

Beekeeping GUIDE

Top 10 Reasons to
Be a Beekeeper

Housing & Feeding
Your Bees

11 Must-Have
Beekeeping
Supplies

Backyard
Beekeeping



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8 Ways to Be a Courteous Backyard Beekeeper

Tips for Managing a Small Apiary and Respecting Your Neighbors

By Angi Schneider

Being a good beekeeping neighbor is something all backyard beekeepers should be concerned about. When we started talking about keeping bees we knew we'd have to be careful since our property is only 1.5 acres and we're surrounded by neighbors. We do not want to irritate any of our neighbors with our bees so we try to be respectful and thoughtful of our neighbors by following these good beekeeping practices:

- 1.** Know your local laws regarding backyard beekeeping. Learning what your local and state beekeeping laws are is something every backyard beekeeper needs to do before starting beekeeping. Usually there are not any ordinances or laws that strictly prohibit backyard beekeepers, but there are usually some that restrict beekeeping practices. This could include how many hives can be on your property or how far away they need to be from neighboring properties. We live outside the city limits and our county does not regulate beekeeping, so we just need to make sure we follow any state regulations for backyard beekeepers.
- 2.** Always have water available for your bees. Like all of us, bees need water to survive. In the summer a bee colony can use a quart or more of water a day. Bees are super resourceful so if you don't provide water or are gone for a few weeks and your water source runs dry, they'll find water elsewhere. The problem with that is that your neighbor's kiddie pool may become their favorite watering hole. And most neighbors don't take too kindly to a bunch of bees trying to swim with their children. But it's also not good for the bees as most pools are treated with chemicals and most do not have landing pads floating around where bees can drink and rest safely.
- 3.** Position your hive opening away from your neighbor's homes. Your bees will be coming and going all day long and it's best to have them leaving their hive and flying toward your home and not your neighbor's home. Backyard beekeepers are responsible for keeping the bees from being a problem for neighbors, and no one wants to have bees buzzing by their faces whenever they go outside.
- 4.** Use fences, screens or hedges to alter their flight pattern. Bees keep a flight pattern when leaving and returning to their hive. And that flight pattern can be altered with a little planning on your part. Backyard beekeepers can build a fence or screen or plant a hedge near the front of the hive so the bees are forced to fly high and steep when taking off and landing. This will help them fly overhead sooner.
- 5.** Be helpful. There are people who legitimately are allergic to bees. But even if none of your neighbors are allergic they might still be concerned about honey bee farming so close to their property. Most of the time their concerns are easy to resolve if you just take the time to educate them on what you are doing and why the bees are acting a certain way. Once, a neighbor knocked on our front door to tell us that she couldn't go out to her back yard because our bees were swarming all over the place. Our son went over to see what the problem was and sure enough there were hundreds of bees flying around the back porch. Our neighbors had a new recycling bucket for soda cans on their porch and our bees were feasting on the remnants of soda left in the cans. Our son explained what was happening and let them know that if they rinse out the cans, the bees won't be back. The issue was completely resolved in five minutes.
- 6.** Encourage your neighbors to feed the bees. Most neighbors will be excited or, at least, intrigued by you keeping bees and will ask what they can do to help. Planting plants that attract bees is a great way for them to be a part of what you're doing and they'll have a good harvest because of the bees. It's a win-win situation.
- 7.** Share your harvest. People are most excited about things they benefit from, so every so often share a small jar of your honey with your closest neighbors. When a backyard beekeeper brings over a jar of honey it will put a smile on even the most concerned neighbor's face.
- 8.** Only keep gentle bees—this is THE most important backyard beekeeper rule. The more populated the area you live in, the more gentle your bees need to be. This is especially important if you live in an area that has Africanized genetics in the bee population. I know we all want to do whatever we can to help bees survive but keeping aggressive bees in an urban or suburban area is not wise. Our family does, in fact, keep feral bees in our hives. However, we have no problem destroying a hive that gets too aggressive. By aggressive, I don't mean bees that sting because you are mowing near their hive and shooting grass into the opening. Those bees are probably just defending their hive. By aggressive, I mean bees that start attacking you at the watering hole or start dive bombing your head when you're on the other side of the yard. Keeping aggressive bees in a backyard apiary puts all the backyard beekeepers in your area at risk, not to mention yourself, your family and your neighbors.





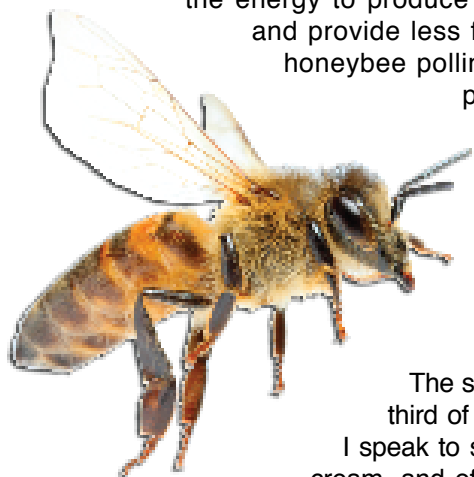
Getting Started with Bee Farming Plans of Your Own

Reasons a Honeybee Farming Project Might be for You

By JERRY HAYES

Those of you who are now or will decide to become beekeepers and get started with bee hive plans will become a very small subset of those reading *Countryside*. And an even very smaller subset of the rest of the population. You will be thought of as perhaps unique, interesting or even weird. Remember that the whole population, even beekeepers, can be entomophobic — afraid of or disgusted by some insects. Some people find it hard to believe there is this small but valuable group that likes this particular insect, the honeybee, and even more incredible to your neighbors — it's an insect that can hurt you.

