



International Approaches to the Labeling of Genetically Modified Foods

by
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“The campaign of fear now being waged against genetic modification is based largely on fantasy and a complete lack of respect for science and logic. Genetic modification can reduce the chemical load in the environment, and reduce the amount of land required for food crops.”

Dr. Patrick Moore, ecologist and co-founder of Greenpeace, March 2001. Ê

For his recent support of bioengineered crops, involving the transfer of genes into plants, environmental groups (including his own Greenpeace) have accused Patrick Moore of being a turncoat. His dispute with his fellow environmentalists underscores the controversy surrounding the production and labeling of genetically modified (GM) foods. Governments around the world are struggling to develop optimal labeling requirements for GM foods. There is confusion among consumers, because they are unsure as to what exactly GM foods are and whether these foods are harmful. Science has determined that bioengineered food is nutritionally equivalent and as safe as conventional food, but the GM labeling issue is not necessarily just about science. Rather, the politicians and environmental groups in Europe and elsewhere say GM labeling is about consumer choice and consumer rights and is not even a health issue. The purpose of this article is to discuss international approaches to the GM labeling issue.

The United States accounts for over two-thirds of bioengineered crops produced globally. Other major suppliers include Argentina, Canada and China, growing predominantly biotech soybeans, corn, cotton and canola. In addition, biotech ingredients

and biotech processes are used in the production of a wide selection of food and beverage products such as meat, poultry, cheese, milk, wine and beer. At the present time in California, the major GM crop is cotton. However, biotech food ingredients and biotech processes are a significant factor in the California food industry.

Calgene’s Flavr Savr™ tomato was one of the most famous biotech crops ever grown in California. The tomato was genetically engineered to slow its rate of ripening. For various reasons, the Flavr Savr™ variety was never a big success in the U.S. fresh market. Ironically, large quantities of California-grown Flavr Savr™ tomatoes were sold in the United Kingdom (U.K.) in the mid 1990s as tomato puree, clearly labeled as a GM food product. Consumers in the U.K. are viewed as being anti-GM, but they aggressively purchased Flavr Savr™ puree because the price was right.

Mandatory Labeling Issues

Any labeling of GM food presents major challenges for policy makers. The most fundamental problem relates to DNA detection or lack thereof, because the measurement of GM material becomes

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Table 1. Sample of International Guidelines for Labeling Genetically Modified Foods

	Labeling Scheme	% Threshold for Unintended GM Material	Are Some Biotech Foods and Processes Exempt?
Canada	Voluntary	N/A	N/A
United States	Voluntary	N/A	N/A
Argentina	Voluntary	N/A	N/A
Australia & New Zealand	Mandatory	1	Yes
European Union	Mandatory	0.5 ^a	Yes
Japan	Mandatory	5 ^b	Yes
S. Korea	Mandatory	3 ^b	Yes
Indonesia	Mandatory	5 ^c	Yes
Russia	Mandatory	5	Yes

N/A means not applicable
a. Proposed threshold in the EU, lowered from 1 percent
b. Top 3 ingredients in Japan and top 5 ingredients in S. Korea
c. Not yet operational

difficult or impossible if the GM crop is highly processed. For example, products such as soybean oil or meat produced from GM feedstuffs may not contain any evident GM protein. In addition, biotechnology is used in certain food and beverage manufacturing processes and this cannot always be detected in the final product. For instance, most cheese and wine is made with genetically engineered enzymes.

Proponents of mandatory GM food labeling believe that consumers have the right to know whether or not they are eating GM foods. Opponents say that such a label implies a food safety risk that does not exist and trying to label something that is not detectable invites fraud and the fraud cannot even be detected. Mandatory labeling would result in unnecessary marketing costs with no apparent offsetting consumer benefit, and would be a nightmare to implement. Marketing costs would increase with segregation and identity preservation requirements. In addition, mandatory labeling requirements could inhibit further development of GM technology. The United States has criticized the EU's mandatory GM labeling as being nothing more than trade protection.

Even with mandatory labeling, standards are inconsistent and consumers are not necessarily provided with greater choice. In Japan and the EU (where GM labeling is mandatory) it is virtually impossible

to find any products on the food shelf that are labeled as containing GM ingredients. So the approach taken by Japan and the EU is not really giving consumers a choice. Furthermore, there is a substantial amount of GM food eaten in the EU and Japan that does not have to be labeled. These products include cheese, soy sauce, vegetable oils, baked goods and numerous manufactured foods.

