

BASICS

THAT YOU MAY ALREADY KNOW

OF BEES & HONEY

Honey is the only food that includes all the substances necessary to sustain life, including enzymes, vitamins, minerals, and water; and it's the only food that contains "pinocembrin", an antioxidant associated with improved brain functioning. Whether a newbie to the honey industry, or a seasoned beekeeper, there are tips and tricks here to help your hive thrive.

THE PLAYERS IN THE HONEY GAME

Queen Bee: She is larger than the worker bees, longer than the drones, and has a long abdomen that resembles that of a wasp. Her job is to lay eggs, and other bees in the hive tend to her needs as she lays nearly one egg a minute (1,500-2,000 per day) around the hive. If the hive begins to become too crowded, the queen will lay special eggs in large cells which will produce new queens. The first new queen to develop will take over the hive while the old queen will leave the hive with a swarm of bees to start another hive and a new colony.

Worker Bee: Worker bees are female bees that do not lay eggs. Their job is to keep the hive clean, feed the bee larvae, attend to the queen. They work to keep the hive warm or cool depending on the temperature needs. They also build honeycomb, guard the entrance to the hive, and later collect nectar and pollen for the colony. These bees only live four-five weeks in the summer and die from exhaustion.

Drones: These are the male bees whose job is to mate with the queen so that she can lay eggs around the hive. They do not do any work around the hive and do not have stingers, so they are quite defenseless. When the winter food supply gets low, worker bees will push the

drones out of the hive to die.

Flowers: Honeybees get nectar from flowers to produce honey. While gathering this nectar, bees will also collect pollen all over their bodies and in pollen sacs on their legs. As they move from one flower to next, some pollen will transfer to the next flower, then pollinating the new flower. Pollination must occur before a flower can produce seeds. Hundreds of flowering plants are dependent upon honeybee pollination.

Beekeeper: The primary role of the beekeeper is to be a good steward of the hive and to increase healthy bee numbers providing stronger colonies and a good yield of products. The beekeepers challenge is to keep the hives protected through extreme weather as well as from pests and diseases.

SUPPLIES FOR SUCCESSFUL BEEKEEPING AND HONEY PRODUCTION

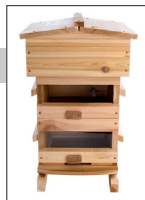
Once you have acquired your honeybees, which can be done by catching a swarm of feral bees, baiting and trapping, purchasing a package from a breeder, or by obtaining a nucleus colony if you are using a Langstroth Hive. There are many resources available online for determining how you would like to start your own colony.



Choosing the best hive:

	TOP BAR HIVE	WARRE HIVE	LANGSTROTH HIVE
OVERVIEW	Rising in popularity for backyard beekeepers due to its simplicity, ease of access, no heavy lifting, and few accessories required.	The most hands-off hive, ideal for those looking for a simple-to-manage hive with lighter boxes.	Most common hive in North America. Heavy boxes, lots of accessories and resources available.
COST	Low to high. Costs range from very cheap (building your own) to high-end with all the bells and whistles and everything in between. Few accessories required.	Low to high depending on if building your own or purchasing one. Few accessories required.	Mass produced hives are relatively cheap, but required accessories and components add up and are costly.
MAINTENANCE	The most frequent maintenance and monitoring, but no heavy lifting is involved.	The least maintenance. Boxes added to the bottom in the spring. Harvest in the fall.	Relatively little maintenance. Boxes can be added early in anticipation of colony growth or a strong nectar flow.
WEIGHT	The easiest on the back. Once the hive is in place, lifting only involves 3-7lb combs.	Significantly lighter than the Langstroth, heavier than the horizontal top bar hive.	The heaviest and most awkward to lift and maintain, between approximately 30 and 80lbs, depending on the box size.
PRODUCTION	Some expert top bar beekeepers maintain they harvest similar honey quantities from their Top Bar Hives and their Langstroths. More frequent inspection required.	Comparable production to Langstroth as long as boxes are added on time.	Arguably the highest honey production of the three, due to large box sizes.
COLONY HEALTH	Natural, foundationless combs improve colony health.	Natural, foundationless combs improve colony health.	With foundationless combs, the same likelihood for survival as other designs.

(Table from
"The Best Be Hive.")