Why are honeybees important? Honeybees are important not because of honey, which certainly is a tasty, nutritious and more importantly, environmentally neutral sweet, but honey is simply a by-product of pollination. Pollination is the most important thing honeybees do. Pollination is the transfer of pollen (male) to structures (stigma) on another flower of the same species. From here under normal circumstances the pollen deposited on the stigma will grow a channel or tube (pollen tube) down to the ovule/egg and the sperm will travel down this tube to meet up with and hopefully fertilize the egg and seeds will form. When a seed is fertilized then the plant will devote the resources to build a fruit or fleshy vegetable around the seed to protect and nourish it. This could be something familiar like a blackberry, apple or cucumber. Or not so familiar like a lychee, longan or some other exotic fruit. Ever seen a crooked or curved cucumber? Or how about an apple that was flat on one side? These are examples of incomplete pollination and thus incomplete fertilization. A seed was not fertilized so the plant did not expend the energy to produce a fruit at the site. These incomplete fruits are less valuable on the market and provide less food value for the consumer. And, for those seed and nut crops that require honeybee pollination (buckwheat, canola, almonds), if the seed is not fertilized that part of production is lost.



Honeybees are the fundamental keystone pollinator species. Yes, some pollinators like bumble bees or solitary bees are terrific pollinators. However, honeybee colonies can be managed to have tens of thousands of individuals that can be transported and moved to a particular crop and out again, something that is not possible with other pollinators. They can blanket a crop with redundancy and then move on under the beekeeper's direction.

The standard rule of thumb is that if honeybees ceased to exist today approximately one third of the food you and I eat everyday would simply disappear. An example I use when I speak to school groups is ice cream. I ask the kids how honeybees are responsible for ice cream, and of course they don't know, which is good or my talk would end more quickly than planned. I tell them that honeybees pollinated the thousands of acres of seed alfalfa which is used to plant and produce high-protein forage alfalfa hay for dairy cows. Of course, the dairy cows make the milk which makes the ice cream. See, it is all connected.

Honeybees still do extraordinarily well with the novice working toward being a master beekeeper. More has been written about starting beekeeping than any other subject except religion. Being no. 2 in that category tells you how fascinating and rewarding beekeeping is.

What you need to do now is see if you want to go forward. The only way you can do that is by acquiring knowledge. At this stage having access to a computer and Internet is a good thing. There is a lot of junk information available on bees and some very good stuff as well. The problem is separating the two. You can learn a lot about bee hive plans, beekeeping hardware and equipment by reading catalogs. Request a beekeeping magazine / catalog from Dadant Inc., www.dadant.com, 888-922-1293; Brushy Mountain Bee Farm, www.brushymountainbeefarm.com, 800-233-7929; Mann Lake, Ltd., www.mannlakeltd.com, 800-880-7694; and Glory Bee, www.glorybeefoods.com, 800-456-7923.



When you get these catalogs, pick out a beginner's book like *First Lessons in Beekeeping*, or *The Beekeeper's Handbook*. There will be how-to videos available also.

Every state has a state beekeeper's association. Google your state beekeepers association and contact them for information on local and regional beekeeper groups. There may be a beekeeper mentor out there with your name on him or her. Beekeeping is a lot like other activities in that seeing how something is done and having hands-on assistance the first time with your bee hive plans is good for some people. If you are a male neophyte beekeeper with lots of testosterone you can do-it-yourself and be successful also.

Two Weeks Later (If you have followed my suggestions)

If you are ready to start and have read the catalogs and books then you know what equipment you need and where you can purchase packaged bees. If you read the chapter in the how-to-book, you know the mechanics of installing the package. If not here it is.

Installing Packaged Bees

Packaged bees are sold by various bee supply companies and commercial bee producers. Orders should be placed early, so that the bees can be delivered during April and the first half of May (fruit and dandelion bloom). A three-pound package with queen should be ordered if you are going to introduce the bees to a foundation. The following steps should be observed to avoid problems with installation:

- When packages arrive, place in a cool dark room; ideal temperature is about 65 to 70°F.
- Feed bees by sprinkling or spraying sugar syrup (1:1 ratio of sugar to water) over the screen surface.
- A one-story hive (bottom board, deep hive body, 10 frames, inner cover and outer cover) must be ready before the bees are installed.
- Install bees in the late afternoon so they will settle down and not drift.
- Reduce the hive entrance with an entrance reducer or lightly stuff green grass in 3/4's of the entrance.
- Shake the package vigorously so that the clustered bees will fall to the floor.
- Remove the wooden cover of the package.
- The feeder (a can) will then be exposed; remove this can.
- Remove the queen cage, found generally suspended from in the space where the feeder can was, and check the queen to make sure she is alive.
- Using a nail, carefully puncture the soft candy in the queen cage, so the queen can be released easier by the workers.
- Half of the 10 frames should be removed leaving five frames in the hive. Wedge or snug the queen cage with the candy end up between two frames in the hive-the cage screen should be exposed to the bees.
- Spray the package bees one more time with sugar syrup and then shake, and dump the bees out of the package into the large empty space in the hive. (Wear your bee suit.)
- Replace the frames which were removed so that there is a total of 10 frames.
- Then the package bee cage can be placed in front of the hive entrance so the few remaining bees will crawl into the hive.
- Next, provide the bees with an entrance feeder or internal frame feeder of sugar syrup.
- Place an empty hive body on top of the new hive.
- An inverted syrup can or jar with small holes in the lid (read your book) is then placed inside the hive body resting on the top bars of the frames. Put the hive top on.
- The feeder can should be checked in about five days and refilled if empty. (It is very important to provide sufficient food to the bees.)
- In about a week, inspect the colony for eggs and larvae.
- Remove the empty queen cage.
- If the queen fails, a new queen should be introduced immediately; if not unite the bees with another colony or package.

