

NEGATIVE LABELING OF GENETICALLY MODIFIED ORGANISMS (GMOs): THE EXPERIENCE OF RBST

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Voluntary negative labeling may provide a solution to the current controversy over labeling of Genetically Modified Organisms (GMOs) in agriculture. The U.S. experience in the dairy sector with milk from cows treated with recombinant bovine somatotropin offers an example of how a voluntary negative labeling strategy evolved.

Key words: genetically modified organisms; GMOs; labeling, rBST.

"Consumers have a right to choose whether to eat genetically modified foods or not."

Rockefeller Foundation Statement (cited in Kilman, 1999)

In response to the growing prevalence of genetically modified organisms (GMOs) in processed foods, consumer advocates, and a wide range of environmental and food safety groups, have mounted an active campaign against GMO products, which they call "Frankenstein Foods." Food distribution companies around the world, including Sainsbury's, Marks and Spencer, Pryca, Carrefour, Archer Daniels Midland, and Nestlé, have begun responding to these concerns calling for segregation of GMOs from traditional crops and indicating their willingness to avoid GMO products in their food marketing efforts.

Although agricultural exporters clearly have important commercial interests in maintaining access to markets for agricultural exports, including GMO products, the stakes for the trading system are larger than the agriculture and food interests of agricultural exporters such as the U.S., Canada, Brazil, Australia, and Argentina. By leading to potential disruption of trade flows in agriculture these conflicts could compromise global food security at a time when growing population and food imbalances are seen as increasingly likely in the next century. Moreover, the GMO controversy

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resonates well beyond agriculture, helping to mobilize and align consumer, environmental and health advocates in opposition to further trade liberalization. For these reasons, this current conflict over GMOs threatens to disrupt agricultural markets and the global trading system.

The purpose of this brief article is to assess possible GMO labeling policies to address concerns over segregation, using the case of recombinant bovine somatotropin (rBST) labeling in the U.S. dairy sector as an illustrative example. The article argues that one possible solution is the use of labels indicating no GMO content for food products and seed.

Food Labeling Options

Numerous parties to the debate over GMOs have proposed labeling food products containing genetically modified material and segregating seeds or GMO products in supply streams. Labeling has particular appeal as a market based alternative to those who believe that consumers, once informed of the presence of GMOs in food or seed, will choose to purchase (or not to purchase) them based on this information. Labels might, in fact, result wholly from voluntary decisions by firms to offer such information to consumers. However, for a variety of reasons, notably those of uniformity and coordination across both private firms and national regulatory regimes, it is probable that some international standards or norms will be necessary.

A labeling strategy could either highlight GMO content or identify those products that do not contain GMOs. The first type of labeling, positive labeling, would identify the presence of GMOs in a product and would involve the statement: "This product may contain (or contains) GMOs."

Given the extent to which GMOs have already entered the food and fiber chain, such a label would convey relatively little information. In contrast to a cigarette health warning labels, a simple indication of GMO content implies risk while inaccurately reflecting health consequences of consuming GMO products. Moreover, such a label does not clearly indicate how much GMO content is implied or whether the GMOs in question are specifically identified. As Kinsey (1999) noted in a recent survey of GMO issues, positive labels are "almost as misleading as having no label at all." The same would hold true for seed products.

Nonetheless, some advocates of positive labels persist in the view that they would help steer consumers (or, in the case of seed, farmers) away from GMO products. Since this would now include the vast majority of processed food products (and a large share of the seed market) their motivation for positive labels may lie in a desire to reduce consumption of, and trade in, these products and, thus, the revenues of their manufacturers, large or small. In addition, it is possible that the threat of such a label, or the label itself, would lead investments in research and marketing into GMOs and their products to wither and eventually to die. Thus, positive labels could impose costs on the agricultural industry without providing compensating benefits to consumers.

In contrast, the second type of label, a negative label, would read: "This product (or seed) contains no GMOs." This type of labeling strategy would have advantages for both producers and consumers. There is already evidence that such markets are perceived to be worth the effort to segregate product and processing methods. Apart from the examples of large food companies noted above, several less visible instances suggest the emergence of market opportunity for products carrying a no-GMO identity. Natural Products Incorporated, a Grinnell, Iowa company that processes unmodified soybeans (sold to Ben and Jerry's Homemade Incorporated for use in its ice cream products), expects sales to triple in 2000 to about \$10 million. The Hain Food Group of Uniondale, New York, is labeling its organic snacks as non-biotech. American Growers Foods, of Embarrass, Minnesota promotes its foods as chemical and GMO free, independently testing and certifying varieties of breakfast cereals, snack foods, and baked goods as organically grown and containing no GMOs (American Growers Foods, 1998). For the consumer, negative

labels would avoid the potential information biases of the positive label system.

