

*You like potato and I like potahto
You like tomato and I like tomahto
Potato, potahto, tomato, tomahto
Let's call the whole thing off*

-- George & Ira Gershwin, "Let's Call the Whole Thing Off"

Beekeepers love to fight about things. Should we use screened or solid bottom boards? Reverse hive bodies or not? 8-frame or 10-frame equipment? Shallows, mediums or deeps? If we "win" the argument or find others who agree with us, it validates our primal need for self-worth. (A fascinating book on this topic is [How We Know What Isn't So](#) by Thomas Gilovich.)

But let me share a secret: In beekeeping, very few things are critically important. Almost every piece of equipment we use or method we employ is for the purpose of making things easier for the beekeeper, not the bees. Honey bees are very robust creatures, able to live on every habitable continent under widely diverse conditions. For the most part, they don't care one way or the other about what we do or how we do it. I've heard it said that "it all works," and that is, in general, true.

The corollary to this theorem is that beekeepers often agonize over the wrong things. "Woe is me... my sugar syrup is too thick for this time of year so my bees are going to suffer!" "Oh no! My hives are pointed northwest instead of southeast! How can I ever forgive myself?" "I've been using 'pine needles' instead of 'pine straw' in my smoker... I'm so embarrassed!"

One of the many decisions that new beekeepers have to make, and one that they'll get tons of spirited opinions on, is whether to start with packages, nucs or complete hives. Of course the dream way to start is with captured swarms, but that is extremely hit or miss and cannot be relied upon (see [Free Bees?](#) [December 2014]). The saying, "A bird in the hand is worth two in the bush" is appropriate here in a very literal sense. So although Hilda Ransome tells us in [The Sacred Bee](#) that,

**FOR SALE
YOUNG ITALIAN BEES**

½ lb., \$1.25; 1 lb., \$2.00; 2 lbs., \$3.75;
3 lbs., \$4.50. Untested Queen, \$1.00;
Tested, \$2.00. Nuclei, \$1.25 per frame.
No disease. Also Apiaries of from 50
to 500 colonies.

Would like to correspond with any-
one desiring location in fine, sweet
clover belt, where the queen-rearing
business or shipping bees by the pound
can be carried on under ideal condi-
tions. Always have big swarms issue
by April 1.

**Stover Apiaries,
Mayhew, Miss.**

A classified ad from the April 1913 issue of [American Bee Journal](#) offered packages, nucs and even entire apiaries! For price comparison, in 1913 sirloin steak was 25 cents per pound, a dozen eggs were 35 cents and a gallon of milk cost 36 cents.

according to Eastern European folklore, it is bad luck to buy bees, beginning beekeepers are wise to do it anyway. Once a hobby beekeeper is up and running with a successful year or two under her/his belt, under normal circumstances it shouldn't be necessary to ever buy bees again (except perhaps queens).

The reason that packages, nucs and complete hives are all legitimate and popular options for starting up is that they each have their own advantages and disadvantages. Ultimately the choice should depend on the buyer's goals, experience set, risk assessment and finances.

Complete hives

Starting with complete hives is the same as moving an existing hive. How complete "complete" is will depend on the seller, but it should include a full-sized colony of bees with a laying queen, lots of brood and fully drawn comb. It may include a full complement of basic equipment (bottom board, brood box, frames

with drawn comb, inner cover, outer cover).

Advantages

1. No build-up time required.
2. Should be robust with respect to surviving the first summer dearth and preparing for winter.
3. If purchased early enough, could easily produce a surplus honey crop.

Disadvantages

1. This is the most expensive option on a total-dollar basis, although it may be a bargain on a per-bee basis.
2. Complete hives for sale are not easy to find locally -- they are a rather uncommon commodity, not available in large numbers. (Check the [NC Agricultural Review](#) classified ads for offers.)
3. They cannot be shipped -- on-site pick-up only, wherever that may be.
4. "Complete" means that the hive comes complete with any well-established diseases and pests.
5. Buyer beware: Buying a used car involves careful inspection and questioning before the purchase; buying used bees should be no different. Just like used cars, they can be sold by very ethical professionals, ignorant amateurs, lying cheaters and every combination thereof.
6. The purchaser is starting out full-bore with a large colony, not easing into beekeeping toe-first. Large, established colonies sting a lot more, eat a lot more and require more skill to inspect than small "starter" colonies.

