

# LARGE-SCALE METHODS OF MAKING INCREASE COLONIES

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*My first beekeeping book, Increase Essentials, was first published in 2006. A great deal has happened since then. Colony Collapse Disorder appeared. Many beekeepers moved away from package bees to increase nucleus production, and developed a wide array of amazing methods to make increase nuclei. Many routinely winter these colonies with different levels of success. So, as we work to produce a second edition of Increase Essentials, we will put both new and updated materials out to the thousands of people who have purchased the book. For them, I hope that they will see it as an upgrade, and for those who have not read the book, I hope it will incentivize them to read it. In this issue we continue the discussion about making increase nuclei.*

## MAKING MULTIPLE NUCLEI FROM MULTIPLE HIVES

Larger small-scale operators, as well as sideline beekeepers, become efficient in the production of increase nuclei and employ a few elements of Henry Ford's assembly line to become better able to produce a number of increase colonies in a short time period. A few commercial beekeepers have used the assembly line method in a central facility to generate increase colonies, but most seem to follow an apiary-based method similar to what follows.

**Prior planning before entering the apiary.** Beekeepers load their trucks with empty five-frame nuclei, whether 50 or 5,000. If queens or queen cells are to be added during the day of nucleus making, the beekeepers bring purchased mated queens or self-raised, ready-to-emerge queen cells from their own operation. Spare frames are brought in the nucleus boxes in case the beekeeper and helpers decide to discard any broken or extremely dark combs no longer suitable for a healthy and efficient beekeeping operation.

**Teamwork is key in the apiary.** The truck is placed so it either is central to all the colonies (if they are arranged in a horseshoe arrangement) or moved as they

work the area (if colonies are in a linear pattern). With one person on the truck, equipment is handed to others on the ground who situate the equipment near the hives. The hives in question may be overwintered colonies, colonies brought back from the almonds in California or colonies in a southern state moved to overwinter from a northern state. Often one person applies smoke to all the colonies in a row and removes the lids. A second person enters each colony and removes frames of honey, brood and empty comb which the first person places into waiting boxes and loads onto the truck.

**Division of hive assets into five-frame units.** When each colony is opened and frames removed, old queens are killed if found unless considered breeder material. All frames of brood are divided into the five-frame nuclei boxes, usually with three frames of brood and bees. A frame of honey and pollen is added along with either an empty comb (most of the time) or a frame of foundation. Queens in sealed cages are often added at this point, unable to be released until the beekeeper removes the cork or plastic plug from the cage, although some commercial beekeepers just pull these off and let matters fall as they may be. If queen cells are being used,

the increase nuclei should be moved by truck to their new location and set out on the ground, either on pallets or in rows for single handling. Queen cells are often added later in the day or a day later, after the bees have had a chance to settle down and have started foraging.

**Move colonies to a new apiary location.** Loaded onto a truck, the increase nuclei are moved to a new location and set out, often with entrances facing in different directions to minimize drifting. Some beekeepers use vibrant but mis-matched 'whoops' paint from box hardware stores to develop a colorful array of different colored boxes and lids. Others stay with the standard white hive, but stagger them in such a way as to increase orientation for workers and flying queens.

**Checking the success rate.** With mated queens, the success rate of introduction in these new colonies should be over 90 percent. With queen cells, the success rate is lower, perhaps 75 to 85 percent take. When this happens, the 'blowouts' are stacked onto queenright colonies without a great deal of ceremony. The goal is to have all of these increase nuclei shipped to their final honey production location and transferred into standard ten-frame boxes. Within a matter of days they should be





The key to any good increase program is the availability of quality queens and queen cells for a high level of success in the operation.

ready to receive their second brood box, and soon, their first super.

This completes the increase cycle. Colonies from a heavy cycle of pollination and honey production have been completely dismantled and reformed into new units with fresh queen bees. This is, I think, the most commonly used method to make new bee colonies in the United States because it is used most frequently by commercial beekeepers who manage tens of thousands of colonies. This method allows them to make increase nuclei in a very short period of the late winter and spring of each season. Richard Adee and his family employ 80 people to manage 1,000 colonies each. He manages the queen production yard himself, while each crew member obtains queens from him to put into increase nuclei before they enter the honey production regions of the Dakotas. While his family may produce the most nuclei of any commercial beekeeper that I know, his method is not unique but rather quite well tested by several decades of hard work. Nobody manages 80,000 colonies of honey bees without a great deal of expertise and experience.

#### THE TEXAS SET-OFF: PRODUCING EQUALIZED INCREASE COLONIES

Success of the previous method of making increase nuclei depends upon the judgment of the humans who make the division of the hives to equalize the bee population. One method, which I call a Texas Set-off because I first observed it just north of Houston, TX, lets the bees equalize themselves much like the simple Doolittle method where the nurse bees cover the brood frames. This set-off process lets both house and field bees to find the place where they should be in the hive, rather than a beekeeper doing it.

During this process, the brood in standard colonies is equalized during the daytime hours. To do this a crew of

beekeepers enters a large apiary and each person sets out to form a standard box of bees from the hive bodies and frames in the colony. This standardization is very similar to the five-frame nuclei, but all boxes are full boxes of ten frames. In each box, the beekeeper places at least three frames of brood (deep frames in the operation I visited), one or more frames of pollen and honey, and a combination of drawn combs and some foundation, depending upon what is available. Each beekeeper shares extra frames of brood and bees with the other beekeepers who find colonies that are running shorter on these items. This sharing puts the same number of frames of brood into each new increase hive.

Each original colony will end up being divided equally into two, three or four boxes of single hive body colonies that are stacked up and allowed to settle in their original hive location. Once a box is filled another is placed on top as bees and equipment allow. There is no set pattern, but most colonies averaged three boxes. By other beekeepers sharing surplus frames of brood, the bees equalize themselves and become quiet during the evening. If the queen is found during this inspection, she is placed in a hive body separated by a queen excluder below and above her hive body and the box marked with bright red spray paint.

After dark, the boxes are separated. Working with a minimum light, and without smoke, the crew returns to the yard and sets each ten-frame box onto a new hive stand. The bees, having equalized on the combs—and in the absence of smoke—do not run from the combs (the area has African bees which increases the running tendency). Once moved, the bees are smoked and a lid placed on the hive. The hive (or in the case of my visit, a pallet of four hives) is loaded onto the flatbed truck to be moved that same night to a new location.

Colonies are moved and set into honey production locations. The Houston area produces a major nectar flow from Chinese tallow (popcorn tree), that produces a bakery grade honey. These colonies are moved to honey production locations and set out where the hives settle a second time. The beekeepers may get two or three hours of sleep in a motel before they repeat the process and work another location the next day. The process is intense work, and unforgiving. The payoff is the multiplication of hives from 100 to over 300 colonies, all making honey within a few weeks.

Preferably mated queens are added, but queen cells are used as well. This is done the next day—one person heads out to pick up mated queens or queen cells at 6 a.m. from a local supplier and the crew inserts the queens into all the colonies except for the ones marked with spray paint with a queen inside. This is intensive commercial beekeeping, but the method may be used by any beekeeper with enough colonies and beekeeper friends who are willing to suit up, seal their boots with duct tape, work long hard days and nights, and, as their reward, produce a large number of revitalized increase colonies.

*Swarm Essentials* by Steve Repasky is ready for immediate shipping from many bee supply houses. Or order it from [www.wicwas.com](http://www.wicwas.com) and check on the status of the Second Edition of *Increase Essentials*. Also, check for notices about queen rearing classes in Massachusetts, Kansas and Oklahoma this year.

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