After determining the hive that is best, a new beekeeper should invest in the following:

Hive tool: Your hive tool is one of your most critical pieces of equipment. Without it, you will find it nearly impossible to inspect your colonies or add new boxes if you are using a Warre hive. Bees glue everything in the hive together with their resin-like propolis.

Smoker: While this may not be used all of the time, this is a critical piece of a equipment for all beekeepers. The smoker is used to subdue the bees by both making it difficult for them to communicate, and also causing them to gorge on honey in preparation for a fire. Honey bees are temperamental creatures, and otherwise docile hives may have days where they are overly agitated. In most cases you will just avoid the hive on those days, but there are some times when you must get into or move the hive and a smoker will be your best friend!

Jacket with Veil and Gloves: As a new beekeeper it isn't likely that you will be overly comfortable with your unprotected hands and face near 40,000+ stinging insects at first. It is recommend that all beekeepers start off using protective equipment so that they can become comfortable around their bees. Bees seem to sense nervousness or confidence, and a nervous beekeeper often makes mistakes and gets stung, which is an easy way to get turned off of your new-found hobby.

Bee Brush: More useful than you would imagine, the bee brush can be used to gently move the bees off of comb or other places you don't want them to be. Keep in mind that the bees HATE the brush and you will find them stinging it mercilessly as you use it, so use sparingly. (Beekeeping)

IMPORTANT TRICKS FOR HONEY EXTRACTION

When it comes time to harvest the honey, the reward of much time and effort, there are some important tips and tricks to consider as detailed by John Calderia:

Honey is sticky. It will drip. Every doorknob, shoelace, telephone and radio button that is touched while uncapping or handling wet frames will become sticky. Walking spreads the honey around on the floor. *Solution:* A bucket of water to rinse hands and a dishtowel are essential in the extracting room. Turn on the fan and radio, and get everything else ready, before getting all sticky. The garage, basement, barn or porch are usually better places to extract than the kitchen, providing you can keep the honey clean.

Bees in the extracting room are attracted to light. Straggler bees left in the supers will find their way into the extracting room and will tend to fly towards a window or light bulb. *Solution:* A small exit near the top of a window will allow them to return to their hives if they are nearby. If the hives are not nearby and you have a lot of bees in the room, hanging a few drawn frames near the top of the window with a caged queen will provide a place for them to settle and create a nice nucleus colony when you're done. A vacuum cleaner hose is an alternative. Don't extract directly under the only light bulb in the room.

Bees away from their hive are not inclined to sting. Bees carried into the extracting room in supers are normally extremely gentle, with no brood or queen present. However, they are very adept at stinging the finger that accidentally crushes them while picking up a frame or super. Beware.

Household items can serve as good alternatives

to supplies found in beekeeping catalogs.

- A serrated bread knife makes a good uncapping knife. Use a sawing motion. No need to heat it. Change directions if it catches the wood. Some beekeepers really like using a hot-air electric paint stripper to quickly melt the cappings, as well.
- Kitchen strainers, nylon paint strainers, and women's nylon stockings can serve as good honey filters. Clean ones, of course.
- Tupperware and Rubbermaid both make good plastic containers to hold honey and cappings. Honey is acidic, so don't use items such as aluminum and galvanized steel that will react with the honey acids. Stick with plastic, stainless steel or glass.

While there is a good household substitute for most extracting equipment, there is no good sub-

stitute for a good centrifugal extractor.

Let the honey settle. Honey that rests for a few days after extracting will not leave tiny bubbles around the rim of a jar. Be patient. Almost all debris left in the honey after filtering will either float or sink within a few days. A spigot just off the bottom of a container will prevent both floating and sunken debris from being accidentally bottled.

If there is no nectar flow, bees will rob honey. If the honey in an extracting room is more appealing than local flowers, the neighborhood bees will try to feast on it and tell all their friends. Extracting is best performed in a closed screened room such as a garage, basement or barn, or outside after dark.



Uncapping is easier with only 8 or 9 frames spaced evenly in a 10-frame super. The thicker comb means almost no scraping with the fork. After bees have drawn out the foundation the first season, return only 8 or 9 frames into each extracted super to make the next crop easier to uncap. Uncap all the way down to the wood on the top and bottom bar, regardless of how far the comb is drawn out, so the comb will be nice and even next year.

