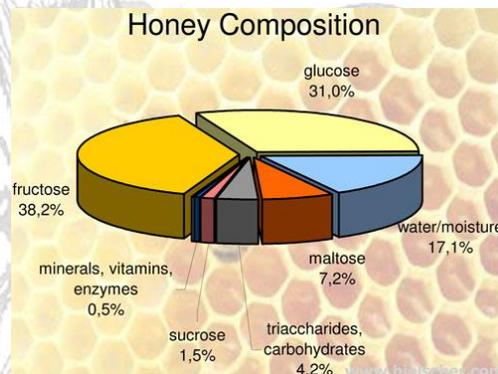
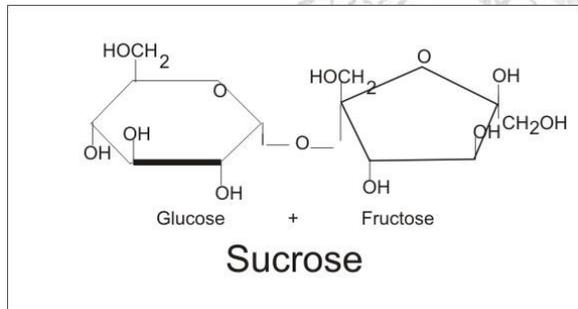




## To Feed or Not to Feed, That is the Question!

If you are in a room of beekeepers and you want to see faces flush and arguments to ensue, ask about whether you should feed or not and the *right way* to do it! Keep in mind these are my opinions, the information that I have found and digested (pun intended) and that you should always practice what you are comfortable practicing! It is *your* relationship with *your* bees; not mine. So, here are some basic questions answered.

**What is feeding?:** Feeding is done by beekeepers to ensure that the beehive has enough food for the winter season. To be honest, it is something that has only come in to practice as beekeeping has increased as an industrial practice. Once honey has become a bulk commodity, it has become the beekeepers practice to harvest most/more honey than the hive can replace before the winter. Sugar on the market has always had a cheaper price per pound than honey, so it has been an economic incentive to harvest the honey and artificially feed the bees. And guess what? The bees don't even know the difference! Just kidding. Of course they do! So are you an evil do-er if you feed? Of course not, but there are some very important things to consider before you feed.



**Considerations to take before feeding:** In the image above, you can see the difference in the components of sugar vs. honey. Now, these images do not even take in to considerations the yeasts and living bacteria that exist in the raw honey stored in the hive which aids the bees in digestion and health. The .5% of minerals and enzymes in the honey, I feel, plays an integral role in the health of the colony throughout the year. So, although the bees do and can survive on artificial feed, there will be a long term effect on the bees if this is *all* they are eating. So, it is important that you leave enough honey for the bees to overwinter with or without feeding. They work all year to gather the food that they know they are going to need to survive the winter.



**When is it a good idea to feed?:** Many people will feed their bees when they come from a package overseas because the trip can cause the colony to be weak and lack the energy needed to forage for nectar and pollen sufficient to feed the bees and their young. Feeding also attributes to hive build up, meaning that there is food to go around, even if there isn't a nectar or pollen source. Commonly beekeepers will feed during times of dearth. This means bees are fed in the early spring, during prolonged rainy periods, and in the fall. Dearth feeding is commonly done in the beekeepers interest, and is not necessary to be done for the sake of the bees. Feeding during these times offers a larger population of mature foragers when the nectar flow comes on, ideally ensuring a larger honey crop in the fall or bees to split in the early parts of summer.

**What are the risks of feeding?:** The time of year is important when you are artificially feeding honeybees. Whether the product being stored in the comb comes from nectar or sugar, the form of the product must end off at 14%-21% moisture. This means that that excess moisture must be lost through evaporation before the product is considered *cured* or *ripened*. At which case the moisture content is also low enough to keep it from fermenting in the comb. For the proper ripening to occur, there needs to be an ambient temperature high enough to promote healthy evaporation as well as a long enough break in time from the feeding, capping, and fall cold daytime and night-time temperatures. As mentioned before in the previous topics of winterization, moisture can be a very important challenge for the bees throughout the winter. If the bees go in to winter with combs full of nectar with a moisture content over that of 21%, you run a risk of excess moisture build up throughout the winter as the evaporation process intermittently takes place throughout the winter months inside the hive without adequate external temperatures to encourage that moisture to go beyond the hive door. So, be sure not to feed too late in to the fall season or in the winter months.

**What role does pollen play in the spring/summer/fall?:** Pollen is a very important part of honeybee health. It is their only source of protein in the bee diet and is a primary component of bee bread or brood food.

- **Spring:** Pollen is an important part of honeybee development between 2 and 21days. Just as important, it is an indicator of the external environments progression through the seasons. Within the beehive, the bees live in relative darkness, and most of their understanding of what is growing outside the hive is strictly dependant on what the worker bees are bringing in. This goes for the queen too! So, if in the early parts of spring, the bees begin to bring in pollen, it is a trigger for the queen to start laying eggs. The environments production of pollen stands as a testament that summer is fast approaching and the food that will be available for the hive will soon be at their disposal. So, when beekeepers place pollen patties in the beehive, what they are doing is tricking the beehive in to thinking that outside the hive, there are flowers popping their heads out of the snow already. This causes for a longer season for the beekeeper and a stronger foraging work force when the nectar flow comes on in 2 months. This is the cause *spring build up*. There is a risk that the beekeeper takes on putting pollen patties in the hive in the spring, and it is the lack of knowledge of the honey store surplus available to the bees in the



hive and the highly unreliable weather that is to come in the following months. It has happened where a beekeeper has put in pollen patties too early and the bees starved out because there weren't enough food stores to feed the growing and expanding hive population.

- **Summer:** As said before, pollen is integral to the development of young bees, and so pollen is needed throughout the summer months to be fed to the young. It is during the summer months though that the bees store surplus pollen in the hive to be saved for the fall and spring months to come. You can observe the development and growth of larval stage bees by watching the bees bringing in pollen at the entrance of your hive. A colony without brood will not bring in pollen.
- **Fall:** Pollen is very important to the development of healthy *winter bees*.  
    ***“Winter bees live a lot longer (100+ d) than summer bees (~30 d)”*** The trigger colonies use to switch from summer to winter bee production is unknown, but a leading hypothesis is that it is simply the cessation of brood rearing in the fall. Nursing, after all, is hard work and the bees born into a nest with no nursing jobs have it easy and live longer. Although the verdict on the trigger is still out, it is clear that winter bees differ physically: “newly emerged bees that overwinter have significantly greater dry weight, protein, fat, triglycerides, glycogen and glucose content than bees that do not survive to winter” (<http://www.capabees.com/main/files/pdf/winteringpdf.pdf>)