Nucleus colonies

A nucleus colony, or "nuc" for short, is like a "nuclear family": it has a home (albeit small), a laying queen, a proportionate number of worker bees, a nice amount of brood (e.g. a couple of frames' worth) and enough food stores to suffice as the colony becomes established.

If full colonies are like "adults", nucs are like "teenagers". They are well on their way to "adulthood" but still have a lot of maturing to

do.

Most nucs consist of five deep frames of drawn comb which contain a mix of honey, pollen, brood and empty cells. The ratio of brood to stores and empty comb is not standardized and should be discussed with the seller before purchase. Apiculture author Larry Connor says, "I like to prepare a five-frame nucleus colony with two or three frames of brood, plus two food frames, and an empty drawn comb so the bees will emerge and swell the number of bees in the nucleus."¹

Sometimes nucs are sold "with frame exchange", which means the buyer gives the seller five new frames, fully assembled with foundation, to replace the five that are included in the nuc. The buyer should expect a discounted price that reflects the cost of the frames with foundation (\$2 to \$3 each). It seems more common for experienced beekeepers to sell nucs "without exchange" because the quality of frames they may receive in trade is highly variable. For the buyer, "without exchange" is a lot easier and no more expensive overall.

Nucs will either be sold in cardboard nuc boxes or the seller will transfer five frames directly into the buyer's equipment. Note that wooden nuc-sized equipment can be purchased to hold five-frame colonies, but these have absolutely nothing to do with a brand new beekeeper buying a nuc. A first-time beekeeper should put the nuc frames into full-sized equipment since the goal is to have the colony expand as rapidly as possible. I have spoken to novices who mistakenly think that they are supposed to start with nuc-sized equipment and then step up as the colony grows; that approach is completely misguided. Nuc-sized hives are a great tool for many tasks (for example, see May 2016, [Making Splits Without Bananas](#)) but they don't directly complement our goal of growing full-sized colonies.

¹ Lawrence John Connor, "Making and Maintaining Connections" in [American Bee Journal](#), vol. 156 no. 11 (November 2016), p. 1256.



This cardboard nuc box has been opened to aid ventilation and allow the bees to make cleansing flights.

Another critical point about nucs is that they must be given adequate ventilation during transport. A good nuc will have a lot of bees confined in a small space, probably with only a small air vent or two. If the nuc is transported in the back of a hot station wagon and left for an hour or so while the owner runs into WalMart, the bees will all be dead from heat exhaustion and suffocation when the owner returns. Beekeeper Steve Andrijew advises that we should treat nucs and packages as we would a baby. If we leave our baby in a hot car for an hour, we'll end up on the 6 o'clock news. And we would look pretty silly if we then went back to the daycare and tried to exchange it for a live one. "Knowing better" is the responsibility of the buyer. Once we leave the bee store, they are our bees and are under our care. (See January 2016 [Get Thee to a Bee School](#) for ways to get educated in beekeeping basics.)

Nucs are most commonly sold on deep frames but sometimes can be purchased on mediums. Don't assume one or the other; ask the seller! Medium nucs won't have as many bees, brood or stores because, hey, mediums aren't as big as deeps. However they will cost the same because they are the same amount of

trouble and effort for the seller either way.

Advantages

1. The colony has a several-week head start on comb building and brood rearing compared to a package or captured swarm.
2. If the queen was the queen-mother for the nuc's brood (not simply installed shortly before the sale), we can assess her brood pattern.
3. Colonies on comb with open brood are far less likely to abscond than newly-installed packages or swarms.
4. Local producers often, but not always, are selling nucs made from stock that has proven successful in our area. Despite heated rhetoric on this topic, this isn't really a big deal – honey bees are robust and do well in a variety of climates – but it doesn't hurt. Also note that the definition of "successful" may vary significantly from a bee-seller versus a beginning hobby beekeeper. Ask what selection criteria a local producer uses for raising her/his bees.
5. Since nucs are typically sold directly from the source, the buyer has the opportunity to assess the credentials, experience and reputation of the seller.

Disadvantages

1. Nucs cost about a third more than packages. In other words, for slightly more than the price of two nucs, a new beekeeper could buy three packages (a pair and a spare!).
2. As with complete hives, it is easy to buy someone else's existing problems: disease, high varroa mite loads, etc. Ask what mite treatments have been used and when, when the apiary was last inspected for mites and what the percentage infestation was, whether the colonies have been inspected by the State (which is required by law for someone selling more than 10 colonies in a year), the seller's beekeeping experience and credentials, and any other questions you can think of. If you don't like the answers, buy elsewhere.

