

**Technology, the Consumer and the Food Supply: The Kroger Co.
CAB CS 08.4**

Introduction

In April 2007, The Kroger Co. joined a growing list of American milk processors and marketers when it notified its Eastern U.S. raw milk suppliers that effective Feb. 1, 2008, it would only procure milk from cows not treated with recombinant bovine somatotropin (rBST), a synthetic hormone used by some dairy operators to increase milk production. By March, the retailer completed its transition nationally. All fluid milk packaged under Kroger's store brand was certified by the producer as originating from cows not injected with the synthetic rBST.

The retailer pays a negotiated premium, charged to all processors seeking certification, over the regional market price for milk. Kroger's store brand label also contains the following statement:

This milk is from cows not treated with rBST. The Food and Drug Administration has determined there is no significant difference between milk from rBST-treated cows and non-rBST treated cows.

The Kroger Co. is the nation's second largest food retailer behind Wal-Mart. Kroger operates 2,486 supermarkets in 31 U.S. states and recorded an FYE Feb. 2, 2008, sales volume of \$70.2 billion. It holds a 10 percent market share of the domestic retail grocery industry. Stores operating under the Kroger umbrella include: Kroger, Ralph's, Fred Meyer, Food 4 Less, Fry's, King Sooper, Smith's, Dillons, QFC and City Market. In addition, the company operates 42 processing plants that produce a wide range of processed foods, including dairy products. Industry sources estimate Kroger's store-

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brand milk constitutes about two-thirds of the retailer's total fluid milk sales. Since 1997, The Kroger Co. has informed its raw milk suppliers that, based on consumers' preference, it wanted milk from cows not treated with rBST. The company believed the rapid growth in organic milk sales (Exhibit 1) was largely attributable to a consumer segment that rejected this performance-enhancing technology.

By early 2007, a sufficient number of Western dairy farmers had offered certification that the milk they produced was from cows not treated with rBST. Kroger was able to procure their regional needs from such producers. By February 2008, Eastern producers had completed a similar transition.

Since there is no significant or detectable difference between milk from rBST-treated cows and non-rBST-treated cows, no test can determine whether rBST is used in production of a given milk sample. So, Kroger relies on dairy farmer certification, plus signed agreements from its milk suppliers (primarily the nation's large dairy cooperatives), to certify that the milk they supply Kroger is from cows not treated with rBST.

In announcing its decision, Kroger joined Costco, Starbucks (6,800 stores), Dean Foods (the largest U.S. marketer of consumer dairy products), Chiptole Mexican Grill, Tillamook Cheese and Kraft Foods as dairy processors and marketers that offer milk products from non-rBST-treated cows (Exhibit 2). While Kroger was not the first company to request milk from cows not treated with rBST, it is the largest.

The Economics of rBST

rBST is a synthetic hormone developed by Monsanto and marketed since 1993 under the trade name Posilac. The hormone increases the daily productivity of lactating cows by five to 10 pounds daily per cow. It is a synthetic form of a lactation-promoting hormone that cows produce naturally. To gain the productivity benefits from rBST, cows are treated bi-weekly. In 2007, approximately 17 percent of the nation's cows received such treatments. Most dairy operators limit the percentage of their herd receiving rBST based on some studies that suggest the treatments reduce a cow's productive life.

Exhibit 3 shows the increased cost, increased revenue and the net revenue change over a 305-day lactation cycle for a cow receiving rBST treatments. These metrics are calculated for three levels of increased production (5, 7.5 and 10 pounds of additional

milk per day) and at three milk prices (\$14, \$17 and \$20 per hundredweight of milk). They are also based on a feed ration cost of \$5.85 per hundred weight of milk, which is representative of feed costs in May 2008. Based on these assumptions, the economic advantage of administering rBST to dairy cows ranges from <\$18.58>/cow/lactation cycle to \$252.92/cow/lactation cycle. At higher increased yields and at higher milk prices, rBST's value to the dairy operators increases.

To offset much of the economic advantage attributable to rBST usage, processors pay a 75 cent per hundred weight premium to certified suppliers. This premium equates to \$144.11 per cow per lactation cycle for a typical dairy that produces 63 pounds of milk per cow per day.

The Kroger Decision

The Kroger Co. has a long tradition of, and commitment to, embracing technological improvements in the efficient production, processing, packaging and distribution of safe, nutritious food. The company recognizes that advancement in food science and technology has allowed humanity to move from a society of hunters and gathers, with essentially 100 percent of the population involved in food production to one of specialized labor. Today, less than two percent of the U.S. population is involved in direct food production. It also recognizes that without properly applied technology, food production, processing, packaging and distribution can be harmful.

Consistent with that tradition and commitment, Kroger sees itself responsible for managing three levels of cost in the food supply chain:

Assembly: The creation of two distinct categories of milk, one from cows treated with rBST and the other without, fragments the milk supply and complicates the procurement process, while increasing the cost of the milk assembly function. Cooperatives that collect and transport the bulk of the nation's raw milk can no longer use least cost routes since they must bypass dairies using rBST. At the assembly plants, separate infrastructure, including pipes, silos and processing equipment are necessary to avoid cross contamination. This duplicate infrastructure and segmented handling increase the cost of the assembly function.

