**GO “CLEAN LABEL” WITH SUGARIGHT:**

**REPLACING HFCS WITH LIQUID SUGAR**

With many consumers concerned about the correlation between the consumption of HFCS and health issues, many food companies are replacing HFCS with sucrose (cane or beet sugar). And when non-GMO is required, then liquid cane sugar is the preferred option, as almost all corn based sweeteners produced in the US is made from GMO corn.

**What is the difference between HFCS and sugar?**

Sucrose (sugar), the most well-known sweetener, is made by crystallizing sugar cane or beet juice. Sucrose is also made up of the same two simple sugars, glucose and fructose, joined together to form a single molecule containing one glucose molecule and one fructose molecule, an exact one-to-one ratio.

HFCS is derived from corn starch. Starch itself is a chain of glucose (a simple sugar) molecules joined together. When corn starch is broken down into individual glucose molecules, the end product is corn syrup, which is essentially 100% glucose.

To make HFCS, enzymes are added to corn syrup in order to convert some of the glucose to fructose. Different formulations of HFCS contain different amounts of fructose. The metabolism of glucose is well understood while that of fructose requires further research especially in light of its over consumption through HFCS in the US diet. The public largely remains skeptical and there has been push back from health conscious individuals in the US against the ubiquitous presence of HFCS in the US diet.

**What about calories and sweetness?**

On a solids basis, sugar and HFCS have the same number of calories as most carbohydrates; both contribute 4 calories per gram. Sucrose is a disaccharide consisting of one molecule each of fructose and glucose. HFCS is sold principally in two formulations—42 percent and 55 percent fructose—with the balance made up of primarily glucose and higher sugars.

Liquid sucrose and HFCS 55 are equal in sweetness. When HFCS was developed, it was specifically formulated to provide sweetness equivalent to sugar so that consumers would not perceive a difference in product sweetness and taste. HFCS-55 has sweetness equivalent to sugar and is used in many carbonated soft drinks in the United States. HFCS-42 is somewhat less sweet and is used in many fruit-flavored noncarbonated beverages, baked goods and other products.

**What is the conversion ratio between HFCS and Liquid Sucrose?**

HFCS 55 was formulated specifically to be a direct substitute for Liquid Sucrose with the same solids and the same sweetness. On a dry basis level, liquid sugar will be sweeter than the HFCS 42, so less liquid sugar can be used when the primary function of the HFCS is to add sweetness. All HFCS to liquid sugar conversions must be properly tested by your R&D team.