This is learning curve time. The important thing to remember is stay calm. We have had a relationship with honeybees for thousands of years. You are not the first nor will you be the last. There will be plenty of time to “panic” later.

Top 10 Reasons To Be A Beekeeper

1.

Honeybees are the keystone fundamental pollinator species of agriculture and for wildlife. They produce an almost perfect energy food, honey. They are a very forgiving livestock. You don't have to be perfect to be a perfect beekeeper. Honeybees do not necessarily require the management skills of a learned beekeeper for optimum results.

2.

You don't have to own large tracts of your land or barns or fences. You can live in an apartment building and have all your colonies located someplace else.

3.

You don't have to get up at 2:00 in the morning to check if they are hatching or calving.

4.

The honeybee works for almost nothing. They feed themselves (a honeybee can forage for nectar and pollen efficiently in a 2- to 2-1/2-mile radius of their colony) and clean up after themselves as well. If you could develop a breed of goats that collected hay and brought it back to the barn to use in winter and then cleaned out the barn as well, you would have something almost as good as a honeybee.

5.

If your bee hive plans result in too many colonies of honeybees for your backyard, then unlike cows or something else big, you can simply ask a neighbor if you can put some of your valuable honeybees on his property in the unused place in the back. Most of the time, if you have done your PR (samples of honey and the pollination story), the answer is yes. No land to buy or rent.

6.

Honeybee equipment, such as honey extraction equipment and a honey bee extractor, while having a cost, is far less expensive than other farm or agricultural equipment. A hive of honeybees doesn't require oil, gasoline, diesel or anything else to run.

7.

Honeybees pollinate. Honeybees' main foods are nectar/honey and pollen collected as they fly from flower to flower. Their hairy little bodies pick up the sticky pollen from flowers. This is the pollen that then transfers to the sticky stigma on another flower and pollination occurs. Flowers produce lots more pollen than they absolutely require because this pollination activity is still risky. The excess pollen stuck on the honeybee's body is combed out by a structure on the bee's legs and collected in small balls on the hind legs, easily seen in its bright orange, yellow, and even red and green colors. Bees collect pollen because it is their protein, vitamin, fat and mineral source of food. Nectar/honey is the energy carbohydrate food. But, bees don't eat, can't eat, pollen. These pollen grains are protected and encased in silica (glass) to protect the "sperm" inside from drying out, getting wet, etc., before they can fertilize a seed. This silica shell has to be broken open. Honeybees add various bacteria and yeasts to the pollen collected that when it is stored in the cells of honey comb, it starts to ferment and the silica shell breaks away releasing the food inside. This fermented pollen is called bee bread. Kind of like pollen silage for those of you familiar with that process.

8.

Bees make honey. More honey than they need to survive a winter on their own. They share the surplus with the beekeeper. Flowering plants produce a sweet liquid solution called nectar to entice a honeybee to visit the flower and do this important thing — pollination — that we talked about earlier. This nectar is collected by the honeybees. They add enzymes to it to change the sugar profile and reduce the moisture level below 18 percent so honey will not spoil or ferment. Honey has been found in the tombs of Pharaohs, ready to eat.

9.

No cows, goats, chickens, rabbits or whatever to jump over, crawl under or knock down your homestead fencing, and get out to aggravate you and your neighbors.

10.

There is very little winter time work with honeybees. If the beekeeper has helped prepare the honeybee colonies so they have plenty of food for the winter and has addressed pest, predator and disease issues in fall then there is nothing to do. They don't need feeding, watering, shoveling, milking or anything else.



STARTING BEEKEEPING



— Housing and Feeding Your Bees — Learn How to Start Keeping Bees by Providing Food & Appropriate Housing

By JERRY HAYES, COUNTRYSIDE MAGAZINE CONTRIBUTOR

Your packaged bees have been delivered. You're starting beekeeping! You had all of your equipment, hive bodies, frames and foundation, bottom board, and top feeder all assembled and ready to go. Maybe you even made your own bee hives plans to create the right housing for your new colony of honeybees. You "installed" the package and checked the queen a week later to see if she was released from her shipping cage, and checked for eggs. You have continued to feed a 2:1 ratio of sugar to water to the colony but why? Let's talk a bit about feeding honeybees and why. When you're starting beekeeping, your honeybees will require feeding with a substitute for nectar/honey or pollen/bee bread in only a few situations. A honeybees' home is the elaborate beeswax comb that they build. This comb is made up of thousands of individual hexagonal (six-sided) shaped units, tubes or as a beekeeper would say, "cells."

This hexagonal shaped cell is used because it is incredibly strong and will hold the honey that weighs 10 pounds per "deep" frame, raise baby bees (brood), and collect pollen to produce and store "bee bread." This insect — with the brain the size of the period at the end of this sentence — has this engineering, structural and mathematical knowledge ingrained. Pretty incredible. The building material for this honeycomb is not wood, iron or steel, it is wax-pure beeswax made by the honeybees themselves, not some paraffin wax made from crude oil.