Packaging, labeling and merchandising: Doubling the line of fluid milk products

by designating one produced from rBST-treated cows and one produced from cows free from rBST greatly increases the packaging, labeling and merchandising requirements. Retail chilled shelf space is among the most expensive space within a store. Fluid milk is typically a low-margin commodity product. Nevertheless, retailers must reserve significant space for milk because of its high volume. Adding a second line of high-volume, low-margin milk is costly, and management believes it adds little to customer choice. Furthermore, management does not expect many customers to be upset because stores do not offer milk from rBST-treated cows.

Consumer confidence and company credibility: This cost category is not easily quantifiable, but is of great concern to Kroger. Management believes it should also be of concern to the dairy industry. It is not difficult to imagine a negative advertising campaign targeting Kroger or the dairy industry that features cows on injectable “steroids” or performance-enhancing drugs. Such a campaign could seriously damage the image and reputation of the intended target. Kroger has chosen to proactively manage this risk.

The reputation risk for a company or an industry has become more acute as the world has become more transparent through the Internet and Web sites such as YouTube. Practices and technologies that can be construed or perceived as less ethical are easy targets. Management believes rBST fits this category. Ignoring the potential risk or making arguments based on scientific principles are no match for images of super-cows, hypodermic needles and performance-enhancing drugs.

Finally, management’s decision to only purchase milk from cows not treated with rBST was motivated by the desire to pre-empt the branding of such a product. This pre-emption is important since the majority of Kroger’s milk sales currently include its own store-labeled product, which is primarily produced in company-owned bottling facilities. If a milk marketer began promoting branded milk as produced from cows not treated with rBST, what would this imply about the quality of fluid milk products from cows treated with rBST? Kroger has chosen to pre-empt this potential problem.

To support its strategy of eliminating rBST from the milk supply, Kroger compensates its suppliers with premium pricing, which is currently at 75 cents per hundredweight. The short-run annual cost of this premium is estimated to exceed \$10MM. Because milk is a highly visible, highly competitive commodity product within retail food

stores, the company cannot and does not want to charge a premium for this milk. The domestic dairy industry may be a beneficiary of this decision by Kroger and other processors, marketers and retailers. Short-term Kroger suppliers will receive a price premium that largely offsets losses in productivity. Dairy operators will benefit further because of the inelasticity of milk demand a reduction in supply results in a disproportionately higher milk price that increases total industry revenue. Longer term, cow herds may be healthier. Some studies have shown productivity levels of healthy cows (not overly stressed with rBST) can reach nearly identical production levels. Concurrently, the industry avoids the risk of being tainted in consumers' eyes.

The Dairy Industry Response

As expected, reactions within the dairy industry to decisions by retailers and processors to exclude milk from rBST-treated cows are mixed. Some producers embrace the decision. They accept the argument that the technology subjects the industry to reputation risk and recognize that the probable reduction in supply may benefit the industry in the short term. Others are more critical, including *Dairy Today* editor Jim Dickrell who described the move to rBST-free dairy cases as “a ripoff of both producers and consumers (Exhibit 4).” Drs. John Fetrow and Terry Etherton present a scientific argument that milk produced using rBST is just as nutritious, just as healthy, just as environmentally friendly and is produced from cows just as “happy” as conventional milk (Exhibit 5).

Both the Dickrell and the Fetrow-Etherton arguments rely on the assumption that marketers and retailers will charge consumers a higher price for milk from rBST-free cows. This assumption is plausible only if (a) the nation's milk supply remains segmented between dairies using and not using rBST, and (b) a marketer exploits milk from non-rBST-treated cows as somehow better and worth a higher price. So far, there is no evidence that firms like Kroger, Supervalu, Safeway or Wal-Mart are charging a premium for milk since their transition to certification.

Not surprisingly, labeling milk from cows not treated with rBST has become an industry battleground. The Food and Drug Administration (FDA) has responsibility for assuring that food products are honestly, accurately and informatively represented to the public. It has stated that food manufacturers who do not use milk from cows treated with rBST may voluntarily inform consumers of this fact on their product labels or labeling, provided that the statements are truthful and not misleading.

Before the 1993 approval of rBST, the FDA determined that the recombinant, or genetically engineered form of BST, is virtually identical to a cow's natural somatotropin. During that rBST approval process, the FDA concluded that there is no significant difference between milk from treated and untreated cows. For that reason, the FDA also concluded it does not have the authority to require special labeling for milk and dairy products from rBST-treated cows and that producers have no basis for claiming that milk from cows not treated with rBST is safer than milk from rBST-treated cows. That FDA guidance left it open to the states to properly regulate rBST-labeling claims, given the state's traditional role in overseeing milk production.

St. Louis-based Monsanto, the marketer of Posilac, has been the leading proponent of banning the "hormone-free" label on milk at the state level. Monsanto argues that the label implies a level of safety not supported by science. The company is supportive of the American Farmers for the Advancement and Conservation of Technology (AFACT), a group that advocates the passage of laws to ban or restrict labels that indicate milk comes from untreated cows.

AFACT's first attempt to achieve such a ban in Pennsylvania was denied. Under a January 2008 directive from the Pennsylvania Department of Agriculture, the state allows such labels as long as "they also state clearly that there is no proof that rBST-free milk is any healthier or different than milk from cows that were administered rBST." Exhibit 6 describes the efforts to ban rBST labels, actively promoted by Monsanto, in Missouri and Kansas.