3. Nucs aren't uncommon but aren't nearly as abundant or universally available as packages. They are not shipped, so the buyer must travel to the seller to make a purchase.
4. Typically, nucs aren't available until at least a month or so later than the earliest packages. This can negate the "head start" advantage of nucs. Conversely, they are often available late in the season. This is great if someone needs to repopulate a failed colony that has a full complement of already-drawn comb but a late start is very unwise when starting a brand new colony.

Packages

A.I. Root introduced the idea of selling bees by the pound in 1879 and the industry as we know it was up and running by 1913. Packages of bees and queens can be safely and reliably shipped across the country, from a distant supplier to your local post office. Or a local reseller may travel to the supplier, most often in south Georgia, and bring back hundreds or even thousands of packages for sale at their local shop.

Package production is done in parts of the country that have long bee-growing seasons with very early springs, notably California, Texas, Florida and south Georgia. Almost all of the packages sold in our area are produced by one of a couple of large, professional outfits in south Georgia. These are well-respected, well-run family businesses that date back many generations. They supply bees to the entire Eastern US and are very good at what they do.

African honey bees (aka "killer bees") are well established in Texas, southern California and the lower half of Florida. Even though you can find suppliers from there on-line, please do not make the mistake of buying bees from those areas. It is fine for a beekeeper in Texas to buy vicious bees from Texas, but only an inexperienced chucklehead or arrogant fool would knowingly bring them to North Carolina. South Georgia is still considered a safe (non-Africanized) source of packages and queens.

Since the vast majority of packages sold



This photo documents the beginning of my beekeeping adventure, encouraged and assisted by my daughter Martha. These two packages were the first and last bees I've ever purchased.

around here come from exactly the same place, price, convenience and availability should be the primary factors in deciding where to purchase. It makes no sense to drive a hundred miles to buy a package that came from the same apiary as the ones being sold by the guy next door, unless you can get it substantially cheaper and earlier. In general, we want the earliest delivery date we can possibly get. Don't ignore the old adage: "A swarm in May is worth a load of hay; a swarm in June is worth a silver spoon; a swarm in July isn't worth a fly." For us, we should shift this up a month, starting in April, but that messes up the rhyme. The point is that a package (or swarm) installed at the end of March or first of April has a terrific chance of success. The later spring progresses, the less time there is for a colony to draw out a full complement of comb, build up a healthy population and store up sufficient food for winter. Remember that our main honey flow only runs from April to May, sometimes into June if we are lucky. Those are the "fat times" for honey bees. If a package isn't installed until June, the beekeeper faces an extremely challenging uphill battle with no guarantee of success.

Packages, also known as “artificial swarms”, are my sentimental favorite means of starting as a beekeeper. The only bees I have ever purchased, apart from queens I’ve brought in for their genetics, were the two packages I bought through the mail when I first started out. Since then I have helped others install their packages, including 250 that a group of us installed in a single afternoon for a research project. Package installation is a fun experience that every beekeeper should try even if it isn’t with her/his bees.

I do not prefer the installation method promoted in a popular textbook whereby the open package is left inside the hive and removed a day or so later. This is completely unnecessary and requires an additional invasive hive visit. Furthermore, it invites the bees to begin building comb inside the package rather than on the foundation we have provided. Instead, once the queen cage has been attached inside the hive between the frames, the inverted package should be shaken out in a back-and-forth rocking motion directly over the frames. The entire operation takes a few seconds. There will be a few stragglers remaining in the package. The mostly-empty package should be placed on the ground near the hive entrance. The stragglers will soon join their sisters in the hive and the empty package can be retrieved the next day without disturbing the colony.

Neophyte beekeepers fear shaking out packages but bees in a package (or a reproductive swarm) are in the gentlest state they are ever going to be in. They may whirl around in a cloud but they have no home to defend so aren’t aggressive. While it is remotely possible to get stung while installing a package or collecting a swarm, it isn’t likely unless we accidentally pinch a bee. I always recommend wearing a veil (I value my eyesight!) but that’s the only protective equipment that should really be necessary when installing packages.

