

The Implications for Biotechnology-Related Products of Food Safety and Nutrition Based Marketing

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In any consideration of the potential impacts of biotechnology on the food supply, health, safety, and environmental impacts are emphasized first. Economic impacts are next, such as societal benefits and costs, the organization of production, processing, and distribution; and firm profitability and market shares.

For both sets of impacts, at issue is how biotechnology affects the chain of production and distribution running from input manufacturers to producers, processors, distributors, retailers, and consumers. Food safety and nutrition are fascinating because they link health and safety concerns with economic concerns. This is because the economic success of food marketing firms is becoming more closely linked to the safety and nutritional attributes of the products they produce and sell. This is a key point since the closeness of this link is relatively new.

The focus here is on the marketing level aspects of biotechnology, particularly on consumer acceptance which will ultimately determine biotechnology's success or failure in the marketplace. This paper operates with a premise that sets aside considerations of what safety standards government agencies will apply to acceptance of biotechnology-related products. These considerations, while important and a major topic of discussion at this conference, are not directly relevant to this discussion.

Therefore, it will be assumed that the biotechnology-related ingredient, drug, process, or product under discussion has been accepted under roughly the same government safety standards currently in effect for conventional ingredients, drugs, processes, and products.

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market in a very specific context, which is the result of consumers' experiences in the 1980s. This context will be considered first, and then marketing issues particular to biotechnology-related products will be discussed.

The Current Food Marketing Environment

In the last decade, increased scientific evidence and consumer awareness of links between diet and health have created an expanded market for food products that fit specific safety and nutrition profiles. The shift in demand coincided with significant changes in the regulatory environment during the 1980s. Firms have developed at least two major strategic responses in the face of these changes in demand and the regulatory environment (Caswell and Johnson, 1990). The first response has been the development of strategies that create product or establishment differentiation based on food safety and nutrition. The second response has been to develop strategies that attempt to manage any potential liability or exposure to government regulation associated with food safety and nutrition issues.

The differentiation-based strategies are domain offensive in nature. Firms using them seek to increase or, at a minimum, maintain their market shares by emphasizing the food safety and nutrition attributes of their products or services. Such differentiation may be based on product characteristics or, in the case of retailers, on the services offered by the firm (e.g., screening of fresh produce for pesticide residues). These strategies emphasize positive information and, where possible, suppress negative information. In the current marketing environment, food safety and nutrition have become a new basis for non-price rivalry between firms in the food system. For example, market shares in the ready-to-eat cereal industry have shifted based on the leading firms' relative success in marketing high fiber cereals.

This new emphasis on differentiation and marketing based on food safety and nutrition developed in the 1980s because of several factors. First, as noted above, scientific and consumer knowledge improved and consumers subsequently altered their demand for some food products in response. Second, the federal government's policy on health claims made by firms on their food labels changed. After 1984, and certainly after 1987, such health claims became legal under lenient standards and enforcement

by the Food and Drug Administration (FDA). This change gave firms a much broader scope for effectively communicating differentiation based on food safety and nutrition. Third, and at the same time, the Federal Trade Commission was lax in pursuing deceptive advertising cases against major food products. These latter two factors combined to create a virtual free-for-all atmosphere for firms wishing to pursue differentiation strategies.

Fourth, and finally, there was an increased perception among consumers in the 1980s that the federal regulatory system was not adequate to insure food safety. Many commentators, and several speakers at this conference, have implied that this erosion in confidence was the result of hyping of the food safety issue by the media and special interest groups. In fact, however, the erosion in confidence was due in large part to inadequate government regulation during the 1980s, which was documented in a long series of reports (U.S. General Accounting Office 1986a, 1986b, 1989; National Academy of Sciences, 1987).

Examples of marketing based on food safety and nutrition attributes are abundant. Growers and manufacturers have engaged in product innovation to produce frozen foods that meet nutritional recommendations (e.g. ConAgra's Healthy Choice line), baked goods that contain no fat or cholesterol (e.g., Entenmann's No-Fat, No-Cholesterol line), and beef products produced without use of hormones, antibiotics, feed additives, or preservatives (e.g., Coleman's Natural Beef). Distributors and retailers have similarly engaged in differentiation by offering services to consumers such as in-store nutrition information programs and testing of fresh produce for pesticide residues.

The second major strategic response of food firms to changes in demand and regulation has been to develop strategies which aim to manage any po-

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tential liability associated with food safety and nutrition or attempt to protect the firm from the impacts of government regulatory activities. This strategic response tends to be defensive in nature and focuses on the management of negative attributes and information. While often designed to protect specific aspects of the firm's operations, these strategies may also attempt to influence public opinion on the general issue of food safety and nutrition, often through repeated assurances that the food supply is safe.

Thus the marketing of biotechnology-related products will take place in the context of a market that is sensitized to food safety and nutrition issues. It is a market made up of firms and consumers who now have experience with marketing and differentiation based on food safety and nutrition attributes. Biotechnology related products will have to compete not just against traditional or conventionally grown products but also against an array of products that are sold based specifically on their food safety and nutrition characteristics.