The grower community is also split on the issue. Some oppose legislation limiting their ability to tell the consumer that no synthetic hormones were used in producing their milk. Others support such a ban. Kroger opposes such legislation. The retailer is particularly concerned that state-by-state regulation of the milk supply potentially could result in 50 different labeling requirements for milk.

The Bigger Picture

Kroger management anticipates that its decision regarding its milk supply will contribute to the elimination of rBST technology from milk production. The company states that its decision was made without outside pressure from advocacy groups. Rather, the decision was made as a proactive step to avert potential negative publicity targeting

Kroger and to contribute to a more rational milk supply system.

The decision raises important questions on what food production technologies are acceptable, how decisions on acceptability should be made and who should make these decisions. In a capitalistic system, these decisions are generally left to the consumer with input from scientists to determine the safety of the technology, lawmakers to define how they are to be used safely and regulators to enforce the rules.

The ethics of applying these technologies only recently have been raised as major issues. (Is it right or wrong to inject cows with performance-enhancing hormones? Is it right or wrong to confine pigs and chickens in close quarters? Is it right or wrong to clone animals?) Currently, there is no well-organized forum for ethical considerations when new technologies are developed, applied and regulated. Ethical considerations, therefore, are often left to public advocacy groups. Thus, the food industry operates somewhat in limbo as it develops technologies; gains scientific, legal and regulatory support for their application; and occasionally meets ethical hurdles missed during the development, testing and approval process.

The food industry faces several such ethical hurdles involving its new technologies. Genetic engineering has been strongly opposed by Greenpeace, the European Union and Japan because of the questionable ethics of combining genes from unrelated organisms and the potential environmental impact. Irradiation as a food preservation technology has been delayed on the basis of potential health risks unsubstantiated by science. Plastic bottles have been banned in some American cities based on tenuous health concerns and environmental claims. Confined animal feeding has attracted a group of opponents concerned with the animal well-being. Animal cloning is under close scrutiny by some groups concerned with the ethics of this technology. Nanotechnology also has a growing list of opponents based on the notion that a technology's absolute safety should be proven before adoption. This is the so-called "precautionary principle." (See Appendix A for a brief discussion of the Precautionary Principle.) Unfortunately, science is ill equipped to fully address such concerns.

A Diverse Consumer Base

Today's consumers are not homogeneous. Instead, they are people with widely divergent views and perspectives. The diversity of opinions and perspectives on the food

supply today is extraordinary, at least partly because the cost of food has dropped below 10 percent of the average American's disposable income. Thus, food price considerations have become less important than other issues, not withstanding recent food price inflation.

The range of perspectives is broad. A growing sector of the population embraces some degree of distrust regarding the conventional food supply — its safety, its rules and its regulatory agencies. This group is sometimes characterized as having limited faith in science, a general distrust of big business and a belief that technology is too often a problem rather than a solution. It may be characterized further as valuing feelings at least as much as science, looking for a greater “connectedness” to the food supply, ascribing value to small operations versus large agribusinesses, and identifying natural, organic and locally produced as more wholesome food alternatives. Furthermore, this range of perspectives often includes concern for ethical considerations, including the impact on the environment and a concern for animal welfare that may be excluded from the decision process when new technologies are adopted. Some of the above perspectives increasingly represent mainstream consumer views.

Another range of perspectives tends to believe in science, technology and innovation. This group maintains a general trust in the safety of conventional foods based on their faith in the market system and the regulatory agencies entrusted to enforce the rules. It believes rules should be based on science and that technology applied to food production, processing and distribution has developed a more diverse, safer, more nutritious and more affordable food supply. Given its trust of the food supply system, it is less concerned about detachment from the source of the food. Furthermore, this group can be somewhat skeptical of today's environmentalism, particularly when it perceives environmentalism as deviating from sound science.

The Kroger Co. serves customers with the entire range of diverse viewpoints. Its desire is to encourage all parties to recognize the legitimacy of each perspective in reaching sound decisions on the adoption of science and technology in the food supply chain. While there is no scientific proof of any difference between milk from rBST-treated and non-treated cows, the company was forced to address these questions: What is the ethical difference between performance-enhancing drug injections in animals (currently legal) and humans (currently illegal)? What is the benefit of this technology to the consumer or the environment? Kroger concluded that there is no difference and

the consumer gains little benefit. In contrast, other technologies, such as genetically enhancing grains, offer significant potential benefits to the consumer and the environment. Management believes Kroger's position on rBST provides an opportunity to bridge the gaps among these diverse perspectives.

But, where are the lines of demarcation that define acceptable versus unacceptable products and technologies? Exhibit 7 is a Seattle Times article reporting PCC Natural Market's decision to prohibit its suppliers from using cloned animal products in its foods. The specialty retailer had only recently banned the use of all high-fructose corn syrup in the eight-store chain and now requires all suppliers to identify genetically modified organisms on their labels.

Conclusion

America's long-term competitiveness in agriculture and agribusiness is dependent on its ability to develop and apply technologies to (a) continually differentiate value-added products from its competitors, and (b) continually increase its productive efficiency (i.e., lower its production cost per unit). This dependence on technological innovation increases the importance that scarce research dollars be invested wisely. It emphasizes the importance of an effective, efficient regulatory process defining the use of these technologies to encourage the desired business behavior without burdening the industry with unnecessary, costly and sometimes counter-productive restrictions. The importance of wisely investing resources and precisely targeting regulations rises as American industries increasingly compete in the global marketplace.

