Feeding Bees Nectar Substitutes

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Nectar is a glandular secretion of plants, usually collecting at the bases of flowers that bees depend upon for their energy source. Nectar normally contains a low to moderate concentration of sugar, and honeybees dehydrate nectar to produce honey. There are barely measurable amounts of proteins, vitamins and other nutrients in nectar, especially if a little pollen becomes incorporated into it.

Bees use nectar in two ways. It can function as a water substitute, used to dilute brood food and air condition the hive. Or it can be "ripened" by the bees to become a stored carbohydrate resource. The sugar syrup that we feed to the bees can be used in either of those ways, also. But, we use different sugar concentrations for different purposes, as will be mentioned shortly.

Attentive beekeepers are kept aware of colony conditions through periodic examinations of their colonies. Inspections should be conducted about every ten days during early and late spring. Early spring inspections relate more to adequate food supplies. Late spring inspections deal more with swarm control. At each inspection the beekeeper should determine whether or not the bees have adequate food to carry them through a dearth period, usually caused by weather conditions that prohibit foraging flights. If the bees have twenty pounds of honey or stored sugar syrup, they will make it to the next inspection in ten days. If they have less stored carbohydrate, they need to be fed.

Always feed a pollen substitute in the spring, if the bees need to be fed sugar syrup. Beekeepers dealing with sugar (sucrose) syrups that they mix themselves will follow these guidelines. Syrups fed early in the season are used for brood rearing. Feeding sugar usually stimulates egg laying, so early season feedings are done with "light" (1 water : 1 sugar) syrup. Syrups fed late in the season, to assure adequate winter stores, are not intended to be used as brood food, but are to be stored as ripened syrup. Thus, fall feedings are done with "heavy" (1 water : 2 sugar) syrup. If fumagillin treatments are going to be used in the fall, feed for weight, first, then top off the colony with medicated syrup. If the medicated syrup is blended with earlier syrup, it will be too dilute to work. Beekeepers who feed high fructose corn syrup to their bees usually do not dilute the syrup, regardless of the season. A fructose solution always contains some level of hydroxymethylfurfural (HMF) that increases over time, especially with heat. HMF is toxic to honeybees at high enough concentrations.

Syrup is best fed to each colony individually. Each colony receives its full share, regardless of colony size. It is a good idea to start feeding in the evening, after the bees have settled down for the day. Bees interpret a sudden abundance of syrup as an excellent opportunity for robbing, somewhere. By feeding after flying has ceased, the potential robbers find a source right at home. Try not to spill syrup on the hives. It attracts ants and robbing bees.

Bulk sugar prices may be more expensive than left over candy or soda pop syrups. Be very cautious when purchasing these bargain carbohydrates. Sugar from broken bags may contain

insecticides from floor sweepings. Soda syrups or candies may contain indigestible long chain carbohydrates, like caramel. Soda syrups may be "out of date." If they are fermenting, the bees may be able to salvage some of the remaining sugar, at the cost of getting tipsy. If bacteria have begun working on the alcohol and converted it to acids, the "soured" syrup will be toxic to the bees and substantial losses can result.

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