Beeswax is produced from eight wax glands on the underside of the worker bee's abdomen. Beeswax is secreted by honeybees that are generally 12 to 17 days old. These glands secrete the wax in thin flakes that have the appearance of glass. Beeswax production is highly energy-intensive. To produce beeswax, honeybees must consume about eight times as much honey or sugar syrup by mass. There have been some estimates that honeybees foraging for natural flower nectar have to fly the equivalent of 150,000 miles in order to collect enough nectar to produce a pound of beeswax. That is why the walls of the beeswax comb (the cells), are very thin, and the strong weight-bearing hexagonal shape is used.

If you're starting beekeeping, you've installed your packaged bees on some type of "foundation," with no cells. This is either pure beeswax with the hexagonal starter imprint embossed on it or some combination of other materials, plastics primarily, that have the same look. This "foundation" is just that, a foundation for building the hexagonal cells making up the beeswax comb.

Honeybees, unlike some other bees, wasps and hornets, do not have piercing mouth parts. They cannot pierce the skin of a fruit and suck the sugary contents out. Honeybees have mouth parts that are more like kitchen spatulas or a mason's trowel. These mouth parts are used to take the wax flakes that they have produced, and mold, shape, massage, pull and stretch them using the foundation blueprint into honeycomb cells. Without the cells the queen cannot lay eggs and raise new replacement bees. Honey or bee bread cannot be stored for use and the colony will slowly age and die off. Honeycomb is vital to the success of a honeybee colony. This is why you must, generally, use supplemental bee food with a highly concentrated carbohydrate source — sugar syrup — with a new package of bees, so that they can quickly build comb which is the backbone of everything else that a colony of honeybees relies on.

One of the benefits of starting beekeeping is that your bees will create beeswax. Beeswax is not only valuable to the honeybee colony but can be a valuable product to the beekeeper as well. Pure beeswax cannot be synthesized in the lab so it is a precious commodity. It is used in religious and decorative candles because as it burns it doesn't smoke. (Who wants to clean the Sistine Chapel ceiling?) Cosmetics use beeswax as a hypoallergenic ingredient to give structure and consistency. And the pharmaceutical industry uses beeswax for everything from dental impressions to cranial surgery. There are ways that the beekeeper can harvest a portion of this beeswax and receive a monetary return.

Starting Beekeeping: How to Stimulate Brood Rearing

When you're starting beekeeping, you'll need to know how to stimulate brood rearing. (Maybe you even dream about learning how to start a honey bee farm on your property!) "Brood" is the name of all stages of honeybees except eggs. These can be workers (sexually undeveloped females), drones (males), or even queens (a sexually developed female). These are called "castes," or physiologically different individuals.

The beekeeper sometimes feeds carbohydrates (sugar syrup) and protein supplements in situations such as building up a colony started from packaged bees when you're starting beekeeping, or artificially building up or increasing the colony population earlier than normally would occur. These supplemental feedings would temporarily be fed before natural flower nectar and pollen would be available. This would stimulate the queen to begin laying and the workers to prepare to feed and take care of the brood, as it simulates "spring" to the colony. Consistent food resources tells the colony that they can gamble on reproduction. You want your packaged bees to have built and continue to build comb, which then allows the queen to lay eggs and to have food available to feed these new developing baby bees.

A new colony started from packaged bees needs to build comb on a minimum of 20 deep frames and to have 60 pounds or so of natural honey stored to go into a typical northern winter, or less if you live in the southern tier of states. A colony of honeybees will have 50,000 – 60,000 individuals in mid summer. A worker will only live six to eight weeks in summer and has to be replaced, which takes 21 days. A queen may lay 2,000 eggs per day in the spring and summer as she works to build a populous colony that can collect enough watery nectar to produce 60 pounds of honey, and enough bee bread (pollen) to feed this group through a winter and early spring.

Starting Beekeeping with Bee Bread and Other Nutrients

Since I have mentioned bee bread, let's review a little about the protein, vitamin, fat and mineral component of a honeybee diet. It's important to know what the nutritional needs of your honeybees are when you're starting beekeeping. Honeybees use a lot of energy flying miles and miles to collect food. This energy comes from the sugars stored and concentrated in nectar and the honey. Just like athletes, sugars (carbohydrates) are providing the "energy" for muscles. And just like us, honeybees can't live just off sugar. It would be like eating candy bars or drinking sodas as your only food – we would quickly get sick. Honeybees are no different. Their protein, vitamins, minerals and fats come from pollen.

Pollen is the male element on the anthers of a flower. Ever look closely at a large flower such as a sunflower and see the dusty yellow material on the flower anthers? Honeybees collect this material into large balls that are deposited on their hind legs to take back to the colony. This pollen is then fermented to release nutrients and preserve it for use at any time.

Bee bread is the best non-carbohydrate food, just as honey is the best carbohydrate source for honeybees, not sugar syrup. But until the colony can get established when you're starting beekeeping, fresh expeller pressed soy bean flour can be used as a pollen substitute. Some soy flour is processed using the solvent hexane and the residues of this, even if in very low amounts, is toxic to honeybees. Use only expeller pressed soy flour to temporarily encourage brood rearing when you're starting beekeeping until natural pollen is available. Mix enough sugar syrup with the soy flour to make a moist dough. Shape into 1/4 pound patties and place on top bars of the frames over the brood nest (the place the queen is laying).

Feed your bees with "syrup" until all 20 frames of foundation are drawn out into usable comb. This should take four to six weeks. By then most regions of the country should have sufficient natural nectar and pollen for this new colony to be self-sustaining, barring major weather events (cold, drought, wetness, etc.). Cross your fingers, as this is agriculture, which is another word for gamble. One tries to understand and work with the natural world in any agricultural pursuit. Starting beekeeping is no different, so enjoy the ride!