Propolis sticks to shoes and almost everything else. Extracting is a great time to clean propolis off the box edges and frame-rests, but if they are going to be scraped it is best to cover the floor with old cardboard, newspaper or a plastic painter's tarp so there will not be little propolis reminders of the extracting experience. Wax isn't quite as bad.

Butyric acid (Bee Go) really stinks. It works great, and is the best way for most hobby beekeepers to clear bees from the supers. The bees don't get as angry as brushing or blowing them, but that smelly fume board belongs behind the garage or near the fence when you're done. The chemical bottle belongs in a plastic bag inside an old coffee can or something else that won't tip over; this is stuff you do not ever want to spill. The almond-smelling Benzaldehyde smells better and works okay in cooler weather, but it still belongs outside. Bee escape boards work too, if you can install them the day before extracting, have enough escapes for every hive, and do not have too many holes between the boxes where the bees can enter and rob the honey.

Extractors, uncapping tanks and other extracting equipment are best borrowed or shared. Most hobby beekeepers will only use their extracting equipment one or two days each year. The rest of the year it typically gathers dust in an attic, garage or basement. Thus it is very practical and economical for several beekeepers or a beekeeping association to

share equipment. The expense is avoided, and it eliminates the need for storage space. So borrow or share, and use some of that money saved to buy a few of the nice non-stick polyurethane candle molds. If you must buy, a good quality hand-crank 4 frame extractor will suit most beekeepers better than 2 or 3 frame models, since it reduces the spinning work and thus greatly shortens the extracting time.



Extracting honey is best accomplished with two people. One person uncapping frames while the other spins the honey. Very efficient and the conversation can be good. If you have clean wax from an earlier extraction, a side candle-making operation is an effective use of time since candles take time to cool.

Warm honey flows best. Warm honey spins out of the comb faster and more thoroughly than does cold honey in an extractor. Warm honey also strains faster through a filter. Honey at 80 degrees Fahrenheit (27 c) or higher will be extracted most easily. This is normally not a problem in the summer, but in cool weather a light bulb under a stack of supers overnight can provide a lot of heat if the escape of the heat is



controlled. Do not melt the wax!

Extracted honey absorbs moisture from the air. Uncovered honey also catches insects, so keep the honey covered.

Sufficient honey containers are needed on extracting day. Enough containers need to be

on hand when extracting, so it is good to learn how much capacity you'll need before extracting. In rough numbers:

- A shallow super will typically yield between 25 and 30 pounds of honey, or 2 to 2 ½ gallons.
- A medium (6 5/8") depth super will typically yield between 35 and 40 pounds, or 3 to 4 gallons.
- A full-depth box will typically yield between 60 and 70 pounds, or 5 to 6 gallons.

Actual yields vary due to the number of frames, how well they are extracted, age of comb and other variables.

Wax cappings hold a lot of honey. Wax cappings typically hold 10% or more of a beekeeper's honey crop. Cappings should be drained of honey through screening. After draining, the cappings wax can be melted into a block. Melting is best accomplished using a solar wax melter, or by heating the cappings in an inch of water in an old pot. Feed the honey-water back to the bees. Solar wax melters really do work well – use double-paned framed window glass and build around it. Alternatively, the cappings can be left outside for the bees to feed on and then thrown away

Utensils that are used with melted wax will not be used for anything else. Melted wax leaves a waxy film on every pot, spoon, dipping cup or strainer it comes into contact with. Crock pots with an inch of water are good for melting cappings that have been drained of honey, but the pot will never be the same. Old crock pots are also near-perfect for melting wax during candle making, and they are often available at garage sales. Heat to between 150 and 180 degrees Fahrenheit; no need to boil.

Bad comb and rotten boxes should be replaced while extracting. Extracting provides the perfect opportunity to cull bad combs, frames and boxes that need paint or replacing. Have replacements on hand on extracting day.

When short a few frames, frame feeders (also called division-board feeders; the kind that normally replace a frame or two) can be put in the empty spaces in the supers so any burr comb built there will be inside the feeder where it will actually be useful to prevent drowning when it is time to feed.

Let the bees clean the “wet” empty supers after extracting. Whether intending to return the supers to the bees or store them off the hives, the bees do a great job of drying supers after extracting. A stack of supers can be placed on a hive, over an inner cover that has a hole, and they will usually be dry the next day. Best to put them on the hives late in the day, to reduce robbing.

