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Sugar, Honey and Other Sweeteners

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Sugar and Other Sweeteners

There are a wide number of sugars to be found for purposes of sweetening foods. Fructose is the primary sugar in fruit and honey; maltose is one of the sugars in malted grains; pimentose are found in olives and sucrose is what we know as granulated or table sugar. Sucrose is a highly refined product made mostly from sugar cane though sugar beets still contribute a fair amount of the world supply as well. Modern table sugar is now so highly refined as to be virtually 100% pure and nearly indestructible if protected from moisture.

Powdered sugar and brown sugar are simple variations on granulated sugar and

share its long life.

Liquid sweeteners do not have quite the longevity of dry sugars. Honey, cane syrup, molasses, corn syrup and maple syrup may crystallize or mold during long storage. These syrups are chemically not as simple as table sugar and therefore lose flavor and otherwise break down over a long period of time.

Types of Sugars

Buying granulated sugar and its close cousins is really a very simple matter. Buy a brand you know you can trust and be certain the package is clean, dry and has no insect infestation. There's very little that can go wrong with it.

Granulated Sugar

Granulated sugar does not spoil, but if it gets damp it will likely cake up or get lumpy. If it does, it can simply be pulverized again until it regains its granulated texture. Granulated sugar can be found in varying textures, coarser or finer. Castor/caster sugar is a finer granulation than what is commonly sold as table sugar in the U.S. and is more closely equivalent to our superfine or berry sugar.

Powdered, Confectioners or Icing

All names refer to the same kind of sugar, that is white granulated sugar very finely ground. For commercial use there is a range of textures from coarse to ultra-fine. For home consumption, what is generally found is either Very Fine (6X) or Ultra-Fine (10X), but this can vary from nation to nation. Not all manufacturers will indicate the grind on the package though. Sugar refiners usually add a small amount of corn starch to prevent caking.

Powdered sugar is as inert as granulated sugar, but it is even more hygroscopic and will absorb any moisture present. If it absorbs more than a little it may cake up and get hard. It's difficult to reclaim hardened powdered sugar, but it can still be used like granulated sugar.

Brown Sugar, Light/Dark

In the United States brown sugar is basically just refined white sugar that has had a bit of molasses or sugar syrup and caramel coloring added to it. Dark brown sugar has more molasses which gives it a stronger flavor, a darker color and makes it damp. Light brown sugar has less molasses which gives it a milder flavor, a blonder color and is slightly dryer than the dark variety. For storage purposes you may want to just stock the dark

variety. Light brown sugar can be made by combining one fourth to one third white sugar to the remainder dark brown sugar and blend thoroughly.

Both varieties need to be protected from drying out, or they will become very hard and difficult to deal with. Nor do you want to allow them to become damper than what they already are.

There are granulated and liquid brown sugars available, but they don't have the same cooking qualities as ordinary brown sugars. They also don't dry out and harden quite so readily either.

Raw, Natural or Turnibado Sugar

In recent years, sugar refiners have realized that there is a market for less refined forms of cane sugar here in the U.S. and have begun to sell this kind of sugar under various names and packagings. None of it is really "raw" sugar since it is illegal to sell it in the U.S. due to the high impurities level in truly raw sugar. All of it has been processed in some form or fashion to clean it, but it has not been subjected to the full refining and whitening processes of ordinary white table sugar. This leaves some of the natural color and a mild flavor in the sweetener. All of these less refined sugars should be stored and handled like brown sugar.

Outside of the United States it is possible to buy truly raw sugar and it can be found under names such as "muscovado", "jaggery" (usually a raw palm or date sugar), "demerara" and others. With all of the molasses and other impurities retained it is quite strong in flavor so would not be suited to general use, but there are recipes that call for it. In spite of moisture and impurities it can be stored like brown sugar since its sugar content is high enough to inhibit most microbial growth.

Types of Honey

Honey is probably the oldest sweetener known to man. It predates recorded history and has been found in the Egyptian pyramids. It's typically sweeter than granulated sugar by a factor of 25%-40% depending upon the specific flowers from which the bees gather their nectar. This means a smaller amount of honey can give the same amount of sweetening as sugar. The source flowers also dictate the flavor and the color of the sweetener as well. Honey color can range from very dark (nearly black) to almost colorless. As a general rule, the lighter the color and the more delicate the flavor, the greater the price the honey will bring.