At the same time, the American consumers' perspective on its food supply and the technologies used to produce, process and distribute it are becoming increasingly diverse. A growing population sector is concerned with the ethics of the food supply system, including its effect on the environment, animal welfare, small farmers and local production. Historically, American society has relied on science to provide the objective information upon which to base laws and regulations defining the legal application of these technologies. Science, however, is not well-suited to provide answers to ethical questions. Nor is it capable of addressing the absolutes implicit in the precautionary principle. Thus, society is left with two major questions about how new food technologies should be adopted: (1) Who should decide? (2) On what should these decisions be based?

Discussion Questions

1. Is Kroger's rBST decision right for Kroger? for the dairy industry? for the country?
2. Is the Kroger decision and rationale on rBST useful in determining which technologies to accept and which to reject in the food industry? If so, how is it useful? If not, why not?
3. How should ethics and the precautionary principle be factored into decisions regarding existing products, such as plastic bottles, high-fructose corn syrup or trans-fats and the adoption of new technologies? Who should decide?

Exhibit 1
Grown in U.S. Organic Fluid Milk Sales 2006–08

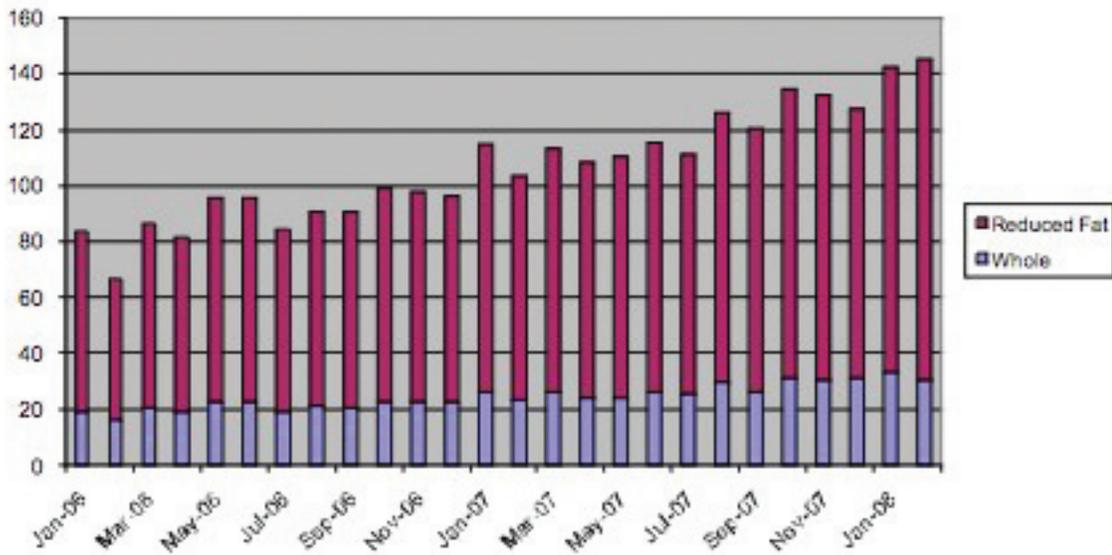


Exhibit 2

Kraft shakes up dairy market

By David Sterrett

Chicago Business, Jan. 12, 2008

Food giant offers line of cheese free of controversial hormone.

Kraft Foods Inc. plans to offer cheese free of a controversial growth hormone, a strategic move that pressures competitors to follow.

Northfield-based Kraft says it will start selling a line of cheese made with milk from cows free of rBST by June. Some consumer groups, citing scientific studies, say the production-boosting hormone can cause cancer, despite assurances from U.S. food regulators that it is safe.

Kraft aims to capitalize on consumer worries about food safety with a specialty product that will fetch a higher price than its mass-market cheeses. The new cheese reflects CEO Irene Rosenfeld's plan to rekindle growth with premium brands.

Such a move by the nation's biggest food company also could force rivals to offer products free of artificial hormones.

"This is a big development and shows that food companies acknowledge consumers are taking a much more active interest in what is in their food," says Bill Bishop, chairman of Barrington-based consultancy Willard Bishop. "This used to be a niche interest, but as it becomes more mainstream the big food companies . . . have to respond or they will find themselves in an unfortunate position."

Other companies already have responded to those concerns. Dean Foods Co., the largest U.S. dairy company, offers a line of rBST-free products, while grocery chain Kroger Co. bans the artificial hormone from its name-brand milk. Starbucks Corp. last year became the highest-profile company to act, instituting a ban in its 6,793 company-operated cafes.

Chipotle Mexican Grill Inc., spun off from McDonald's Corp. in 2006, also an-

nounced last year it was banning rBST. In a statement, Oak Brook-based McDonald's says, "We continue to look to the (U.S. regulators) to provide further guidance, as well as engage our suppliers on this topic."

The FDA approved the use of rBST, or recombinant bovine somatotropin, in dairy cows in 1993. The agency reaffirmed its ruling that there was no health or safety threat to humans in 2000. All cows have BST, a protein hormone that stimulates milk production, and rBST is a synthetic version used to increase milk production.

About 17% of U.S. dairy cows receive the artificial hormone, according to a 2007 government survey.

