

The Traveling Beekeeper



THE DIFFERENT FORMS OF HONEY

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*Honey is Honey, so some say, but the form of the product varies widely.
Different producers go after specific products*

The majority of US-based honey consumers expect honey to be in a liquid state, but if you travel to Canada or Europe you will find that the majority of honey buyers expect honey to be in granular form. A variety of cultural influences support very different markets for a preference of different forms of honey. This is actually an advantage for those seeking to expand their honey market, since it often helps to stand out against a very similar assortment of honey products. If you are at a farm market and have the only granular honey in a sea of liquid honey, you can sell a lot of product with as-

tute customer education, product sampling and old-fashioned sales and marketing.

Let's make a basic review of the forms of honey, how they are produced, and some of the advantages and disadvantages of each type.

Honey in the Comb

Do you remember your reaction when you first tasted honey on a comb from a hive you managed, and helped the bees grow in numbers so they could produce the honey? Technically, you did not produce the honey, the bees did, and it is not your honey, it belongs to the bees. But as a bee-

keeper you have worked very hard to help the bees to do their job. By helping the bees produce a surplus of the crop, you can benefit from the sale of the excess.

It is a great thrill to be in an apiary when a visitor or new beekeeper tastes honey 'hot from the hive' for the very first time. There is often a struggle to get the honey-coated finger to the mouth because the bee veil is in the way. But once the honey snakes its way into the mouth of the taster, there is a quiet spiritual moment when the person realizes that this honey in the comb is not like any honey they have ever tasted before.

In the hive, new honey is almost always



(l) Joe Calme holds a frame of honey ready for the extractor. This can only be used for liquid honey production because the wax or plastic foundation, used to strengthen the comb, cannot be consumed. (r) West Virginia creamed honey in a plastic tub. Because creamed honey is made with ultra-fine crystals, the product is best offered in an open-top container for easier use.



Kansas beekeeper Joli Winer services a buying crowd at the Saturday Farm Market. Notice the array of products, from tubs of flavored creamed honey to several flavors and container sizes of liquid honey. The key to this operation, Jolie says, is having everything in the van when you leave the farm to go sell. You cannot sell from an empty cart, she reminds.

liquid. A few floral sources produce honey that granulates quickly, like canola (oil seed rape). This nectar produces a honey with a high percentage of glucose, one of the two monosaccharides or simple sugars in honey. The glucose molecules crystallize easily, while the fructose molecules are slower to granulate. In areas where honey is fast to go from the liquid to the solid

form, the retail honey market often features much more granulated honey.

In the honeycomb, honey eventually granulates, making it difficult to remove. It may be necessary to crush these combs, heat the wax and honey mixture, separating the liquid wax and honey in the process, due to their different densities. Most beekeepers set aside combs with granulated honey for bee feed during the next late winter and spring, offering the bees the opportunity to clean out the crystals. They will need water to liquefy the honey. During this feeding, it is not unlikely to find sugar crystals at the bottom and entrance of the hive.

Combs or sections of honey can be produced in the hive and sold to customers. Volume honey users will purchase frames of honey for table use, cutting out the portion they need and wrapping the comb in cloth or foil. Others store the entire comb in a large plastic container with a tight-fitting lid to keep ants and other unwanted visitors out of the honey. Beekeepers experimenting with Kenya top-bar style hives may want to sell their honey in the comb, carefully wrapped in food-grade Kraft paper to protect it from handling. If the top-bar is still attached the user can hang it between two supports. If the comb has been cut from the top bar or frame, it really should be packaged as any cut comb product.

Basswood sections of honey have been replaced in the marketplace by plastic combs, such as Ross Rounds, Hogg Casettes and other devices. All of these require a strong hive to draw out the wax and fill it with honey. Consult Killion's *Honey in the Comb* for suggestions.

The best way to store combs of honey, basswood sections, and the plastic holders, is wrapped and in the freezer at zero de-

grees F. This prevents wax moths, small hive beetles and a wide variety of common pests from getting into the honey. Because of the nature of honey chemistry, freezing actually prevents the sugar molecules from granulating, because they are 'super-cooled'. To defrost, remove the honey from the combs and keep it wrapped so the honey does not take up moisture while returning to room temperature.

Of course, small amounts of granulated honey in the comb can be cut out and placed on very hot toast or vegetables. The honey-wax mixture will melt and be enjoyed. There is no nutritive value or harmful aspects to ingesting wax.

Cut Comb

Any piece of honey, from a frame, a bee tree or wherever, may be placed on a wire grid and cut into the desired size, drained, and placed into metal, plastic or glass containers. There are some nice plastic containers that feature the beauty of the wax while the package label holds the lid onto the container, preventing tampering and contamination. A large food-grade stainless steel cutting surface, over a drip tray, will allow the beekeeper to cut several frames at a time and allow the excess honey to drain off the comb. When carefully placed into the container, you have a premium product. Select only the most perfect areas of the honeycomb for cut comb. Avoid any unsealed cells (one or two are okay, but 20 or more detract). Of course, never put comb with brood or pollen into the container—you are selling honey, and just honey. The beeswax is the original packaging!

