The New Atlantis
A Journal of Technology & Society

How Not to Label Biotech Foods

Jonathan H. Adler

When Californians go to the polls this November, one of the ballot initiatives they will vote on will be the California Right to Know Genetically Engineered Food Act, a proposed law that would require that foods containing genetically modified organisms (GMOs) be specially labeled. This move for mandatory labeling is just the latest development in the ongoing controversy over the safety of genetically modified (GM) foods.

Proponents of the technology argue that creating GM plants and animals for human consumption is essentially no different from the selective breeding that farmers have carried out for millennia, which resulted in accumulated genetic changes over time. But the methods used to create today's genetically modified organisms allow for more rapid and dramatic changes. Modern GMOs are often created using recombinant DNA techniques in which an organism's genes are directly altered, often by inserting DNA fragments from other organisms. This approach offers much greater precision than selective breeding, removing the requirement of several generations of breeding for a particular trait to become widespread in a population. It also allows for the direct addition to an organism of novel traits that do not occur naturally in the species.

Critics cite concerns like the potential for loss of biodiversity, and fear that the widespread use of recombinant DNA techniques in agriculture represents a vast and as yet unproven experiment with uncertain consequences for human health and the environment. There are a few known cases of unintended negative consequences resulting from the use of GMOs: for example, the use of crops genetically engineered to be resistant to the powerful herbicide Roundup may have accelerated the emergence of weeds that are also resistant, and are spreading in the wild, in some cases creating a sort of war of attrition in which farmers must use additional herbicides or revert to manually removing the weeds. Although there is no evidence that these or any other GMOs have had adverse impacts on human health or safety—and indeed, the National Academies have repeatedly concluded that GM techniques pose no known unique risks to human health as compared to more traditional plant-breeding methods—some

Jonathan H. Adler *is Professor of Law and Director of the Center for Business Law and Regulation at the Case Western Reserve University School of Law and a senior fellow at the Property and Environment Research Center.*

critics contend that GM foods should be considered unsafe for human consumption until proven otherwise, and others fear the possibilities of genetically modified organisms being released into the wild and damaging ecosystems, and believe they should not be permitted at all.

But advocates note the advantages of GM foods in combating malnutrition and related illnesses: for example, "golden rice," a product genetically engineered to have high concentrations of beta-carotene, holds the potential if widely used to prevent hundreds of thousands of cases of permanent blindness and millions of deaths in developing countries every year caused by diets deficient in vitamin A. More generally, genetic modification allows crops to produce larger yields, be more naturally resistant to pests, and be better able to withstand droughts, meaning that they are able to provide more food while using less land, water, and pesticides—a boon to both human prosperity and the environment. Advocates further emphasize that there is no evidence to date of negative health impacts from the production or consumption of GM foods, and argue that the enormous benefits overwhelm the potential risks.

What the Law Now Requires

Although GM foods have long been controversial in Europe, the debate has received less attention in the United States. Recently, though, there have been a number of campaigns to restrict GM foods in America, not only in California, but in the U.S. Congress, where this year Senators Bernard Sanders (I.-Vt.) and Barbara Boxer (D.-Cal.) proposed an amendment to the Farm Bill that would have allowed states to introduce GM-food-labeling requirements (the amendment failed). The recently renewed concern over GM labeling may be due in part to the expected approval by the Food and Drug Administration (FDA) of a company's request to offer GM fish for human consumption—a decision that would mark the first time the agency approved a GM animal (all approved GMOs to date have been plants).

The company, Massachusetts-based AquaBounty Technologies, has been seeking approval for its AquAdvantage salmon for some time now: the fish themselves were developed in 1989 when scientists genetically modified Atlantic salmon to produce more growth hormone, allowing them to reach market size much faster than ordinary fish, and the company first requested approval from the FDA in 1995. The agency seems ready to approve the fish, as its review of the evidence found "no biologically relevant difference" between food from the AquAdvantage salmon and

natural Atlantic salmon. Because the genetically modified animals are nutritionally the same as the unmodified salmon, the FDA concluded that they are as safe to eat as unmodified fish.