Marketing Biotechnology-Related Food Products

A crucial decision facing firms is how to market biotechnology-related food products. There appear to be two basic choices. First, firms can treat biotechnology related production processes and products as if they were just another process or product. In this case, marketing would emphasize the positive attributes of the product but not focus on its unique or new origins. Second, firms may differentiate the product based on its biotechnological origins. This may work well if the firm has some exclusivity (or at least temporary exclusivity) in marketing the product. For example, marketers may be able to stress positive food safety and nutrition attributes resulting from the biotechnological origins of the product, e.g., grown with fewer pesticides or containing a higher nutrient content.

But marketers must be aware that even if they prefer the first approach events are, at least in the foreseeable future, unlikely to allow a firm to simply finesse the biotechnology issue. The experience to date with bovine somatotropin (BST) bears this out, as will be discussed further below. The difference in today's market is that passing a government approval process, even when the process is stringent, is no longer enough for the consumer. Wishing that it was, is simply howling at the moon at this point in time. As several speakers noted yesterday, consumers will evaluate these products and the processes with which they were developed based on a range of risk and value considerations.

Unfortunately, there appears to be a great deal of resentment in some parts of government and the food industry that this is the case. Without question, there is ample room for a better understanding of food safety, nutrition, and biotechnology among consumers. But this is not a one-way street with experts presenting information and "straightening out consumers' perceptions". To look at the process this way is to take a condescending view toward consumers' own safety and value agenda. This agenda may not be that of the scientists but it is no less valid.

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As we look to the marketing of biotechnology-related food products, there are two major issues. First, again assuming that the food product has been approved for sale by the government: Who is going to sell biotechnology to the public? The candidates are drug or ingredient manufacturers, growers or farmers, food manufacturers, retailers, trade associations, government, or public interest groups,

The experience to date with BST illustrates the difficulties associated with this question. It is not at all clear who will market BST to the public (Richards, 1989a). It appears to me, as an outsider, that the introducers and users of BST hoped this was an issue they could finesse. In other words, they hoped they could treat BST use as just another production process not requiring any special consumer marketing program. They have found that in the current marketing environment this cannot be done. Several firms are reported to have refused to handle milk from cows treated with BST, either entirely or until FDA approval. These firms include one dairy cooperative (Associated Milk Producers Inc.), at least three processors (Kraft, Borden, and Ben and Jerry's Homemade Ice Cream), and four retail chains (Safeway, Stop & Shop, Kroger, and Van's). In a situation where processors and retailers are increasingly basing major parts of their marketing strategies on food safety and nutrition, firms will be very hesitant to risk their hard-earned differentiation by selling products that raise safety concerns while yielding only small benefits to themselves. The firms mentioned above apparently found this private benefit/cost tradeoff to be negative for BST milk, at least in its initial period of use.

So, who will sell BST to the public? Supermarkets complain that the makers of BST are dumping the responsibility for allaying consumer fears regarding BST on them. An official of the Kroger Co., for example, is quoted as saying, "If they think it's safe, let them step up the plate and defend it" (Richards, 1989b) and, "If we're going to make any mistakes on this, we're going to make them on the side of safety" (Ingersoll, 1989). The firms' differentiation strategies make them reluctant to accept any risks to their reputations that might be associated with marketing biotechnology-related products that have not already been broadly accepted by the public.

The second major marketing issue facing biotechnology-related products is: What information disclosure will be required in the presentation of

In marketing, the the products? And, in addition: Who (federal or state biotechnology issue government) will require this information? Labeling can not be simply fi-
n8ssad .. is an attractive option in the current market atmosphere of increased consumer awareness because it is responsive to consumers' desire for control. It is also attractive to regulators who wish to place more reliance on markets rather than government agencies for making choices regarding food safety and nutrition.

We are, I think, groping for a policy on when provision of information through labels is a desirable regulatory strategy. Many firms have not presented a consistent front on this issue. If firms believe that more information is better for the consumer in the area of health claims, can they in good faith object to the labeling of biotechnology-related products? My prediction is that for controversial biotechnology-related products, labeling will be widespread. Either government units will require labeling to identify such products or some firms will voluntarily label that they do not use any biotechnology-related processes or ingredients in their products. In either case, consumers are likely to be able to identify products that are biotechnology-related from those that are not. Again, in marketing, the biotechnology issue cannot be simply finessed.

The key question, ultimately, is how biotechnology-related products will compete in a marketplace made up of traditional and conventionally processed products and those that are being marketed specifically on the basis of food safety and nutrition attribute. This is a clouded question at this point in time.

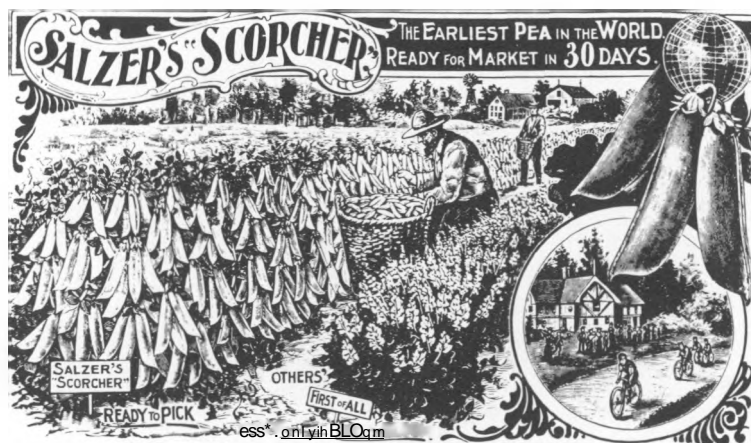
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