The honeybee species that we use in North America has their origins in temperate Europe. Just as many of you experience a long cold winter and have to prepare by storing fuel, food and providing shelter for yourselves and livestock, the honeybee has to store food for the time when no flowers are available. They require 60 pounds or so of honey to get through a normal winter. Early spring brood rearing really accelerates and uses honey and bee bread very quickly. Honeybees will store much more than 60 pounds of honey, which allows the beekeeper to harvest some and leave an appropriate amount for the colony. Many times colonies may store 100, 200, even 300 pounds of honey.

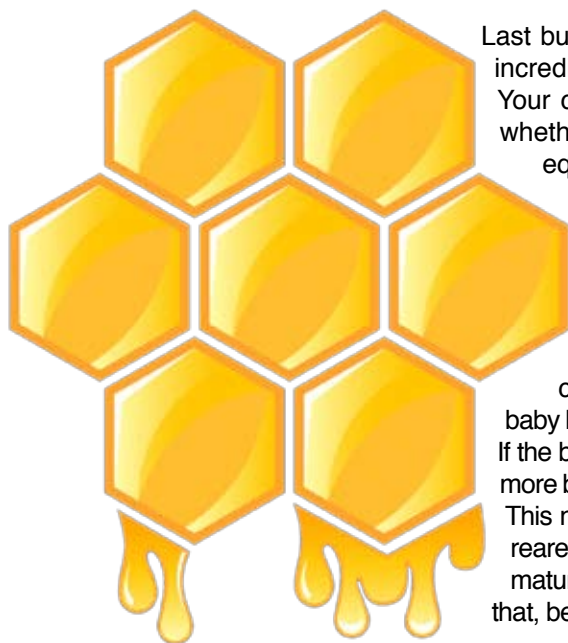
Honeybees have refined the art of protecting resources from predators including man. Honeybees will sacrifice themselves by applying a painful sting to drive away predators. Honeybees die after stinging as the stinger and its venom sac are pulled out of the honeybee causing internal damage and death. Each worker has the ability to protect its space and colony with a sting. Queens rarely sting and drones do not have a stinger at all. The sting is designed to be painful to mammals and cause them to re-think their attack. It hurts for a beekeeper to be stung. Even after many years of being stung myself it still hurts.

Approximately 1-2% of the population may have a serious and possibly life threatening reaction to honeybee stings. Most who get stung though have a normal reaction to being injected with a foreign protein (venom) by localized swelling, pain and itching. This is not a systemic allergic reaction but is normal. Therefore, keep in mind when you're starting beekeeping that you will want to keep the colony calm and non-defensive, and to protect yourself from the occasional sting with a bee suit or suitable covering.

Honeybees communicate in several different ways but a significant method is by the use of chemical odors. We call these chemicals pheromones. These chemicals are produced and secreted primarily by the workers, but also the queen. They are used like we would use an alarm system, to quickly notify their sisters in the colony that a predator is attempting to enter their home.

Beekeepers also use a device called a smoker. This is simply a sealed metal container with a nozzle and bellows, to pump air in and out of the smoker. Using a variety of easily gathered burnable materials or purchased wood pellets, a smoldering smoking fire is built in the smoker. The hinged nozzle lid is closed and a pump or two on the bellows blows out a cool, thick, smoke. This smoke, when directed at the honeybee colony entrance and within the colony hive space, overwhelms and disrupts the pheromone communication between individual honeybees and the colony. The bees can't communicate as the smoke cancels out the chemical pheromone signals. They perceive that they are alone. As such, they are less defensive and aggressive in defending their colony. The beekeeper can now, by applying smoke from the smoker, open the colony and manipulate the hive parts, particularly the frames holding the comb, with calm assurance (or at least calmer assurance).

Confidence in working with honeybees, particularly if you're just starting beekeeping, increases with the use of protective clothing in conjunction with smoke. Wear some type of hat and veil to protect your face and neck; a jacket or suit to protect arms, torso and legs; and gloves to handle frames. This is an outfit that will allow you to gain knowledge, confidence and respect for your honeybee colony.



Last but not least, let's anticipate that as you are starting beekeeping, your colony has incredible flower nectar and pollen resources in the optimum 2-1/2 mile foraging range. Your colony is off to a good start. You have checked the colony and the queen, and whether the comb construction is going well, by using your smoker and protective equipment to visually inspect it all. The weather is perfect and you are ready for your colony to collect more honey above and beyond their needs now and for winter, so you can learn how to use your honey extraction equipment. Where will you place it?

You have provided the two deep boxes with 10 frames per box (20 frames) and the colony has built comb completely on all 20. The two-box unit is called your "brood chamber." This is the colony's permanent home, where the queen lays the eggs, where baby bees develop and emerge, and where bee bread and the 60 pounds of honey is stored. If the beekeeper left this "brood chamber" alone, the colony would continue to grow, and with more bees it means more foragers, which means more nectar collection to convert into honey. This nectar would be stored in the brood chamber in cells that baby bees would have been reared in. So, your queen would have less room (cells) to lay in, which would result in a premature drop in colony population and fewer foragers, etc., etc. It is a self-regulating system that, because of lack of space, means the colony never reaches its full size or potential.

The beekeeper is responsible for optimum conditions for his/her colony. This means providing the additional extra space for the colony to grow, develop, and provide a maximum return to the beekeeper. The extra space is provided by adding extra boxes with frames and comb (foundation at first) on top of the brood chamber unit. These honey storage collecting boxes, are called "supers" in beekeeper jargon. The word comes from another word, superimpose, which means putting something over or on top of something else. You are placing additional boxes, superimposing them on the brood chamber. You could use the same size deep box that makes up your brood chamber and call it a super. This deep, when filled with honey, can weigh 70 pounds easily.

