



Unintended Consequences of Ethanol—Anticipating the Impact on Commercial Baking

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What a difference a year makes. A shift in the United States' energy policy combined with the heavy international demand of U.S. wheat has sent tremors through the U.S. commercial baking industry with across-the-board ramifications from capital investment to new product development. To compound the problem, many bakers and millers describe the 2007 hard winter wheat crop as the most difficult since 1993. For anyone affiliated with baking, caution is the word moving forward; cost is going to be the first and only consideration in the near term. Depending on the political fate of the ethanol industry and the demand of wheat, baking as well as food manufacturing in general could face long-term challenges.

For baking companies, 2007 began with great promise and opportunity. The 2006 trends in health and wellness offered enormous opportunities. The migration to whole wheat had established a strong foothold; production issues were finding solutions and replacement strategies for trans fats were being developed, almost on a case-by-case basis. "Organic" offered new choices and new opportunities and "all

natural" selections allowed ease of transition for bakers looking for new market opportunities.

In February, *Baking & Snack* magazine reported an increased interest in capital spending projects in their 2007 capital spending report.

"Spending is up across the board...Midrange projects, and spending objectives are shifting back to product quality...Twice the number of companies indicated spending in the \$1 million to \$20 million range compared to 2005. Nineteen percent of the respondents reported projects totaling \$10 million or more—nearly double of 2005."

From all indications, 2007 appeared to be a robust year for commercial baking.

What began in early May 2005 as a policy statement by the Bush Administration on biodiesel and alternative fuel sources at West Point, Virginia, opened the door to a plethora of uncertainty. Congress supported its efforts by setting mandates of 7.5 billion gallons by 2012 and with the help of the farm lobby industry, the food or fuel debate began to trickle through the economy building momentum as it swept across the farms and fields of America. According to the Renewable Fuels Association, in May 2005 there were 81 ethanol plants in the United States, with 16 more under construction, producing approximately 3.6 million gallons per year. By January 2007,

- A shift in the energy policy combined with the heavy international demand of U.S. wheat has sent tremors through the commercial baking industry.
- Both wheat quality and international demand are influencing pricing, product development strategies, and capital improvement investments.
- Many U.S. baking companies, until recently, were enjoying a moderate degree of growth, with the successful strategies focusing on proactive healthy products.
- Looking forward, companies and organizations that can articulate, practice, and align their organizational beliefs with the retiring baby boomers will be the most successful.

there were 110 operating plants producing 5.4 million gallons with an additional 76 plants under construction, adding another 5.6 million gallons of additional supply. Investment dollars were flowing, supported with government subsidies. Desperate for a solution to high oil prices, there was little public discussion or debate as to the merits or trade-offs of exchanging food for fuel. The biofuels industry emerged as a fair-haired child ready to serve a new strategic role in our energy policy; forgotten were the residual effects of shifting uncalculated tonnage of commodities from our food system into energy processing or the consequences of grain shortages sweeping across world markets caused by drought or weather-related circumstances.

Impact on Pricing

The creation of ethanol as an energy source has become a formidable challenge to the commercial baking industry. Demand for ethanol has caused a seismic shift in commodity pricing and output. Resources once allocated for wheat production were ploughed under for corn growing. *National Geographic* magazine reports in the October 2007 issue, "Growing Fuel, The Wrong Way. The Right Way," that the demand for corn has pushed corn prices to its highest levels in seven years and is spurring growers to plant the largest crop since World War II. Nearly 20% of this year's harvest will be diverted into ethanol. In September 2006, both spring wheat and hard winter wheat were trading in the range of \$4.49 to \$4.53 per bushel. At the close

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of market on October 15, 2007, December wheat was trading at a high of \$8.69 on the Kansas City Exchange, an increase of nearly 100% in 13 months.

