undergoing swarming, or purchased from another beekeeper (someone like Ray Latner, as shown in the photos). Or install a laying queen from another beekeeper when you make up the unit, using a push-in or timed-release cage. Glance at the bee population to make sure bees cover the brood. If not, do this over again.



Ray Latner uses a simple incubator constructed from a wood box. He has added racks to hold the cell bars that hold the queen cells. A light bulb keeps the temperature around 92-93 degrees F. A pan of water keeps the humidity at an acceptable level for the cells. Not shown is the glass top, hinged to the box, which has a glass or plexiglas window that allows Latner to check the temperature of the box without opening it. The entire incubator is kept in the warehouse where customers are able to pick up cells they have ordered in advance. If the cells are caged so the queens cannot kill each other, the virgin queens may be used in mating nucleus hives if their release is delayed using a candy plug in a queen cage.



These nucleus hives were transported from Florida to Texas by Jerry Latner, Ray's father. Jerry is the Dadant branch manager in Florida. The demand for nucleus hives in the spring of 2008 has been tremendous, sparked in part by the tremendous publicity the honey bee has received due to Colony Collapse Disorder. The Latners, father and son, and I discussed how long this national trend toward many new beekeepers will continue. While it would be tremendous to replace the many beekeepers lost over the past 20 years due to parasitic mites, hive beetles and African bees, the challenge of offering education and support is critical. The use of late Spring and Summer nucleus hives will provide one way of providing bees to new beekeepers without the pressure of early Spring nucleus or package bee production.

8. Four to seven days after the queen cell was introduced, do a minimum check of the hive to see if there are eggs and open brood in the bottom of the cells. If this is the case, you probably moved a lying queen into the hive. There has not been enough time for the queen to emerge, mate and lay eggs. If you find this, the colony the brood and bees were taken from will probably have a bunch of queen cells under construction. Now you have something else to manage.

9. Between 18 to 28 days after the queen was added, check the colony for a laying queen. She should have a

nice pattern and be laying nicely. Check for stored food and feed if necessary during the nucleus formation period.

10. Manage the colony as either a nucleus that will stay a nucleus all Summer and into the Winter, or manage the colony for a fall nectar flow, moving the bees and frames into 10 frame equipment in about a month as the brood emerges. Remember, bees can starve during the Summer, and often do. The cost of a few pounds of sugar is much less than any of the components of this hive are worth.

Keep after the bees and watch them as you can. That queen may be wonderful, or the bees she produces may be mean and lazy. You can decide what to do with them.

Good luck. **BC**

Dr. Connor is teaching queen rearing in Michigan and New England this Summer. One program that does not require pre-registration will be offered by the Connecticut beekeepers Association at their annual picnic on June 14th in Hamden, CT. Dr. Connor's books are offered for sale through many bee supply dealers, and at his website, www.wicwas.com. A Pay Pal store is available on the site for those who want to have the convenience of purchase via this option.