You may have noticed the little fingertip cut-outs on your deeps to allow you to lift and reposition it. Now imagine a deep or two on top of your brood chamber at chest or head height, filled with 70 pounds of honey. Try lifting this (these) off at this height and at this angle with your fingertips! Nothing on a beehive is ergonomically correct, so be careful. My suggestion is to use smaller-in height-boxes called mediums, Illinois depth or shallows, for supers. Being smaller with smaller frames, they individually hold less honey but are infinitely easier to handle. You can use two, three, four or more of these stacked on each other as supers.

Basic Kit



Queen Catchers



Swarm Traps



Bottling Buckets



Smokers & Shields



Gloves



Capping Scratchers



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11 Must-Have Beekeeping Supplies For Beginners

You Need More Than a Beekeeping Suit When Starting Beekeeping

By Angi Schneider

When our son first decided he wanted to keep bees and we started looking at beekeeping supplies, we learned pretty quickly that starting beekeeping can be pricey. Since we are really not the kind of people to rush out and drop a lot of money on a new found hobby, we had to get creative.

There are some beekeeping supplies that are essential and some that you can make do without or find substitutes.

11 Essential Beekeeping Supplies

1. Hives – You need a place to keep your bees and a hive is that place. You can choose to buy or build a top bar hive. We have one that a friend built that has an observation window which is really great. We also have Langstroth hives that we bought from a retired beekeeper. Many beekeepers use both types of hives. If you are going to use Langstroth hives be aware that there are eight frame hives and 10 frame hives. They are not interchangeable so it's important to have a beehive plan from the beginning and choose what size you plan to use. The main difference is that the eight frame hives are lighter when full of honey and therefore, easier to manage.

2. Bees – You can't keep bees if you don't have any. So you need to either buy packaged bees or catch a swarm.



3. Veil – A beekeeper's veil is probably the most important piece of equipment the beekeeper will use to keep safe. Even the most gentle bees can and will sting at times, unfortunately, you never know when that time will be. Getting stung on the face or scalp is especially painful, so a veil is on the top of the list. Also, bees are naturally curious about small openings, such as nostrils and ears.



4.

Beekeeper's Suit – While you will want to buy a real beekeeper's veil, you don't necessarily need a real beekeeper's suit. If you can and want to purchase a new one, that is probably a good thing.

However, if you need to stagger your beekeeping purchases you can make do with things you might already have at home. Our son wore a hunting camo jacket that we picked up at the thrift store, long jeans and work gloves. He wore tube socks and tucked his jeans into the socks and used duct tape to cinch down the jacket at wrists. Then he put the gloves on and used another layer of duct tape to tape them to the jacket.

5.

Gloves – You can use any work gloves to work with bees but leather ones will serve you better. Most beekeeper gloves are leather for the hands and

then fabric up to the elbows...yes, the elbows. If your work gloves are shorter than the elbow, consider using some duct tape to cinch the wrists down.



6.

Hive Stand – You don't want your hives on the ground. They will be hard to lift but more importantly, when the hives are on the ground, it's more likely that critters will mess with them. To make a hive stand you just need six cinder blocks and a couple of 4X4's. Make sure the lumber is long enough to put a couple of hives with enough room for another one in between them. This space will come in handy when you are working in your hives. Turn the cinder blocks up on one end and lay them out into two rows. Put the lumber through the top holes to form a shelf.

7.

Smoker – Smoke is used to calm the bees so you can get into the hive. The smoke masks the pheromones that the bees give off to communicate with each other. A smoker makes getting smoke pretty easy. You can use wood chips, small twigs, leaves or pine needles in the smoker.

8.

Hive Tool – Sometimes you'll need to pry the top of the hive off or loosen the frames since bees really like a snug home and glue everything together with propolis. This is where a hive tool comes in handy. These are really inexpensive and totally

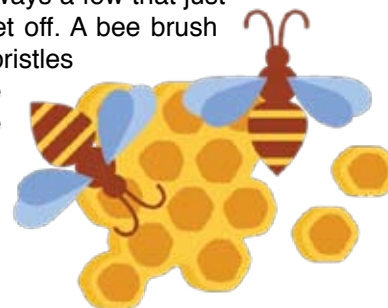
worth purchasing instead of using something around the house. But you could substitute a mini crowbar and a painter's scraper if you already have those on hand.

9.

Bee Brush – When you pull up a frame from the hive, you will most likely need to brush bees off of it. Most will come off if you shake the frame some, but there are always a few that just don't want to get off. A bee brush

has long, firm but not stiff bristles

that will gently remove the bees. You can substitute a good quality soft paintbrush that hasn't been used but will probably cost as much or more than a bee brush.



10.

Uncapping Tool – If you want to be able to keep the honey comb on the frame so the bees don't have to draw out new comb, you'll need a way to uncapped the honeycomb. An uncapping tool is an inexpensive tool that will allow you to get just the

caps off the comb. There is an uncapping fork and an uncapping knife. We prefer the uncapping fork. If you don't have either of these, a sharp knife can be used but it won't be as efficient.

11.

Honey Extractor – This is at the end of the beekeeping supplies list for a reason; you don't need it right away. A honey extractor is a great way to get the honey from a Langstroth hive but they can be quite expensive. We were able to get a used

honey extractor from a retired beekeeper along with some Langstroth hives. I'm going to encourage you to look for a used extractor or make do with a homemade extractor even if that means you have to use the "crush and drain" method of extracting. After a few harvests you'll have a better idea of what you need and make a better decision than you'll make when you're just starting out.