Left over bits of honey in the wax comb can be squeezed in a cloth bag to remove the honey. The remaining wax may be washed in clean water and the sweetened water used for mead production or as a cooking sweetener (on vegetables, in baking or the liquid in a fruit smoothie). Or the bits of honeycomb can be put in front of a bunch of hungry kids as they get home from school and put onto hot homemade bread. That's a golden memory of my childhood.

Chunk honey

When pieces of well-trimmed honeycomb are placed in an empty jar and surrounded by liquid honey, it creates a very desirable product called chunk honey. To produce this product you must have excellent skills at producing both comb honey as well as liquid honey. Usually the honey surrounding the honeycomb is from the same floral source, but this is not necessary. By careful matching, you can put a darker gold comb honey in the container surrounded by a lighter honey, drawing the eye to the bright comb inside. This also gives you a chance to experiment with floral flavors. I was recently given a jar of chunk honey where the comb honey is from alfalfa, but the surrounding honey is from sweet clover.

This is usually a small production, lim-



Extracted and filtered Alaskan honey sold at the Alaska State Fair late last summer. Unlike the creamed honey, liquid honey generates great eye appeal for the customers.

ited yield product. It should command a premium price. Careful jar selection, label design, and associated marketing should emphasize the uniqueness of the product as well as the sensory taste delights inside. Package and prepare this product as one might a \$100 bottle of fine wine!

Liquid honey

As mentioned in the opening, the majority of the honey sold in the United States is sold in the liquid state. The use of Langstroth-style movable frames (and an uncapping and extractor system) provides a simple and effective method to produce a large volume of honey very economically. I recommend that all new beekeepers start with movable frame hives. If they want to produce 'natural combs' (those produced without starter foundation, beeswax or plastic) they can put a bead of wax on the bottom of the top bars of the frames or use a short starter strip of foundation as an anchor point for comb construction. Of course, it takes much more honey production to produce the wax for this method (I have seen estimates of 8 to 15 pounds of honey to produce one pound of beeswax), but the honeycomb will only contain contaminants (natural and human-made) from a single season of production. These frames produce honey for use as cut comb or as crushed honey. It cannot be put into an extractor. Reuse of drawn out comb built on strong foundation is more economical, but even large commercial beekeepers are adapting comb replacement systems that replace honeycomb every three to five years. This is a huge investment in producing healthier bees that will be better able to withstand the attack of parasites, diseases, viruses and trace amounts of chemicals.

Honey in the comb is ready for extraction when the moisture content has been reduced from an average of 60% water to less than 20% water—I prefer to extract only when honey is in the 18% range, since we want our honey to be lower moisture so it keeps longer. 'Wet' honey, over 20% moisture, is faster to ferment, producing an undesirable product, since the yeasts involved are not the same as used in producing honey wine, or mead. Fermented honey should not be fed back to bees, since it contains some nasty and indigestible products of this fermentation.

Granulated or Crystallized Honey

Since granulation is a natural process, there are several ways to deal with it:

1. Put honey into large containers and reliquify them before filtering and bottling. This is where the majority of the world supply of honey goes and how it is processed.
2. Put minimally processed (screening) honey into small jars and allow the honey to granulate naturally. A label that explains that this is natural, not a sign of spoilage, will help. I add that granulated



'Natural Honey' is a term used for comb honey produced from comb built by the bees. Some comb distortion is expected. Once the cells are filled and sealed, this will be a delightful honey in either comb honey or chunk honey sales. The entire frame may be sold to knowing buyers who accept a little comb distortion in trade for an 'all bee' product.

honey may be used as is on hot toast or biscuits or in cooking and baking when warmed just enough to measure into containers. In the current US market, I see more and more folks seeking out natural products, even at the big box stores. *As a local honey producer you can reduce your workload and sell a more natural product if you sell granulated honey.* People in Canada and Europe prefer honey in the crystallized state; so many people who have traveled are looking for this product and will pay well for it.

3. Seed the warm liquid honey with a finely produced sample of creamed honey you produced before or purchased from another beekeeper. While some of these products are labeled 'whipped' honey, I do not like to incorporate air into the honey, so I mix in a blender at a slow speed so the granules and the warm liquid honey are thoroughly mixed. Immediately bottle and store in a room between 55 and 60 degrees F. This will promote rapid and fine crystal formation. If you want to investigate this process, read about the Cornell University Dyce Process of making Creamed Honey. During preparation and seeding, this creamed honey product is ideal for the addition of freeze-dried fruit, vegetable or essential oil products. Each product increases your market range, especially when you are able to offer product samples.

Visit Dr. Connor's website www.wicwas.com for a list of the books he writes and sells. Check out the queen rearing courses he will offer in Florida, Virginia, Maryland and Michigan in 2011.

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