Opponents of rBST say it increases infections in cows and stimulates the production of another hormone in the animals linked to cancer in humans.

rBST, produced by St. Louis-based Monsanto Co., is sold under the brand Posilac. A Monsanto spokeswoman refused to release financial information about the product, but Chief Financial Officer Terrell Crews said during an Oct. 10 analysts' conference call that the company expects to see declines in Posilac demand, because "we've seen some pressure in the dairy business on that product."

For big food companies like Kraft, changing processes can add to manufacturing expenses, but those added costs can be passed on to consumers. And given their higher retail prices, natural and organic lines typically are more profitable, Mr. Bishop says.

KRAFT NOT ALONE

Kraft began talking with suppliers in November about using milk free of synthetic hormones for its "2% Milk" cheese lines, a spokesman says. Kraft chose the 2% brand because it's a premium line with several dozen products.

"We understand this is important to some people, and this is what is really driving the decision for us," he says.

Kraft will continue to use milk that is not certified rBST-free in the majority of its cheese products.

Still, the company's shift has the potential to reverberate throughout the dairy industry, resulting in more rBST-free cheese, ice cream and butter in general, says Catherine Donnelly, professor of nutrition and food science at the University of Vermont in Burlington.

Several small processors, including Tillamook County Creamery Assn. In Oregon, began offering rBST-free cheese several years ago, but the decision by Kraft, the maker of Velveeta and Cheez Whiz, validates it as a mass-market move, she says.

"Consumers are speaking out with their pocketbooks, and it's a national trend that people care more about where their food comes from and how it's produced," Ms. Donnelly says.

'SMOKE AND MIRRORS'

Kraft and rivals assured customers for years that rBST-containing products were safe because they were approved by the FDA.

But "now consumers don't trust anything," she says.

Some in the dairy industry are skeptical that any health threat exists.

Terry Etherton, head of the Department of Dairy and Animal Science at Penn State University in State College, Pa., says the growth of rBST-free products is "part of a smoke-and-mirrors campaign."

He says supermarkets usually charge about 20% more for rBST-free milk, while those retailers and dairy processors don't see similar cost increases.

"We do expect an additional premium (in the price) to reflect the cost of ingredients and adjustments to the supply chain to accommodate the milk," a Kraft spokesman says. He declines to discuss any specific prices or costs involved in the change.

Pennsylvania is debating whether processors should be allowed to label a product rBST-free.

Monsanto and other opponents to such labeling say there is no way to accurately certify something as free of rBST because milk with or without the hormone is chemically the same.

”Unfortunately, consumers are being misled to think one carton of milk is safer or more healthy, when in fact all milk is the same,” a Monsanto spokeswoman says. “People are paying more for milk that is the same.”

Exhibit 3

Economic Benefit to Dairymen of Using rBST per Cow per Lactation Cycle

Milk Price/cwt	During 305 day Lactation	@ 5 lbs/day increase/cow	@ 7.5 lbs/day increase/cow	@10 lbs/day increase/cow
@ \$14	Added Revenue	\$213.50	\$320.25	\$427.00
	Added Expense	232.08	293.08	354.08
	Net Improvement	<18.58>	27.17	72.92
@ \$16	Added Revenue	259.25	388.88	518.50
	Added Expense	232.08	293.08	354.08
	Net Improvement	27.17	95.80	164.42
@ \$18	Added Revenue	305.00	457.50	610.00
	Added Expense	232.08	293.08	354.08
	Net Improvement	\$72.92	\$164.42	\$255.92

Assumptions:

- Posilac cost = \$6.60/unit (1)
- Labor cost to inject: \$0.28/injection (1)
- Feed cost = \$0.08/lb of milk produced (2)
- 16 injections per 305 day lactation cycle

- (1) Monsanto's Website
- (2) Wells Fargo Bank data as of May 2008

Exhibit 4

The BST ripoff

March 30, 2008

At various meetings this winter, dairy producers have asked me what I thought of processors forcing producers to stop using BST.

Never one to be shy of an opinion, especially when asked, I've been blunt: The move to BST-free dairy cases is a ripoff of both producers and consumers.

Even though Dairy Today has carried BST ads over the years, I really don't care if producers use BST or not. Whether you use it or not should be up to you.

BST has been a safe, legal, fully-labeled production-enhancing tool for the past 14 years. As the label says, milk from cows treated with BST is not significantly different from milk from untreated cows.

If the vast majority of consumers don't want BST-produced milk, you'd think after 14 years they'd let us know.

The ripoff comes when processors tell producers they can't use it, and then give them token compensation to make up for production losses. Here in little Monticello, MN (population 10,000), big box grocery chains are charging anywhere from 80¢ to \$1.40/gallon more for BST-free milk.

That translates into an additional \$9 to \$16/cwt in increased gross revenues. Even if dairy producers and their co-ops are getting \$1/cwt premiums, that still leaves \$8 to \$15 for the processors and retailers to pocket.

In my vocabulary, that's the definition of a ripoff.

If this move to BST-free would be enhancing milk sales because of consumer fears, one could understand why it would be necessary. But it's not.

"We are not seeing enhanced fluid milk sales," says Alan Pierson, Land O'Lakes Vice

President of Dairy Foods—Industrial Division. BST-free milk, he says, is simply a way to extract additional money from fluid sales.