HOW TO SET UP A BACKYARD APIARY

Tips For Finding Beekeeping Supplies



By Angi Schneider

About six years ago our son (who was 12 at the time) told us he wanted to start keeping bees. Beekeeping was something we were interested in starting and this was just the push we needed to get the ball rolling. To prepare, we spent the next year or so reading and learning how to set up a backyard apiary with our son. A friend who is also a beekeeper became our son's beekeeping mentor.



3 Questions to Ask Before Setting up a Backyard Apiary

- 1.** Our first question that needed to be answered was, "Is beekeeping legal in our area?" Fortunately, we live outside the city limits on 1.5 acres. Our county doesn't have any laws or ordinances for beekeeping so we just needed to make sure that we knew and followed our state laws. To find out what laws and ordinances there are in your area for raising bees you can call your local county extension agent or your city's animal control department.
- 2.** Next we looked at our property to decide where to put the apiary. We knew we wanted the apiary to be away from the house and as far away as possible from our neighbors. Since we have such hot summers we also needed a place that would provide some shade for the bees. We found the perfect space at the end of our chicken run. When you're evaluating your property, make sure you take your climate into consideration. If you have hot summers, you will need to provide some shade for your bees. If you have very cold winters you might need to think about how you can provide a wind break for them.
- 3.** Another question we needed to answer was, "Do we have enough food for the bees?" One of our goals as a family is to be as sustainable as possible. So we certainly didn't want to find ourselves in a situation where we needed to feed our bees

syrup and pollen patties all the time. Of course, our property didn't need to provide all that the bees needed since they will forage up to two miles away. But we were also experiencing a drought at the time which made the wildflowers and crops more scarce than usual. Because of this, we decided to just start with two hives. If you live in an urban area, the food issue will naturally limit the number of hives your property can support. If you live in a rural area with a lot of gardens and farms, your property can support more hives. Now that we knew how to raise bees and were confident that our property could support a few hives it was time for us to actually start beekeeping.



Finding Beekeeping Supplies

A local friend who is also a beekeeper offered to give our son one of his hives. It was a very generous thing to do. He gave our son a deep with a thriving hive. Another friend who is a woodworker built our son a topbar hive and gave it to him as a gift for his second hive.

It was interesting to see how excited friends were for our son's new adventure. A third friend, whose dad used to keep bees, gave our son her dad's old beesuit and veil. This was a good lesson for us — there are many older beekeepers that have beekeeping supplies stored away because no one in their family wants to keep bees. A few months later we were able to find an older beekeeper that was willing to sell our son an extractor, several deeps and supers and a smoker for a very reasonable price.

Starting beekeeping is an investment but it doesn't have to be super expensive. There are many places to buy beekeeping equipment but I'm going to encourage you to first ask around and try to find used equipment. Some good places to ask are your local county extension office and antique stores. As long as the equipment is clean and in good condition there should not be any problem with using it in your apiary, especially if it's been several years since it's been used.

We also needed another set of bees. We ordered bees in the spring and installed them in the topbar hive. Over the years we've learned a lot about acquiring bees and what works for us. One of the things we've learned is that feral bees are hardier than bought bees and that works better for us. Other beekeepers in our area don't agree with keeping feral bees in their apiary and so packaged bees work better for them. In the spring our son gets weekly calls asking him to come get a swarm off of someone's property. Sometimes these swarms end up in our apiary and the rest are relocated to other local apiaries. We never planned on having our apiary full of feral beehives. Plans are great, but we've found that they often need to be adjusted. You'll need to decide for yourself where you get your bees but at least consider catching a swarm and relocating it. Beekeeping has been an extremely rewarding, although sometimes frustrating, adventure for our family. It's fun to go out to the bee yard and check out the bees. The honey is wonderful and the beeswax is useful in many ways. With some planning, most families can have a backyard apiary.

6 Honey Bees to Consider

**Including
Buckfast Bees**

**Pros and Cons
of Buckfast Bees,
Carniolian Bees
and Other Bees**

By Angi Schneider

One of the first questions a beekeeper asks is, "What kind of bees should I keep?" There are many bees to choose from: Carniolian, German, Italian, Russian and Buckfast bees, to name a few. Which is the right one to keep? The answer is "It depends."

Let's chat about the pros and cons of different varieties so you can make the best decision for your situation as you are learning how to raise bees.

1.

Buckfast Bees

Buckfast bees were developed by Brother Adam who was a monk at Buckfast Abby in England in the early 1900s. He was in charge of the bees in the Abby during the time when the acarine parasite mite (a tracheal mite) invaded and killed thousands of bee colonies across England. He took the hives that survived and started a breeding program which eventually produced the Buckfast bees.

PROS

- High honey producers
- Good foragers
- Low inclination to swarm
- Low inclination to sting
- Cold hardy and seem to overwinter well
- High tracheal mite tolerance

CONS

The biggest con to Buckfast bees is that if you let them naturally requeen, the second generation will likely be aggressive. So you will need to continue to purchase Buckfast queens in order to keep the aggressiveness low.

2.

Carniolian Bees

Carniolian bees are a subspecies of the western honeybee and originated in what is now Slovenia. They can also be found in Hungary, Romania, Croatia, Bosnia, Herzegovina and Serbia.

PROS

- Defend their hive well from pests
- Not aggressive toward beekeepers
- Able to quickly adjust hive size based on environmental issues
- Able to conserve honey stores
- Can overwinter with fewer bees
- Less susceptible to brood disease
- Forages in cooler, overcast weather

CONS

- Prone to swarm
- More likely to need supplemental feeding – especially in the early spring
- Has a hard time in hot summers

3.