Some have argued that if the FDA does approve the AquAdvantage salmon, it should still require that the fish be labeled as genetically modified in stores. But although environmentalists and some members of Congress have argued that consumers have a "right to know" how their food was made, under existing FDA policy for GMO foods, labels only need to accurately describe the attributes of what is in the food itself, not the processes by which the food was grown or made. And the evidence shows that the mere fact that the salmon was genetically engineered is no more relevant to consumer health, nutrition, and safety than, say, the size of the individual fish itself or the pen in which it was raised. So unless and until the FDA finds some difference in the content of the genetically modified fish, it in fact has no basis upon which to require special labeling.

The FDA and other federal agencies do of course require food producers and manufacturers to disclose certain information about their products that is relevant to safety, or simply to diet and nutrition. Under the Food Allergen Labeling and Consumer Protection Act of 2004, foods that contain major allergens must be clearly labeled in order to ensure the safety of people with severe allergies. Under the Nutrition Labeling and Education Act of 1990, nutritional content labels are mandated by the FDA to provide consumers with accurate information about the nutritional value of food products, helping them to make informed choices about their diets. Other labeling requirements, such as the Fair Packaging and Labeling Act of 1966, ensure that the amount of product in a package is accurately labeled. All of these laws require that producers inform consumers about the *contents* of their products. But in the case of the AquAdvantage salmon and other GMO products approved for sale, the FDA has not found any difference in their contents; they differ from their natural counterparts only in the way those contents were produced.

The Limits of Labeling

Aside from the fact that the FDA currently has no legal basis to require GMO labeling in the absence of a difference in food composition, it may not even be constitutional to attempt to give the FDA that authority. Product labels are commercial speech, which is protected by the First Amendment, even if it does not receive the same protection as other forms of expression such as political or religious speech. Under a test

established by the Supreme Court in its 1980 *Central Hudson* decision, if a company's commercial speech is lawful and not inherently misleading, the government must proffer a substantial interest before it may be regulated. Further, any regulatory requirements must directly serve that interest and be no more extensive than necessary. But there is nothing inherently misleading about failing to disclose on packaging every piece of information that a consumer might find relevant. If government agencies like the FDA find no significant difference in the composition of GM foods compared to other foods, then it would seem that the only interest in mandating the labeling of those foods as produced using GMOs would be a consumer's "right to know." But this "right to know" is not a sufficient interest to justify regulating the commercial speech of food producers.

The limitations of labeling requirements, including food labels noting the use of biotechnology in production, have been legally established in previous cases. In 1994, the state of Vermont passed a law requiring the labeling of milk produced by dairy farmers who used the chemical recombinant bovine somatotropin (rBST), a synthetic version of the natural hormone that helps to regulate cows' milk production, and which can be injected into dairy cows to increase milk production. (Recombinant DNA technology is used to produce the hormone synthetically, but unlike its use in GMOs, it does not genetically modify the cows themselves.) Conventional dairy producers who used rBST challenged Vermont's labeling requirements in 1994; they noted that the FDA had approved rBST in 1993, finding that while its use affects the cows themselves, it has no effect on the composition of the milk produced, and raises no human health or safety concerns. Applying the *Central Hudson* analysis, the Second Circuit of the U.S. Court of Appeals found that Vermont therefore did not have a substantial interest in compelling dairy manufacturers to adopt mandatory rBST labels. Vermont had cited no evidence that milk from rBST-treated cows posed any risk to public health, and it did not claim that health or safety concerns motivated adoption of the labeling requirement. Rather, Vermont adopted the standard due to "strong consumer interest and the public's 'right to know.'" But this, the Court held, was insufficient, and so the labeling requirement was overturned.

There is a virtually infinite array of characteristics that might interest consumers about any given product and the processes through which it was made. If consumer interest alone were sufficient to authorize a labeling requirement, the Court of Appeals observed, "there is no end to the information that states could require manufacturers to disclose about their production methods." Moreover, a consumer-interest standard

would empower governments to force producers to stigmatize their own products—and the Circuit Court reported that it could find no case in which a court had upheld a regulation "requiring a product's manufacturers to publish the functional equivalent of a warning about a production method that has no discernible impact on a final product."

