

# Some Suggested Sugar Recipes

Occasionally it becomes necessary to supplement a colony's diet. This may be due to lack of food stores, to encourage a particular behaviour, or to medicate the entire hive. The following are recipes that are considered to be bee safe. Each of these recipes may be of benefit when supplied at the correct time.

## Honey

Despite the fact that on first observation it would seem obviously correct, honey is not the best feed for bees. Honey is in essence bee food that has been processed so that it won't spoil. When given the chance, bees prefer to eat nectar. When honey is used as a feed, or within one of the following recipes, be sure to know the source. If at all possible only re-feed honey to the same hive it was harvested from. Never use store-bought honey. Store-bought honey may contain AFB or other such spores, which are perfectly safe for human consumption but can be deadly to bees.

## Sugar Syrup

One of the reasons to keep bees is because the honey that they create is harvestable. After a honey harvest it may be necessary to supply bees with an artificial honey replacement, or a source of artificial nectar to prevent starvation. Other times artificial nectar can be used to encourage the drawing of comb or aid in the rearing of brood when real nectar may be scarce or unavailable. It should also be noted that honey contains materials that bees cannot digest and sugar syrup makes for a better source of bee feed. This does not mean that it is appropriated to take all of the bees' honey, after all the bees did work rather hard for it. Bees should always have excess honey in storage. When using sugar only use white cane sugar, don't use raw sugar, brown sugar or molasses as they contain impurities that may harm the bees or be difficult for the bees to digest. *If using powdered sugar instead of standard crystallized cane sugar be sure to check the ingredients list, as some powdered sugar contains anti-caking agents that might be harmful to bees.* Although the following recipes call for ingredients by weight, volume is a close enough approximation, as the bees don't particularly care about the specifics of sugar concentration.

### 1:1 Syrup

1:1, or One-to-One syrup can be used for supplemental spring feeding and encourage the drawing of comb.

- 1 part (by weight) sugar
- 1 part (by weight) water

Simply stir sugar into room temperature water until all the sugar has dissolved to produce the desired quantity. The dissolving process will be sped up with hotter water, just be sure not to boil the sugar solution. One volume of water plus one volume of sugar when prepared equals roughly 1.5 volumes of syrup.

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## 2:1 Syrup

2:1, or Two-to-One syrup can be used for fall feeding after the last honey harvest, or if the bees do not have a sufficiently large store of honey.

- 2 parts (by weight) sugar
- 1 part (by weight) water

The two parts sugar will not dissolve in room temperature water. Because of this mixing difficulty it is advisable to mix the sugar into near-boiling water. Do not allow the sugar mixture to boil, as this will give the chance for some of the sugars to caramelize, creating a partially indigestible and possibly even toxic solution as far as the bees are concerned. Be sure to let the solution thoroughly cool before feeding it to the bees. It was once common practice to add cream of tartar (tartaric acid) to 2:1 syrup to prevent re-crystallization of the sugars, however this is not recommended, as it is believed to shorten the life spans of the bees that consume it.

## 1:2 Syrup

1:2, or One-to-Two syrup can be used to stimulate brood rearing by simulating a nectar flow.

- 1 part (by weight) sugar
- 2 parts (by weight) water

Simply mix the sugar with room temperature water and feed the bees.

## Bee Candy

Occasionally it is not advised to feed bees syrup. Sometimes when emergency feeding it is best to use a dry or semi-moist food, other times bee candy is used as it is less messy than feeding syrup. Even though bee candy may be convenient to use as feed, it is not recommended as a complete substitution to syrup.

## Fondant Bee Candy

Fondant bee candy can be fed directly to the bees once cooled. It is also common to use this recipe in small quantities to plug the hole on a Queen Cage.

- 4 parts (by volume) white sugar
- 4 parts (by volume) 2:1 Syrup
- 3 parts (by volume) water

Boil water and slowly add the syrup and sugar until dissolved. Continue heating until the mixture reaches 238°F (114°C). Allow the solution to cool (without mixing) until it is slightly warm to the touch, and begin to mix and aerate the solution, the colour should lighten. Pour into shallow dishes or moulds and save for later use.