Italian Bees

The Italian bee is the most popular bee for beekeepers in North America. They were brought to the United States in the mid 1800s and are considered the best bee for beginning beekeepers.

PROS

- Adaptable to various climates
- Good honey producers
- Gentle and non-aggressive
- Great foragers
- Large colonies
- Darker queen – making her easier to identify

CONS

- Prone to rob and drift
- Raises brood late in fall which means more mouths to feed in winter
- They do not cluster tightly in the winter so they consume more honey to stay warm

4.

Russian Bees

Russian bees are relatively new to North America, coming to the United States in 1997 from the Primorsky region in Russia. They were brought in by the Agricultural Research Service because they have a natural resistance to Varroa and Tracheal mites. These bees became available for purchase in 2000.

PROS

- Resistant to Varroa and Tracheal mites
- Tends to rear brood only during times of nectar and pollen flow
- Not aggressive
- Frugal in their honey consumption
- Overwinter well
- Maintains queen cells all season long

CONS

- Tends to swarm
- Expensive

5.

Caucasian Bees

Caucasian bees originated in the Caucasus mountains between the Caspian and Black Seas. They were once very popular among North American beekeepers but that is no longer the case.

PROS

- Very gentle
- Do not tend to swarm
- Not prone to rob
- Forage on cooler days
- Long tongue and can get nectar that most bees cannot

CONS

- Use an excessive amount of propolis in the hives
- Build up slowly in the spring

6.

German & Feral Bees

Honey bees are not native to North America. Early explorers brought them over in the 1700s and subspecies of German bees are what was brought. These dark (almost black) bees were once a favorite of beekeepers but because of their aggression and susceptibility to many brood diseases they lost favor many years ago. However, most wild honeybees are subspecies of German bees.

Which brings us to wild or feral bees. There is a lot of disagreement among beekeepers about the wisdom of keeping feral bees. And honestly, both sides have some good arguments.

PROS

- Inexpensive – usually free
- Adapted for your region
- Usually very hardy

CONS

- Unpredictable
- Can be very, very aggressive
- Can't be purchased, you need to catch them

When starting beekeeping it's best to pick the species you think will do best but be open to change. All of these species are good choices, but beekeeping is an art as much as it is a science. As a beekeeper you will want to keep an eye on your bee hives and be observant of them.



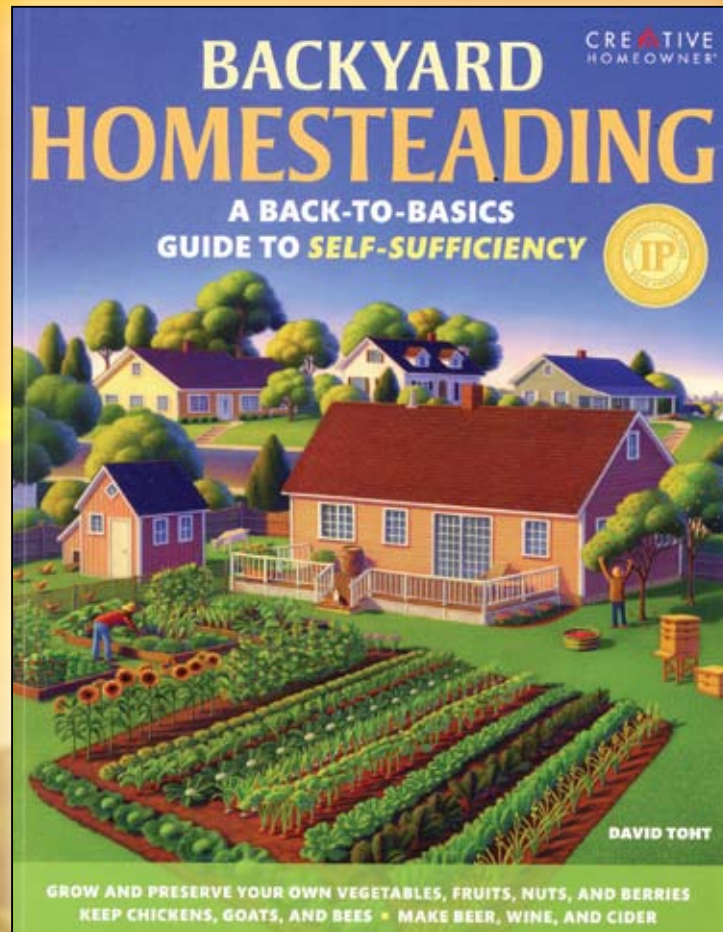
If you see a lot of activity, it might mean that you need to add more space lest they decide to swarm. If you see very little activity it might mean that they have already swarmed and you'll need to decide how to best help the remaining bees.

If you notice that the hives are robbing other hives or being aggressive toward you it might mean that the hive needs to be requeened, especially if the hive is several years old. The second generation from a queen is usually not as genetically pure as the first.

Being observant and having bee hive plans will help your hives stay healthy and productive.

A Back-To-Basics Guide To Self-Sufficiency

BACKYARD HOMESTEADING



Backyard Homesteading addresses the needs of many people who want to take control of the food they eat and the products they use—even if they live in an urban or suburban house on a typical-size lot. It shows homeowners how to turn their yard into a productive and wholesome “homestead” that allows them to grow their own fruits and vegetables, and raise farm animals, including chickens and goats. *Backyard Homesteading* covers the laws and regulations of raising livestock in populated areas and demonstrates to readers how to use and preserve the bounty they produce.

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