Here's the goofy part: Fluid sales were actually climbing over the past few years, thanks in part to better packaging and sales through fast food giants like McDonalds and Wendy's. That all stopped abruptly in 2007.

Processors blame Class I prices in the plus \$20 range as the reason for the decline. But if you add another \$1.40/gal on top of that for BST-free, is it any wonder consumption stagnates?

At least here in the Midwest, consumers still have options. In some parts of the country, it's BST-free or nothing. Now that's consumer choice, isn't it?

Scaring consumers, and then charging them 45% more to offer "tech-free" food, is one heck of a way to run a supermarket. It should surprise no one why they're buying less.

By Jim Dickrell is the editor of *Dairy Today*. You can reach him at jdickrell@farmjournal.com.

Exhibit 5

Milk: Let the buyer (the environment, the cow) beware

April 7, 2008

8:28:32 a.m.

Posted by Editor

By Drs. John Fetrow and Terry Etherton

Milk is probably the most pure, wholesome, safe, highly regulated, inspected, and most carefully handled food that any of us consume. Dairy products provide a wealth of nutrients, including protein, energy, vitamins and minerals. Even the butterfat in milk contains substances that may reduce cancer risks and help prevent obesity.

Last year, consumers in the U.S. spent \$90 billion on dairy products. Organic fluid milk was only 2% of the fluid milk market, and was priced significantly higher than conventional milk. Organic and “rbST-free” milk are routinely advertised as being somehow healthier, less risky, more environmentally friendly and produced by “happier” cows than conventional milk. Consumers are led to believe that organic milk is better, or that “rbST-free” milk is safer. The truth is quite different, but behind these claims are very powerful corporate interests that know that they can sell the same product at a higher price if they can create doubt or spread fear about conventional milk.

Recently, over 200 different samples of retail milk of all types were purchased in stores from across the nation. In this study, conventional milk, “rbST-free” milk and organic milk were tested by audited procedures. Within milk fat categories (skim, 1%, 2%, etc.) all samples had the same nutrient content. All had the same levels of the hormones estrogen, IGF-1, and all forms of bST. None contained antibiotics.

It is easy to scare people by using the word “hormone,” but all milk contains hormones and always has. Milk contains progesterone and estrogen, which are steroid hormones. The levels of these hormones are the same in whatever milk you drink, and their presence poses no health risk to humans. Vitamin D is a steroid hormone and is added to milk.

Milk also contains protein hormones, such as bovine somatotropin (also called bST or

bovine growth hormone, bGH) and IGF-1. Both are present in tiny quantities in milk, are digested just like any other protein you eat (steak or tofu) and have no effect in people when eaten. Specifically, the level of bST in milk we consume is the same from all types of dairies, whether they use rbST to increase production in their cows or not.

The anti-bST campaign is particularly deceptive. BST has been used in cows for more than a decade, and there has been no indication of any impact of its use on the milk produced or the health of people who consume the milk. Every major credible health organization around the world that has looked at the issues of bST and food safety, including the American Medical Assn., American Pediatrics Assn., Health Canada, European Commission, and the Food & Drug Administration, has agreed that milk from rbST-treated cows is the same as any other milk. The vague and unsupportable assertions about “cancer” or “antibiotic resistance” (bST is not an antibiotic) are simply not scientifically credible. Oft-repeated smear campaigns can, however, gradually shape the public’s perceptions and major food corporations understand the power of fear in selling food.

Some of the roots of this disinformation effort about milk reach into the board rooms of major corporate players in the food industry. Huge corporate interests can increase their profits if people fear conventional milk. They can make more money selling “rbST-free” milk at \$4/gal. Or organic milk at \$6/gal. (or more) than by selling conventional milk at \$3/gal., and the majority of that profit differential stays in the corporation’s hands. It doesn’t matter that the milk inside the carton is the same, organic, “rbST-free”, or not.

Dean Foods, for example, is the nation’s largest fluid milk marketer, and had over \$10 billion in sales last year. Dean Foods is the parent company for Horizon Organic Milk and White Wave soy “milk”. Whole Foods, the nation’s largest organic grocery corporation, earned \$5 billion last year. Both of these corporations make large donations to “public interest” advocacy groups, such as the Organic Center. Probably not coincidentally, the president and chief operating officer of Whole Foods and the General Counsel of Dean Foods sit on the board of directors of the Organic Center. The Organic Center, under the guise of serving the public, spreads fear and disinformation about conventional milk and other products of conventional agriculture, and then neatly refers visitors from its web site to other web resources supporting Horizon Organic and Whole Foods.

Support of organic or rbST-free milk products may stem from concern about the environment, but the science does not support those positions. Cows given rbST produce more milk. In doing so, their efficiency of production increases and they eat less feed for each gallon of milk they produce. In fact, it takes about 6 to 8% less land to produce milk from cows given rbST. Less land plowed, less fertilizer, less of all of the inputs that go into producing the dairy products consumers enjoy. These cows release less greenhouse gas into the environment per gallon of milk produced, reducing their impact on global warming. This means there is less impact on the environment to produce our nation's milk. In fact, a recently released British government study of organic farming found that in many cases, organic farming was less environmentally friendly than conventional agricultural practices. This was particularly true of milk production. The report concludes, in part, that organic milk requires 80% more land per gallon of milk produced, generates 20% more carbon dioxide (greenhouse gas), and produces almost double the amount of other by-products that can lead to acidification of soil and pollution of water.