The U.S. Experience With rBST And Dairy Foods

The U.S. experience of rBST and milk provides useful insight into the process of establishing a set of negative labels. Recombinant Bovine Somatotropin (rBST) is a genetically-engineered version of a naturally-occurring growth hormone (BST or BGH) in dairy cattle. Beginning in 1994, Monsanto began to market Posilac, an rBST produced through genetic engineering, and sold as an injection kit to farmers to increase milk production (see Dobson, 1996). While many milk producers adopted and still use the product, consumer groups and some farmers objected to its use, arguing that it posed risks (in part to humans, but mainly to the lactating cattle). These groups demanded that a system of labels establish a separate product stream for milk from cows that had not been treated with the rBST injections.

At first, the dairy industry demurred, asserting that the labels were unnecessary because BST was safe and had been subject to scientific review by the U.S. Food and Drug Administration and other scientific panels. An example of such initial reluctance to adopt labels was the response of the Arden Hills, Minnesota-based Land O'Lakes, a cooperatively owned and managed Upper Midwest fluid milk processor and food company. However, within a few months, Land O'Lakes elected to adopt a negative label for its "original" fluid milk, which states, "Milk from cows not treated with rBST/rBGH." In addition, the label reads, "The federal government has determined that rBST/rBGH milk is safe for humans and cows, and that no significant difference has been shown between milk from rBST/rBGH treated or non-rBST/rBGH treated cows." The sales of this product accounted in 1999 for 18 percent of Land O'Lakes total fluid milk sales, a substantial niche. Overall, the rBST controversy seems to have affected aggregate milk sales in the U.S. little, if at all (Aldrich & Blisard, 1998).

In order to forestall potential economic barriers to inter-state trade created by the promulgation of diverse voluntary labeling strategies by milk processors, the U.S. Food and Drug Administration (FDA) posted interim guidance on the labeling of milk and milk products regarding the use of rBST. For example, under Sections 4031(a) and 201 of the Food, Drug and Cosmetic Act, a food is mislabeled if statements are made that are false or misleading, including the absence of information the effect of which may be to mislead (Centner & Londhe, 1995). In particular, since BST occurs naturally in all milk, a label saying that milk is "BST-free" would be false and misleading. Hence a truthful label would say that the milk comes "from cows not treated with rBST." Secondly, since this statement, standing alone, might imply that milk from cows treated with rBST might be less safe, the FDA suggested an accompanying statement that "no significant difference has been shown between milk derived from rBST-treated and non-rBST-treated cows." It also suggested a state record keeping and certification program to regulate the segregation of milk flows and the validity of labels.

This guidance left primary enforcement responsibility to the states, and state governments responded with a variety of different approaches, requiring milk producers to comply with their particular state regulation. Most states simply accepted the federal guidelines, but three precluded any labeling. Nevada, Illinois and Texas all concluded that such labeling might lower milk consumption, and could mislead consumers. Vermont, in contrast, mandated labeling in 1994, but implementation was delayed by regulatory and legal actions, including a suit filed by the International Dairy Foods Association (IDFA). On appeal, the circuit courts ruled with the IDFA, asserting that because mandatory labeling was merely an effort to satisfy consumer curiosity the practice was not justified. Nine states delineated additional labeling guidance in the mid-1990s, and eight of these developed substantiation and verification requirements, including record-keeping, and certification. Two careful analysts of the process commenting on this diverse set of state responses observed that:

“The diverse regulations of the state-by-state regulatory approach and regulatory costs of any labeling directives raise the question whether further federal preemption may be desirable.”(Centner & Londhe, 1995, p.15).

Conclusion

Several lessons can be learned from the rBST experience. First, the adoption of negative labels can create significant niche markets, as evidenced by the Land O'Lakes experience. Second, unlike milk, GMOs in crops and GMO seeds are distinctly differentiable from no-GMO varieties, obviating the labeling problems associated with naturally occurring BST in milk. Even so, a no-GMO label might be interpreted as implying that non-labeled foods are harmful. Foods (or seeds) with and without GMOs clearly are different, or a market for them would not exist. Their risks, while largely conjectural, require further research. In the meantime, those averse to these perceived risks would be free to purchase based on the no-GMO label. Third, and most significant, the U.S. experience indicates the importance of some degree of uniformity in establishing a negative label across jurisdictions in order to avoid a patchwork of regulations. This is especially true for GMO crops and seeds which, unlike milk, have global rather than local or regional markets. To the extent that such a set of harmonized labels were put in place, the niche markets created would expand from local to global market opportunities for no-GMO products, allowing growth in these markets to proceed in tandem with those for GMO-containing food and seed.

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