As you might expect, since honey is sweeter than table sugar, it also has more calories as well -- 22 per teaspoon compared to granulated sugar's 16 per teaspoon. There are also trivial amounts of minerals and vitamins in the bee product while white sugar has none. Raw honey may also contain minute quantities of botulinum spores and should not be fed to children under one year of age. [Please read the post below from geri guidetti concerning this](#). Raw honey is OK for older children and adults. Honey is not a direct substitute for table sugar however, it's use in recipes may call for a bit of alteration to get the recipe to turn out right.

Honey comes in a number of forms in the retail market and they all have different storage characteristics:

Whole-Comb

This is the bee product straight from the hive. This is the most unprocessed form in which honey comes, being found as large pieces of waxy comb floating in raw honey. The comb itself will contain many unopened honey cells.

Raw

This is unheated honey that has been removed from the comb. It may contain bits of wax, insect parts and other small detritus.

Filtered

This is raw honey that has been warmed slightly to make it more easy to filter out small particles and impurities. Other than being somewhat cleaner than raw honey it is essentially the same. Most of the trace amounts of nutrients remain intact.

Liquid

This is honey that has been heated to higher temperatures to allow for easier filtering and to kill any microorganisms. Usually lighter in color, this form is milder in flavor, resists crystallization and generally clearer. It stores the best of the various forms of honey. Much of the trace amounts of vitamins, however, are lost.

Crystallized or Spun

This honey has had some of its moisture content removed to make a creamy, spread. It is the most processed form of honey.

Buying Honey

Much of the honey sold in supermarkets has been blended from a variety of different honeys and some may have even had other sweeteners added as well. Like anything involving humans, buying honey can be a tricky business. It pays to deal with individuals and brands you know you can trust. In the United States you should buy labeled U.S. GRADE A or U.S. FANCY if buying in retail outlets. However, be aware there are no federal labeling laws governing the sale of honey, so only honey labeled "pure" is entirely honey and not blended with other sweeteners. Honey grading is a matter of voluntary compliance which means some producers may be lax and sloppy about it. This can be a real nuisance when producers use words like "organic", "raw", "uncooked" and "unfiltered" on their labels, possibly to mislead. Fortunately, most honey producers are quite honest in their product labeling so if you're not certain of who to deal with, it is worthwhile to ask around to find out who produces a good product.

Honey may also contain trace amounts of drugs used in treating various bee ailments, including antibiotics. If this is a concern to you, then it would be wise to investigate with your local honey producer what has been used.

Honey Storage

Honey is much easier to store than to select and buy. Pure honey won't mold, but may crystallize over time. Exposure to air and moisture can cause color to darken and flavor to intensify and may speed crystallization as well. Comb honey doesn't store as well liquid honey so you should not expect it to last as long.

Storage temperature is not as important for honey, but it should be kept from freezing and not exposed to high temperatures if possible. Either extreme can cause crystallization and heat may cause flavor to strengthen undesirably.

Filtered liquid honey will last the longest in storage. Storage containers should be opaque, airtight, moisture- and odor-proof. Like any other stored food, honey should be rotated through the storage cycle and replaced with fresh product.

If crystallization does occur, honey can be reliquified by placing the container in a larger container of hot water until it has melted.

Avoid storing honey near heat sources and if using plastic pails don't keep it near petroleum products (including gasoline engines), chemicals or any other odor-producing products.

Raw Honey and Botulism

From: Geri Guidetti

Duane Miles wrote:

>If I recall correctly, honey contains very, very small amounts of the
>bacteria that cause botulism. For adults, this seldom causes problems.
>Our immune system is capable of dealing with small numbers of even
>nasty bacteria, they do it all the time. The problem is when we get
>large numbers of bacteria, or when our immune system is damaged or not
>yet developed. >

>That is where the problem with honey comes in. Some people used to use
>honey to sweeten milk or other foods for infants. Infants immune
>systems sometimes cannot handle the bacteria that cause botulism, and,
>of course, those infants became seriously ill. So pediatricians now
>advise strongly against using honey for children under a certain age.