Domestic demand is only one factor impacting wheat pricing and sustainability. World grain markets as well as weather can create unintended consequences as well. Both wheat quality and international demand are influencing pricing, product development strategies, and capital improvement investments. According to Jay Sjerven of *Milling & Baking News*, early crop indications from Texas, Oklahoma, and southern Kansas do not look favorable for wheat quality. "Significant quantities in the rain-pummeled areas are deemed fit only for feed." International demand is also pushing wheat to an 11-year high. French and German estimates are down as well as quality projections in England due to excessive rains. Drought conditions in Russia and Australia may also impact the U.S. export market. Accessing wheat supplies may not be unreasonable; however, negotiating contracts will be both expensive and volatile. Expecting consistent wheat quality may prove impossible.

In an industry where profits are counted in pennies, the current market conditions pose an enormous threat for many food manufacturers. The relatively homeostatic state that we have enjoyed for the past 60 years is now fundamentally threatened. The diversion of resources is drastically impacting economic markets. Hayden Wands, director of procurement, flour, at Sara Lee Corp. reported, "The world market can ill afford another harvest like this one. Any disruption in the supply chain will again lead to high prices."

What Does This Mean for Commercial Baking?

Many U.S. baking companies, until recently, were enjoying a moderate degree of growth, making investments in new product development. Collectively bakers had successfully combated the low-carb diet craze and aligned themselves with the health and wellness movement.

Growth strategies focused on creating portfolios of proactive healthy products that were aligned with the organic and/or natural movement as well as food products enriched with functional ingredients such as omega-3s and probiotics. Progress was becoming apparent. In a study published in the *Journal of Food Science*, researchers at the University of Minnesota concluded that taste was not as much of a key inhibitor to consumer acceptance of whole grains as once believed. Twenty-six of the 89 participants still preferred refined bread while 22 selected whole grains. More im-

portantly, 39 chose a mixture containing both refined and whole-grain flours.

If inflation returns as an unwelcome interloper, most of these strategies will be removed from the table. Innovation and R&D costs are derived from profit dollars. At a time when baking companies and food manufacturers are being stretched by both skyrocketing commodity prices and fluctuating transportation costs, research dollars will remain scarce, and if inflation eats away at the family pocketbook, healthy choices will be traded away. Sustainability will take a priority.

For the cereal chemist and for the research and development professional, your work is about to become more difficult. The issues will remain the same; health and wellness will continue as a principle driver of the economy, especially in light of the aging baby boomers. Sensitivity to allergens and food safety will remain paramount. Fortification, formulation, and processing will demand your time, attention, creativity, and expertise. However, your margin of error will be greatly reduced. Experimentation will be minimized. Time and resources will not permit variation. Development time will be streamlined. Marketing assumptions will not be tolerated; facts and figures will speak for themselves. Most of your efforts and the way you work will need to be redefined, research and risk minimized. The new product development process will integrate processing technology with practices of risk management to minimize expense and maximize return on investment. Scrutiny will become the new buzzword and your worst nightmare.

Opportunities

Companies and organizations that possess both vision and values will flourish. Those that can articulate, practice, and align their organizational beliefs with the

retiring baby boomers will be the most successful. Boomers will be entering a lifestyle of comfort and affluence. As recipients of inherited wealth, they will demand products that are wholesome, nutritious, anti-aging, and produced by organizations that are environmentally conscious and socially responsible. Portion sizing may become more important than shelf stability. Fresh may prevail over frozen if merchandising becomes more socially driven and is supported by evolving food trends that center on environmental responsibility and local producer support. Baked goods may well become conveyors of nutraceuticals; yet, to be successful, they will need to be formulated for quality, taste, and convenience.

Conclusion

Much remains to be seen as to the long-term implications of the food-as-fuel economy. If the sudden spike in commodity pricing were to retreat, business might return to normal with minimal disruption of activities.

However, wheat inventories can neither be replenished overnight or over a brief 90 to 180 day period. Decisions regarding next year's crop plantings are being made around the dinner tables of many farmers today. Many uncertainties remain, especially in regard to the political processes that surround agricultural and energy-related policies. One fact remains, our delicate balance of supply and demand has been inexplicitly altered and the ramifications, at least for the short-term, will have unintended consequences for both the baking industry and for the consumer.

For the cereal chemist and the product development professional, your challenge will be to do more with less, in a highly creative and efficient manner that minimizes expense and maximizes return on investment.



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