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Sugar vs. Corn Syrup; What Should I feed My Bees?

What should you feed your bees? Maybe a little background on sugars will help you decide.

Sugars can be divided into two primary categories, monosaccharides and disaccharides.

Monosaccharides – the simple sugars: There are three simple sugars, or monosaccharides, in nature; namely glucose, fructose and galactose. Glucose, and dextratory glucose (also called dextrose), is found in vegetables, fruit and honey. Fructose, also called levulose or fruit sugar, is found in many fruits and in honey also. (Honey contains about 40% fructose). Galactose exists almost exclusively in the bodies of mammals. Mammals convert glucose to galactose

Disaccharides are pairs of simple sugars. The three basic types of disaccharides are sucrose, lactose and maltose. Sucrose is common table sugar. It is made from glucose and fructose which form a crystal when combined. While honey contains glucose and fructose, it is not a disaccharide since the bulk of the glucose and fructose exist as separate simple sugars.

Beet vs. Cane Sugar

Both beet and cane sugar are sucrose. Some bakers shy away from beet sugar since it *may* contain a larger percentage of impurities compared to cane sugar.

High fructose corn syrup (HFCS)

High fructose corn syrup is available in various concentrations of fructose, but the most common type used by beekeepers is 55-HFCS which is 55% fructose, 41% dextrose. This is often supplied in a 77% solids mixture (77% fructose, 23% water). HFCS 55 is most often diluted by beekeepers an additional 10%. Some caution must be used when purchasing HFCS to make certain that it has been stored properly. Overheating of HFCS can create HMF which can be toxic to bees.

What is in the plant nectar my bees consume?

Sucrose, glucose and fructose are by far the predominant sugars found in nectar. Much smaller quantities of some other sugars, such as maltose and raffinose are found in the nectars of certain plants. The ratios of sucrose, glucose and fructose vary widely among plant types. For more insights check out the Sept 2008 issue of *Bee Culture* magazine.