Yes, honey can contain the temperature resistant spores of *Clostridium botulinum*, the bacterium that causes botulism. The organism is a strict anaerobe, meaning that it only grows in the absence of molecular oxygen. The problem with infants and honey is that the small, intestinal tract of an infant apparently is sufficiently anaerobic to allow the spores to germinate into actively growing *C. botulinum* organisms. Essentially, the infant serves the same role as a sealed, airtight, contaminated can of beans as far as the organisms are concerned. There in the infant's body the bacteria secrete the dangerous toxin that causes the symptoms of botulism. There have been quite a few documented infant deaths due to honey. As I recall, the studies identifying honey as the source were done in the '80s. Most pediatricians recommend no honey for the first year. It is probably best to check with your own for even later updates...Geri Guidetti, The Ark Institute

HoneyOutgassing

Q: My can of honey is bulging. Is it safe to use?

A: Honey can react with the can lining to release a gas especially when stored over a long period of time. Honey's high sugar content prevents bacteria growth. If there is no sign of mold growth, it is safe to eat.

Types of Cane Syrups

Molasses and Cane Syrup

These two sweeteners are not precisely the same thing. Molasses is a by-product of sugar refining and cane syrup is simply cane juice boiled down to a syrup, in much the same way as maple syrup is produced. Non-Southerners (U.S.) may know it better as "unsulphured molasses" even if this is not completely correct. Sulphured molasses is available on the market and very cheap as well, but it's strong flavor is unattractive and generally not desirable.

Sorghum Syrup

This is produced in the same manner as cane syrup, but sorghum cane, rather than sugar cane, is used. Sorghum tends to have a thinner, slightly sourer taste than cane syrup.

Treacle

This sweetener comes in varying colors from a rather dark version, similar to, but not quite the same as blackstrap molasses, to paler versions more similar to golden syrup.

All these syrups are generally dark with a rich, heavy flavor.

Golden Syrup

This syrup seems to be both lighter and paler in color than any of the above three, probably more similar to what we would call a table syrup here in the U.S.

Table Syrup

There are many "table syrups" sold in supermarkets, some with flavorings of one sort or another such as maple, various fruits, etc. A close examination of the ingredients list will reveal mixtures of cane syrup, cane sugar syrup or corn syrup along with preservatives, colorings and other additives. They usually have a much less pronounced flavor than molasses, cane syrup, sorghum or the darker treacles. Any syrup containing corn syrup should be stored as corn syrup.

Storing Cane Syrups

All of the above syrups, except for those having corn syrup in their makeup, have the same storage characteristics. They can be stored on the shelf for about two years and up to a year after opening. Once they are opened, they are best kept in the refrigerator to retard mold growth. If mold growth does occur, the syrup

should be discarded. The outside of the bottle should be cleaned of drips after each use. Some pure cane and sorghum syrups may crystallize in storage, but this causes no harm and they can be reliquified using the same method as for honey.

Corn Syrup

Corn syrup is a liquid sweetener made by an enzyme reaction with corn starch. Available in both a light and a dark form, the darker variety has a flavor similar to molasses and contains refiners syrup (a byproduct of sugar refining). Both types often contain flavorings and preservatives. They are commonly used in baking and candy making because they do not crystallize when heated. Corn syrup is very common in the U.S., but less so in the rest of the world.

Corn syrup stores poorly compared to the other common sweeteners and because of this it often has a "best if used by" dating code on the bottle. It should be stored in its original bottle, tightly capped, in a cool, dry place. New unopened bottles keep about six months from the date on the label. After opening, keep the corn syrup four to six months. These syrups are very prone to mold and to fermentation so be on the lookout for bubbling or a mold haze. If these present themselves, throw the syrup out. You should always be certain to wipe off any drips from the bottle after every use.

I don't recommend corn syrup as a storage food since it stores so poorly.

Maple Syrup

Maple syrup is probably the only sweetener that has developed a cult-like following (OK, cane syrup has its ardent fans too). Produced by boiling down maple sap until it reaches a syrup consistency, it is slightly sweeter than table sugar. Maple syrup is judged by much the same criteria as honey: Lightness of color, clarity and taste. Pure maple is generally expensive and most pancake syrups are corn and cane sugar syrups with either natural or artificial flavorings.

New unopened bottles of maple syrup may be kept on a cool, dark, shelf for up to two years. The sweetener may darken and the flavor get stronger, but it is still usable.

After the bottle has been opened, it should be refrigerated. It will last about a year. Be careful to look out for mold growth. If mold occurs, discard the syrup.

Flavored pancake syrups should be kept and stored as corn syrups.

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