Preparing for a Low-Carb Future

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No, this is not about dieting. The lead feature in this issue of CEREAL FOODS WORLD is about ethanol. The article, contributed by Keith Sanderson, cofounder of an alternative-energy advocacy organization called USA Energy Independence, focuses on technological and economic developments that will affect ethanol demand in the energy and agricultural sectors. So, what exactly does "ethanol" production for energy have to do with the world of cereal foods today?

Simply put, in the United States and other countries, ethanol demand may be reaching a tipping point that carries significant implications for the economics of food product development. The article highlights recent technology developments suggesting that ethanol production in North America is about to explode. Similar trends are also in the offing for soy and other oilseeds, with the nascent commercialization of biodiesel fuels.

According to the front page article by S. Kilman in the November 4-5, 2006 issue of the *Wall Street Journal*, "the booming ethanol fuel industry is rewriting the rules of the Midwest economy with big implications for everyone from consumers and food executives to farmers". The article notes that the growing demand for ethanol has already pushed the price for corn, one of the most ubiquitous ingredients in the American food supply, up by more than 50% since September, the beginning of the 2006 corn harvest, a time during which corn prices typically slump.

Where corn leads, other foodstuffs (e.g., wheat, sugar beets, sugarcane) will follow since reduced corn exports from the United States will have ripple effects on the global demand for other starch commodities. Other countries, with Brazil as a notable leader, are aggressively pursuing ethanol and other biofuel projects that will further increase global pressure on available carbohydrate supplies for fermentation. According to the *Wall Street Journal* article, ethanol already commands 20% of the U.S. corn harvest (using the current 2.8 gal of ethanol per bushel of corn conversion rate for 2006 production figures, I calculate 13%…but why quibble?). If Mr. Sanderson is correct, we can expect the demand for corn from the energy sector to more than triple over the next 7 years. This will have serious implications for the food industry, at least until alternate sources of biomass (e.g., cellulose by-product) become more economical. Similar projections apply for oilseeds to be used for biodiesel. Granted, other supply/demand equations (e.g., reduced petroleum prices) will blur this prognosis over time, but the net-net remains that, for the foreseeable future, grain futures are likely to surge!

In developing cereal foods, it is a given that the core "macro" ingredients are sources of simple and complex carbohydrate, most likely wheat, oats, rice, or corn. The higher unit costs of minor, peripheral ingredients, such as flavors, hydrocolloids, fats, and oils, are largely offset by the relatively low cost of the core, characterizing grain components of the bread, tortilla, pasta, or ready-to-eat cereal. It used to be that cost control in product development involved focusing on the costs of minor ingredients. What happens to the paradigm when the cost of a food's core macroingredients become subject to significant price inflation? Prognostication is always risky business, but methinks that product development laboratories are about to experience a boom economy.

Rising grain commodity prices will significantly impact the relative availability and cost of key ingredients throughout the food supply matrix and will affect what new food products are developed and how. Much of the corn utilized in foods is introduced early in the supply chain, used as feed for poultry and livestock, sweetener bases for carbonated beverages, and as starches in soups, sauces, bakery goods, and confections. Much the same applies for other starchy grain stocks such as wheat, rice, or barley. Global trends toward alternate biofuels are also likely to have profound effects on international grain exports. A shortage in available U.S. corn or Australian wheat supplies, for example, is likely to impose significant costs on importing countries that have incorporated corn and wheat ingredients into their food supplies. Future food costs may be attenuated somewhat by dampened processing and transportation costs or by the reduced cost of oil, protein, or fiber by-products of ethanol production, but these impacts are likely to be minor. As Sanderson's paper documents, global shifts in energy demand toward ethanol, biodiesel, and other grain-derived biofuels will have profound economic ripple effects on all of us that labor in the world of cereal-based foods.

We, the editorial staff of CFW, would like for CFW to serve as a forum, a nexus for the communication of knowledge and ideas between all members of the cereal foods community. To this end, we welcome letters to the editor for publication. There are no limits on propriety of tone or topic matter…as long as they are factually accurate and reasonably polite! We will accept letters that begin as "Dear editor: Sadly, I spewed coffee all over my keyboard when reading the unmitigated nonsense espoused in your recent editorial…," just as we will accept letters that end with "…I thank you most effusively for your keen insights provided." Either way, let us know.

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