While the government should not and cannot mandate disclosure of the use of biotechnological techniques to create food when the composition of the food is not affected, companies ought to be allowed to *voluntarily* advertise that their products were or were not made using such technologies—in contrast to the attempts by some to ban such labels. In response to consumer concerns, some dairy producers have sought to label their milk as "rBST-free." Milk producers who do use rBST have objected to these labels, arguing that they are misleading because they suggest that there is something wrong with their milk, even though the FDA found no difference between them at the time it approved the use of rBST. In response to pressure from the dairy industry, some states sought to limit the ability of organic producers who did not use rBST to include that information on their labels. The state of Ohio, for example, adopted regulations in 2008 prohibiting milk producers from placing "rBST-free" labels on milk cartons.

Organic producers successfully challenged Ohio's requirements in federal court. In the 2010 *International Dairy Foods Association v. Boggs* decision, the U.S. Court of Appeals for the Sixth Circuit noted that more recent evidence indeed showed some compositional differences between milk produced from cows using rBST compared to those without, although there was still no evidence that this difference was significant to human health. Whether or not milk from non-rBST-treated cows is any safer, the court concluded there was a sufficient difference in composition to reject the state's claim that an "rBST-free" label is inherently misleading. However, the Court upheld the state's ability to impose limited disclaimer requirements along with those labels, because the "rBST-free" label could imply that milk from rBST-treated cows would contain rBST, when that has yet to be shown. (Current testing methods are unable to determine the difference between the synthetic and natural hormones in milk.)

The 2010 Ohio decision reaffirms the *Central Hudson* conclusion that product labels receive First Amendment protection, and that the state's ability to control the content of such labels is limited. Consumers may or may not prefer milk from cows that were administered rBST, and producers should be free to use their labels to identify products as potentially desirable to consumers with particular preferences. But lacking evidence

of a difference to human health and safety, differences in manufacturing must be regarded by the government as merely preferences, and labels noting such differences can be *allowed* but not *required* without a more compelling justification. The government's role is to ensure that whatever information is disclosed is truthful and not misleading—not to mandate the disclosure of facts about how products were made that may be important to some consumers but not others, including aspects of production that have not been shown to affect consumer health or safety.

A Free-Market Approach

That some consumers may want to know about how a product was produced should not by itself be sufficient for mandatory labeling. As already noted, consumers may want to know all sorts of things about how products are made, or who made them—but we typically let the market provide such information. Many Jews prefer food prepared in accordance with kosher laws (as do many Muslims for halal). In response to this demand, many food producers submit their products for evaluation by a rabbinical council so that it can be certified as kosher, and thus become eligible for a voluntary label. Even though the demand for kosher foods is only a small part of the market, many large corporations participate in this process. Some consumers care about whether their clothes were made by unionized labor, or by poor or exploited workers in developing nations. Some want to know whether their food is produced humanely. Still others may care whether a company's executives support particular politicians or policies, as the CEOs of Whole Foods and Chick-fil-A have each discovered in recent years. Consumers often care about the nature of the products they buy, how they were produced, and even who produced them.

But so long as there is no difference in a product itself that could adversely affect the uninformed consumer, and no outright deception or fraud in its labeling, there is no reason for government intervention in labeling. Technology continually allows for existing products to be made more cheaply and efficiently, and for new and better products to be created. This is certainly true for food. It would be an inversion of current policy—and an impractical, unreasonable, and potentially unconstitutional shift—to begin presuming new foods and food production methods guilty until proven innocent. Just as with any other new technology used in food production, it is of course possible that the genetic modification of agriculture might in some cases turn out to have adverse impacts on human

health and safety. But the evidence so far is that it will not—and unless and until there is some evidence of adverse impacts for specific foods, the government has no reason to require the labeling of GM foods.

Consumers will surely be able to obtain this information in any case. In a competitive market, producers have every incentive to differentiate their products in accord with consumer preferences. If some consumers care whether or not their salmon, corn, or other foodstuffs were genetically engineered using recombinant DNA techniques—and some surely do—then competing producers have ample incentive to label their products as "natural" or "non-genetically-engineered," as some already do. Sellers of wild-caught salmon are not shy in promoting the virtues of their product, nor are other producers of organic foods. While "conventional" food producers have not been forced to label their food as such, organic labeling has proliferated to respond to consumer demand for natural food. The government polices the accuracy of food claims, but does not mandate that any producer use an organic or non-organic label.

In a world where many consumers demand food that does not contain genetically modified organisms, market forces will bring information about GMO-free food to the public, label mandate or not. So long as the failure to disclose these characteristics is not known to pose a potential harm to the uninformed consumer, the government should stay its hand.