Similarly, smokers shouldn’t be used when installing packages because the smoke interferes with the bees’ Nasonov pheromone reception. This is the “here is home” smell that

bees release in order to assemble their sisters. We want the bees to congregate inside their new home with their new queen, so don’t want to do anything to discourage that. A beekeeper can light a smoker and keep it within reach just in case something goes horribly wrong, but don’t plan to use it. Please don’t misunderstand: this advice about smokers only applies to installing packages. For regular inspections, smoke saves bees’ lives by deterring stinging. There is no good reason not to use an appropriate amount of smoke when disturbing established colonies.

Advantages

1. Packages are the cheapest way to start out with purchased bees.
2. They are universally available, either at local resellers or through the mail.
3. Packages can be purchased earlier than nucs.
4. If full colonies are like “adults” and nucs are like “teenagers”, packages are like “babies” or “puppies”. They’ll grow as your own experience and comfort level grows.
5. Packages should, on average, have the cleanest and healthiest bees of the three options if they are produced by the major Georgia apiaries.

Disadvantages

1. Packages, or any swarm, may abscond (totally abandon the hive) shortly after being installed. This usually doesn’t happen but is a risk. Once the colony begins building comb and raising brood, the risk of absconding practically disappears.
2. Bees can be stressed in transit if ventilation and temperature aren’t properly controlled.
3. The colony must start from nothing. In addition to the resource requirements this entails (e.g. converting carbohydrates to wax), this means that it will be at least 3 weeks before there are any more new bees in the colony, since it takes 21 days from egg to emergence of an adult worker. The colony population will decline until new bees begin to arrive. This is no different

than what occurs during natural swarming so isn't a "problem" as such; it just means that a package cannot grow as rapidly as a nuc. If a beekeeper has existing hives, comb and brood can be borrowed from them to boost a package; this would, in effect, be a hybrid between a package and a nuc.

4. A package started in the late spring/early summer cannot be expected to thrive or survive long-term without a lot of effort and luck.
5. A package's appearance gives very little indication of how well it will do in the future.
6. It is not uncommon for a package to contain an unmarked queen hidden among the mass of worker bees in addition to the marked queen in the cage. This isn't a problem for a highly experienced beekeeper who recognizes what is going on but it can create chaos for everyone else. The workers will kill the caged queen, either while she is in the cage or after she is released. If the beekeeper tries to introduce another caged queen, the bees will kill her also and will continue to do so with any introduced queen as long as they have the queen that they came with. If you install a package and the bees kill the queen from the cage, ask an experienced beekeeper to carefully inspect the colony for the presence of an additional queen. Or wait two weeks before doing anything, giving the colony time to raise worker brood (quite obvious from the way it is capped), which clearly indicates the presence of a mated, laying queen.

Your choice

I hope it is clear that the form of bees that someone starts out with (full hive, nuc, package, natural swarm) is not a critical factor for success. It all works, which is why each of those variations remains popular. None is perfect – all have plusses and minuses. Your choice should be guided by your relative priorities related to expense, fun, ease and availability, as well as outside factors such as

time of year. But you don't have to make a single choice... you could start with one of each and compare!

Regardless of how your bees will arrive, order early! Suppliers are already taking orders for next spring. They'll be filled on a first-come, first-served basis and supplies often run out.

The earliest delivery dates I've seen so far are during the last week of March. That timing would be excellent and would give the best assurance of success – don't settle for anything later if those early spots are available when you order. But realize that those dates are "if all goes well". Many years, delivery is delayed due to poor spring weather in south Georgia, which prevents packages and queens from being produced on schedule. So an early reservation date doesn't guarantee an early delivery date. That's another reason to get a spot on the list as close to the top as possible.

A list of producers and dealers who are legally authorized to sell honey bees in North Carolina can be found on the [NCDA&CS website](#). As the posting indicates, "It is unlawful to sell queens, packages, nucs or hives before the Permit to Sell Bees in North Carolina has been issued. For North Carolina residents, a permit is not required for: (1) the sales of less than 10 bee hives in a calendar year; (2) a one time going out-of-business sale for less than 50 bee hives, or (3) the renting of bees for pollination purposes or the movement of bees to gather honey." The list isn't an endorsement of the sellers; it simply shows those who are legally allowed to operate in our state.

IMPORTANT NOTE: Due to a paperwork mix-up, Bailey Bee Supply wasn't included in the 2016 list that was posted on-line, but rest assured that the store is authorized to sell bees in 2017.

So stop reading now, go pick up the phone and order those bees! And remember, whichever option you choose, there's no need to fight about it!

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