And what of the claims that organic farms use no antibiotics? Avoiding antibiotics might sound like a good idea, unless you happen to be a sick cow. Conventional farms use antibiotics on a milking cow only if the cow is sick with a serious and treatable bacterial disease. All dairymen avoid using antibiotics when possible to avoid having to throw the cow's milk away while the cow is on treatment. Milk from treated cows is discarded both during and for a prescribed number of days after treatment to assure that antibiotics do not get into the milk supply. Every shipment of milk from every dairy is tested for major antibiotics before that milk is allowed into the human food system. The milk you buy at the store does not have antibiotics in it, regardless of the type of dairy it came from. Labels that imply otherwise are deceptive and are used only to create mistrust among consumers and to sell more expensive alternatives.

Are cows on organic farms "happier" or healthier? If a cow on an organic dairy needs to be treated for a bacterial disease (infection in her udder, infection in her uterus after calving, pneumonia, etc.), the organic rules say she must be treated and that she can never again be used to produce organic milk. A new dairy cow costs about \$2,000. Treating her properly when she is sick on an organic dairy is a major loss. The truth is that some sick cows on organic dairies are left to fend for themselves without treatment, or treatment is delayed until such a time that its effectiveness becomes questionable. Sick cows on organic dairies may be treated with unproven, untested, and ques-

tionably effective products with unknown effects on the milk the cow produces. You have to ask yourself just how humane it is to withhold medically proven therapy from a sick cow so that you can continue to sell higher-priced milk to the organic market. Some organic dairies have skirted the high cost of replacing cows that require antibiotics by treating the cow with antibiotics, withholding her milk from distribution, and hoping not to get caught. The truth is that if the “organic” farmer withholds the milk long enough (just like conventional farmers do), there is no way to tell if the organic farmer has used antibiotics, just as there is no way to tell from the milk if a dairy uses rbST or not. The milk is all the same.

Many who pay high prices for organic or rbST-free milk do so out of a combination of manipulated fear and/or a genuine concern for the safety of milk, protection of the environment and welfare of the cow. At best, they have been misinformed. All milk is what it always has been: a wholesome, safe, nutritious product produced by family-owned dairies that care about their cows, their land and the quality of the product they sell. For those who purchase expensive dairy products, please remember that the premium price paid does not change what is in the package; only the prices are different.

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These comments by Fetrow and Etherton have the support of more than 65 additional academic scientists in animal science and veterinary medicine who urge consumers to make informed science-based decisions when purchasing milk.

Exhibit 6

Battle over milk labeling hits Midwest

Missouri, Kansas lawmakers might ban 'hormone-free.'

March 26, 2008

ColumbiaTribune.com

ST. JOSEPH (AP) - Missouri and Kansas might be the newest battlegrounds in a national fight between dairies that want to tell consumers their milk is hormone-free and the hormone manufacturers, who worry such labeling will hurt sales.

Lawmakers in both states are considering legislation that would limit what dairies could print on their bottles and cartons.

The Missouri bills would ban any mention of hormones, and the Kansas legislation would require the claims be printed alongside federal language denying any difference in milk coming from hormone-treated animals.

The bills, which mirror legislation passed and debated in other states, rub some dairy owners the wrong way.

"I should be able to tell my customers that we do not treat our cows," said Leroy Shatto, whose Osborn-based Shatto Milk Co. prints "No growth hormones used" on the front of its glass milk bottles. "A lot of my customers - probably most of my customers - want milk that doesn't have anything extra."

The Food and Drug Administration has put out language saying, "No significant difference has been shown between milk derived from rBGH-treated and non rBGH-treated cows," referring to a type of hormone some dairies use to increase milk production.

Some customers, however, don't trust the FDA and want to avoid milk from hormone-treated animals.

"It's my choice, whether it's healthier or not," said shopper Karen Schaefer as she

grabbed two bottles of Shatto milk. “If they don’t use the hormone, they should be allowed to say that.”

Shatto prints the FDA language denying any difference from hormone treatments on the back of his bottles, but backers of the bills say consumers might miss the message.

“That’s what scares the devil out of me,” Shatto said. “If they made me get rid of my bottles and start over, it would probably put me out of business.”

Much of the push against “hormone-free” labeling is coming from St. Louis-based Monsanto Co., whose recombinant bovine growth hormone is the country’s largest-selling dairy pharmaceutical. It has been approved for use in the United States since 1994, although safety concerns have spurred an increase in hormone-free product sales.

The hormone is banned in the European Union, Canada, Australia and Japan, largely out of concern that it might be harmful to herd health.

Monsanto notes that no clinical studies have shown any safety problems from the hormone. But by allowing dairies to advertise themselves as hormone-free, Monsanto says, they are misleading consumers into thinking milk without those labels is less healthy or even dangerous.

So far, efforts to ban hormone-free labeling have stalled.

Pennsylvania, the nation’s fifth-largest dairy state, banned the hormone-free labeling in October but later rescinded the ban.

Last month, an Indiana lawmaker pulled legislation that would have made it illegal to label dairy products as free of artificial growth hormone because no test can determine if the hormone was used.

Ohio has held hearings on the issue, and the state’s agriculture director is expected to issue a decision early this year on dairy labeling.