BASIC LABELING REQUIREMENTS

One of the most important decisions that a food marketer has to make is what to put on the label of a food product. It needs to appeal to the consumer and stand out from other food packages on the shelf. There are also legal con-



siderations. And let's face it, when it comes to labeling a honey jar, there's limited space.

LABELS MUST COMMUNICATE THE FOLLOWING:

The “Common” Name of the Product

The word “honey” must be visible on the label. The name of a plant or blossom may be used if it is the primary floral source for the honey. Honey must be labeled with its common or usual name on the front of your package. (i.e. “Honey” or “Clover Honey”)

Net Weight

The net weight of your product (excluding packaging), both in pounds/ounces and in metric weight (g) must be included in the lower third of your front label panel in easy-to-read type. (i.e. Net Wt. 16 oz. (454 g)) When determining net weight, use the government conversion factor of 1 ounce (oz) = 28.3495 grams or 1 pound (lb.) = 453.592 grams. Round after making the calculation – not before. Use no more than three digits after the decimal point on the package. One may round down the final weight to avoid overstating the contents. When rounding, use typical mathematical rounding rules.

Ingredients

Single ingredient products (such as honey) do not have to name that single ingredient when already used in the common or usual name on the front panel. However, if there are ingredients other than honey, you must list them in an ingredient statement. Some exceptions are spices, flavorings and incidental additives (additives which have no functional role and with minimal presence in the finished product) which have special rules.

The type size for ingredient listings must be no less than 1/16th inch as measured by the small letter “o” or by the large letter “O” if all caps are used in the declaration. There are exemptions that allow smaller type sizes for small packages.

Contact Information

The label must let consumers know who put the product on the market and how to contact that person. The name and the address of the manufacturer, packer or distributor of a packaged food product are required to appear on the label of the packaged food. This information, sometimes referred to as the “signature line,” must appear on the front label panel or the information panel. If space permits, include full address and telephone number. The information must be in a type size that is at least 1/16th inch tall (Honey).

POWERBLANKET IS YOUR PARTNER IN KEEPING THE HONEY FLOWING

There’s a reason that we use “honey” as a term of endearment. As a naturally occurring substance, it is one of the most precious. It can substitute as a sweetener in many foods and contains about 69% glucose and fructose, making it a sweetener that is better for overall health. It is a source of vitamins and minerals. This pure and natural substance is easier for the body to digest and has antibacterial and anti-fungal properties which make it a natural antiseptic and a great way to help wounds and burns to heal. Adding a little “honey” to your day can “sweeten” many aspects of life.

To maintain these amazing benefits, raw honey should not be heated much above 100°F. All of the nutrients, enzymes, antioxidants, and flavonoid content in honey are temperature sensitive and heating beyond the recommended limit will destroy the value and create a glue-like substance that is no longer easy to digest. The Powerblanket Bee Blanket will ease all of the stress and concerns in honey temperature control.

The Bee Blanket

The Powerblanket Bee Blanket heating solution will maintain the same temperature as a hive.

With low-level internal thermostats, you can apply the Bee Blanket and leave it be. There’s no need to worry about overheating your honey, because the Bee Blanket will never get too hot.

It is an easy-to-install heating solution for honey producers and bottlers. With this insulated vinyl heat blanket, you can heat your honey to the ideal temperature and maintain the viscosity required for bottling and managing honey stores.

Stand Out Features of the Bee Blanket:

- Cinch straps to secure tight fit
- Blanket temperature goes from ambient to 90°-110°F
- One heat zone
- Highly efficient design saves time and energy
- Water-resistant
- Works on both poly and steel buckets/pails
- Prevent overheating your honey and help minimize crystallization
- Keeps your honey at hive temperatures so you don’t lose nutrients
- All models are certified by ETL to UL & CSA safety standards



Works Cited

“Beekeeping for Beginners”. *BeeThinking*. 2 September 2016. <http://www.beethinking.com/pages/beekeeping-for-beginners>

“The Best Bee Hive”. *BeeThinking*. 2 September 2016. www.beethinking.com/pages/what-is-the-best-bee-hive/

Calderia, John. “Tips on Harvesting Honey”. *John’s Beekeeping Notebook*. 2 September 2016. outdoorplace.org/beekeeping/extracting.htm

“Honey Labeling”. *National Honey Board*. 2 September 2016. www.honey.com/honey-industry/honey-testing-and-regulations/honey-labeling/