Internationally, the Codex Alimentarius Commission, an international standards-setting body for food, has a Committee on Food Labeling. Codex is trying to develop guidelines for the labeling of biotech foods but there is no agreement as to what the international standards should be. In all likelihood, there will be no final Codex standard on the labeling of biotech foods for many years.

International Approaches to GM Labeling

There is a huge gap in approaches taken in different countries towards GM food labeling (see Table 1). For instance, the EU has very strict GM labeling guidelines and they appear to be getting stricter. At the other end of the spectrum are the United States, Argentina and Canada, whose governments do not believe in mandatory labeling. Japan, South Korea, China and other countries are somewhere in between the EU and the United States on this issue. The reason given for the U.S. government's lack of support for the mandatory labeling of GM foods is that the FDA believes there is no scientific evidence that GM foods are nutritionally different than non-GM conventional foods.

This labeling debate hits close to home in California because anti-biotech groups in Oregon have recently put the labeling issue on the state's ballot for the fall 2002 election. The Oregon initiative is ballot Measure 27. The anti-biotech groups have declared that a similar initiative is planned for California. If labeling guidelines similar to those in Measure 27 were imposed on California agriculture, the economic

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burden would undoubtedly be high as many of California's food products would require labeling.

This summer, the European Union's (EU) Parliament approved new GM labeling proposals that, if implemented, could jeopardize a large share of U.S. food exports to European consumers. These new guidelines will now be debated in the EU Commission, and it will be several months before we know the final outcome with regard to the new EU labeling rules.

The proposed EU regulations would require the labeling of foods whose ingredients contain 0.5 percent or more of GM DNA or protein, whereas the current tolerance level is 1 percent. The new EU regulations would require labeling of food and feed products containing GM material irrespective of whether the GM material can be detected. Importantly, only authorized GM material would be allowed in food and feed sold in the EU. Compared to the U.S., there are only a small number of authorized GM crops in the EU.

Partly in response to these new EU labeling proposals, the U.S. government is threatening to file a World Trade Organization (WTO) complaint against the EU for restraining trade. The trade action would be directed at the EU moratorium on the approval of any new GM crops in Europe, in place since 1998.

Australia and New Zealand jointly adopted mandatory labeling with a 1 percent threshold for the unintended presence of GM product. A number of foods are exempt from their labeling requirements including vegetable oils, food additives, and food processing aids, such as enzymes used in cheese and brewing.

Japan's labeling regulations are much more reasonable than those in the EU. The Japanese government requires mandatory labeling when GM material is present in the top three raw ingredients and accounts for 5 percent or more of the total weight. So tofu must be made from non-GM soybeans or else be labeled accordingly. Exemptions to Japan's labeling requirements include feedstuffs, alcoholic beverages, and processed foods such as soy sauce, corn flakes and other vegetable oils. South Korea's regulations are similar to Japan's except the tolerance level is 3 percent for the top five ingredients. In the EU, the threshold applies to all ingredients.

China leads the world in public support of biotech crop research. GM crops in the field trial stage include rice, wheat, corn, soybeans, potatoes, cabbage and tobacco. GM cotton accounts for about 30 percent of

China's cotton acreage. China has not yet announced a firm position on GM labeling, but it has recently proposed unexpected restrictions on GM crop imports. Outside China, this is viewed as a trade barrier that limits soybean imports from the United States.

Conclusion

So why do we observe the wide difference in approaches to GM labeling across countries? There are a number of possible explanations. The EU and Japan have experienced domestic food scares in recent years. So consumers in these countries do not believe scientists who say GM food is safe. Political pressure from environmental groups plays on this fear and raises concerns about GM food safety. Labeling is also a convenient trade barrier. Other countries, such as China, Australia, Indonesia and Russia wish to continue exporting food to the EU and Japan and they are concerned about importer reaction to GM foods.

Remember California's Big Green Initiative (Proposition 128) in November 1990? The Big Green Initiative would have lowered the use of pesticides by California farmers. However the initiative was defeated after voters in the state realized the implications for retail food prices. If Oregon's GM food labeling petition moves to California, it could be the next Big Green facing California agriculture.

For additional information, the author suggests the following references and sources:

- International Service for the Acquisition of Agri-biotech Applications (www.isaaa.org).
- Codex Alimentarius Commission (www.codexalimentarius.net).
- Pew Initiative on Food and Biotechnology (<http://pewagbiotech.org>).
- Greenpeace (www.greenpeace.org/homepage).
- Friends of the Earth (www.foei.org).

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