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Exhibit 7

PCC says no to cloned animal products

By Melissa Allison

Seattle Times business reporter

PCC Natural Markets is prohibiting suppliers from using cloned animal products in their food. It also wants them to disclose where ingredients are from and what they mean by terms such as “natural flavors.”

These moves come months after the Seattle chain eliminated high-fructose corn syrup from its eight stores and began identifying the countries of origin for its meat, seafood, peanuts and fresh and frozen produce.

Although the 2002 Farm Bill called for mandatory country-of-origin labeling for those products, the law has not been implemented and is being reworked as part of the 2007 Farm Bill still being considered in Congress.

“The failure of our regulatory agencies to mandate full disclosure of food ingredients makes it incumbent on leaders in the natural-foods industry to step forward and provide what our consumers want,” PCC Chief Executive Tracy Wolpert said in a news release Tuesday.

PCC will continue selling food from China, unlike Trader Joe’s, which said last year it would phase out single-ingredient food items from mainland China by April 1 because of customer concerns.

Much food that is certified as organic by the U.S. Department of Agriculture comes from other countries, including China.

At PCC, frozen vegetables including edamame in the shell and asparagus are from China, as are some bulk beans and buckwheat.

“Organic producers in the U.S. cannot meet all the demands for organic produce. There has been a question in the industry as to whether organic standards are being applied diligently in China. Our position is that if it’s certified organic, we accept that

the certification requirements have been met,” said PCC spokeswoman Diana Crane.

It is difficult to estimate how much organic food comes from other countries. The U.S. does not track that data, said Organic Trade Association spokeswoman Barbara Haumann.

PCC sent letters to suppliers this week asking them to sign an agreement verifying that no products sold to the chain contain ingredients from cloned animals or their offspring.

The Food and Drug Administration ruled last month that such products are safe for consumption. PCC disagrees with the decision, saying the technology behind animal cloning remains controversial.

PCC also wants suppliers to disclose more information on food labels, it said in another letter.

With no deadlines or penalties, the company suggested that manufacturers add country-of-origin information to ingredient panels, stop using terms such as “natural flavors” and “proprietary blend” on those panels and identify genetically modified organisms (GMOs) on labels.

The chain also asked that expiration dates be clearly printed on packages and that packaging be made from sustainable materials.

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Appendix A

The Precautionary Principle

An Excerpt from *Global Warming, GMOs, Cow Emissions, and Wal-Mart: Science, Myth, and Public Policy*

By Ken McCorkle, 2006

One of the outgrowths of post-modernism is a skepticism regarding the ability of science and logic to solve many of today's complex problems. In fact, many believe that uncontrolled science and links to economic results may be the origin of some of these problems. This line of thinking has led to the widespread acceptance of the Precautionary Principle. This principle, which emerged in European environmental policies in the late 1970s, was the subject of an international conference held in Racine, Wisconsin on January 25-27, 1998. Scientists, government officials, lawyers, environmentalists, and labor assembled at this conference to define and discuss the Precautionary Principle. The group, known as Wingspread, issued its consensual statement that can be summarized into the following four terms:

1. People have a duty to take anticipatory action to prevent harm.
2. The burden of proof of harmlessness of a new technology, process, activity, or chemical lies with the proponents, not with the general public.
3. Before using a new technology, process, or chemical, or starting a new activity, people have an obligation to examine a full range of alternatives including the alternative of doing nothing.
4. Decisions applying the precautionary principle must be open, informed, and democratic and must include affected parties.

Few policies for risk management have created as much controversy as this principle. The source of the controversy is twofold:

- (1) The principle provides a relatively easy excuse to impose trade restrictions; for example, European decisions to ban American and Canadian beef because of the use of growth hormones and to delay approving genetically engineered crops for sale in European markets were couched in "precautionary" verbiage.
- (2) Its interpretation is subject to wide variability. D. Vanderzwaag reported in the *Journal of Environmental Law Practices* (1999) that his analysis identified 14 different interpretations of the principle in various treaties and declarations. In its strictest interpretation, the principle calls for absolute proof of safety before

allowing new technologies to be adopted. For example, the United Nations' World Charter for Nature (1982) states: "where potential adverse effects are not fully understood, the activities should not proceed." If interpreted literally and applied strictly, no new technology could meet this requirement. Other interpretations, while still highly restrictive, allow for cost-benefit analysis and discretionary judgment. The United Nations' Rio Declaration (1992) states that lack of "full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." Another interpretation deals with decision making in the absence of scientific evidence: A 1990 declaration on protection of the North Sea calls for action to be taken even if there is no scientific evidence to prove a causal link between emissions of wastes into ocean waters and effects. Still other treaties including the Treaty on European Union merely refers to the principle, without defining it. As a result, the European Court of Justice remains divided about the meaning and applicability of the principle despite a growing body of court cases and legal decisions.

Many scientists question how the precautionary principle can be reconciled with science-based risk assessment. If, under the precautionary principle, the standard for applying a new technology is absolute safety, then it follows that science must prove the absence of any deleterious effects. The question arises how to reconcile the principle with the weight of evidence and analysis typically used by scientists. How, for example, can scientific experiments ever be designed to prove something doesn't exist, that some new product or technology is absolutely safe? While various approaches to reconciling these two have been proposed, none has gained wide scale support.