



February 6, 2008

Mayor Gavin Newsom 1 Dr. Carlton B. Goodlett Place City Hall, Room 200 San Francisco, CA 94102

Dear Mayor Newsom:

We are writing to you jointly because of our shared concern that the reported proposal to tax beverages in San Francisco on the basis of their high fructose corn syrup (HFCS) content as a uniquely important contributor to obesity lacks scientific merit (Mayor's Office of Communications Press Release, December 17, 2007). This proposal, if adopted, could mistakenly reinforce the myth — now effectively disproven by a steadily growing body of research evidence — that HFCS and sugar might affect the body differently. We respectfully urge that the proposal be revised as soon as possible to reflect the scientific evidence that demonstrates no material differences in the health effects of HFCS and sugar. The real issue is that excessive consumption of *any* sugars may lead to health problems.

HFCS, like table sugar and honey, is composed of fructose and glucose, which are found in many other naturally-occurring foods. As noted by the Food and Drug Administration (FDA) in 1996, "the saccharide composition (glucose to fructose ratio) of HFCS is approximately the same as that of honey, invert sugar and the disaccharide sucrose (or table sugar)." (61 Fed. Reg. 43447 (August 23, 1996), 21 C.F.R. 184.1866. Direct food substances affirmed as Generally Recognized as Safe; High Fructose Corn Syrup - Final Rule.)

HFCS has gained a prominent position in the U.S. food industry for many reasons: it inhibits microbial spoilage by reducing water activity and extends shelf life through superior moisture control; it helps canned foods taste fresher; and it is easy to transport and incorporate into recipes. The lower price of HFCS certainly was a factor in some food manufacturers' choice in sweeteners more than 20 years ago, but simply replacing HFCS with more-expensive table sugar would further raise already rising food prices slightly without any health benefit whatsoever.

The FDA does not treat HFCS any differently from sucrose or other sugars under nutrition labeling regulations. The FDA's labeling regulations require only that "Sugars shall be defined as the sum of all free mono- and disaccharides (such as glucose, fructose, lactose, and sucrose)." (21 C.F.R. 101.9 (c) (6) (ii) Nutrition labeling of food - Sugars.)

<u>Likewise</u>, the U.S. Dietary Guidelines do not distinguish between HFCS and sugar. In fact, the Guidelines note that the body treats added sugars such as HFCS and naturally occurring sugars similarly: "Although the body's response to sugars does not depend on whether they are naturally present in a food or added to the food, added sugars supply calories but few or no nutrients." (U.S. Department of Health and Human Services and U.S. Department of Agriculture. 2005. *Dietary Guidelines for Americans* 2005. Chapter 7 Carbohydrates. Page 35.)

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Several recent scientific reports have shown that the human body metabolizes HFCS and sugar in much the same way.

- Kathleen J. Melanson, et al. at Rhode Island University recently reviewed the effects of HFCS and sucrose on circulating levels of glucose, leptin, insulin, and ghrelin in a group of lean women. The study found "when fructose is consumed in the form of HFCS, the measured metabolic responses do not differ from sucrose." (Melanson KJ, Zukley L, Lowndes J, Nguyen V, Angelopoulos TJ, Rippe JM. 2007. Effects of high-fructose corn syrup and sucrose consumption on circulating glucose, insulin, leptin, and ghrelin and on appetite in normal-weight women. *Nutrition* 23(2):103-12.) (This study was funded by a soft-drink company.)
- Additionally, no credible research has demonstrated that HFCS affects appetite differently than sugar. Research by Pablo Monsivais, et al. at the University of Washington found that "There was no evidence that commercial cola beverages sweetened with either sucrose or HFCS have significantly different effects on hunger, satiety, or short-term energy intakes." (Monsivais P, Perrigue MM, Drewnowski A. 2007. Sugars and satiety: does the type of sweetener make a difference? *Am J Clin Nutr*. Jul;86(1):116-23.) (This study was funded by an unrestricted grant from the soft-drink and corn-refining industries.)
- A recent review of the research literature on the dietary role of HFCS has found insufficient support for the notion that HFCS could play a unique causal role in obesity. The expert panel led by Richard Forshee, Ph.D., of the University of Maryland Center for Food, Nutrition, and Agriculture Policy (CFNAP), concluded that "the currently available evidence is insufficient to implicate HFCS per se as a causal factor in the overweight and obesity problem in the United States." (Forshee RA, Storey ML, Allison DB, Glinsmann WH, Hein GL, Lineback DR, Miller SA, Nicklas TA, Weaver GA, White JS. 2007. A Critical Examination of the Evidence Relating High Fructose Corn Syrup and Weight Gain. *Critical Reviews in Food Science and Nutrition*. 47(6):561–582). (This review was funded by an unrestricted grant from a member of the corn refining industry.)

In addition to those published studies and review, two recent abstracts presented at scientific meetings also did not find any special problems related to HFCS:

- Linda M. Zukley, et al. at the Rippe Lifestyle Institute reviewed the effects of HFCS and sucrose on triglycerides in a study group of lean women. This short-term study found "no differences in the metabolic effects in lean women [of HFCS] compared to sucrose," and called for further similar studies of obese individuals or individuals at risk for the metabolic syndrome. (Zukley M, et al. June 2007. The Effect of High Fructose Corn Syrup on Post-Prandial Lipemia in Normal Weight Females. Presented at the June 2007 meeting of The Endocrine Society. Program Abstract #P2-46.)
- Joshua Lowndes, et al. reported on the effects of HFCS and sucrose on circulating levels of uric acid. Uric acid is believed to play a role in the development of the metabolic syndrome. This short-term study found "no differences in the metabolic effects in lean women [of HFCS] compared to sucrose" and also called for further similar studies of obese individuals and males. (Lowndes J, et al. June 2007. The Effect of High-Fructose Corn Syrup on Uric Acid Levels in

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Normal Weight Women. Presented at the June 2007 meeting of The Endocrine Society. Program Abstract #P2-45.)

We urge your consideration of the scientific evidence demonstrating the similar health effects of high fructose corn syrup and sugar.

Respectfully submitted,

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