



Consumers' Desire for GM Labels: Is the Devil in the Details?

by William K. Hallman and Helen L. Aquino

The current U.S. policy regarding the labeling of GM foods is dictated by the Food and Drug Administration (FDA). In 1992, the FDA published a policy describing how foods made from GM plants would be regulated.

FDA will require special labeling if the composition of food developed through GM differs significantly from its conventional counterpart. . . To date FDA is not aware of information that would distinguish GM food as a class from foods developed through other methods of plant breeding and thus, require such foods to be specially labeled to disclose the method of development (FDA, 1992).

The 1992 FDA policy *requires* special labeling of a GM food derived from new plant varieties under several circumstances. Specifically, labels are required to notify consumers if the GM food is no longer equivalent to its non-GM counterpart. In such cases, the food product also needs to be renamed. Labels are also required on a GM food product if its use or the consequences stemming from its use have changed, a new nutritional aspect was introduced that was not customary to the product, or a known allergen was introduced that was not implicit to the product. However, while these regulations require that consumers be alerted when the characteristics of a familiar food product have been substantially altered, the labels do not need to indicate that the change was produced through the process of genetic modification. As such, there are no current regulations mandating that GM foods be identified as such.

However, the FDA released draft voluntary guidelines for the food industry on 'positive' and 'negative' GM food labeling (FDA, 2001). In effect, food manufacturers can voluntarily label their products as containing these ingredients, but are not required to do so. Similarly, manufacturers can label their products as containing no GM ingre-

Articles in this Theme:

Consumers' Desire for GM Labels: Is the Devil in the Details?	217
Consumer Willingness to Pay for GM Food Benefits: Pay-off or Empty Promise? Implications for the Food Industry	223
Lies, Deep Fries, and Statistics!! The search for the truth between public attitudes and public behaviour towards genetically modified foods	227
Testing Public Policy Concepts to Inform Consumers about Genetically Engineered Foods	233
American Opinions of GM Food: Awareness, Knowledge, and Implications for Education	239
Consumer Responses to GM Foods: Why are Americans so Different?	243
What the Print Media Tell Us About Agricultural Biotechnology: Will We Remember?	247
Ag-Biotech: It's Not Just What's for Dinner Anymore, but the Future Contents of our Medicine Cabinets . . .	253
I Will Not Eat It with a Fox; I Will Not Eat It in a Box: What Determines Acceptance of GM Food for American Consumers?	257

dients if they choose to, as long as the statement does not express or imply that the non-GM food is superior.

In contrast, in July 2004, the European Union (E.U.) put into effect a labeling law that requires any food product that contains more than 0.9% GM material to be labeled as such (Alvarez, 2003). This move now allows the importation of GM material into the European Union, ending a defacto moratorium. Moon and Balasubramanian (2004), argue that the E.U. policy requiring mandatory labeling is the outcome of two regulatory principles. The first of these is the separation of scientific risk

assessment from risk management, allowing E.U. regulatory agencies to take into consideration complex economic, political, and societal concerns. The second is the application of the precautionary principle, requiring continued scientific risk assessment to resolve any uncertainty about potential adverse effects of agrobiotechnology on health or the environment. This policy takes for granted that although no problems have yet been found with GM food products, they cannot be proven safe with absolute certainty. Mandatory labeling theoretically allows the assumed majority who would prefer to avoid GM foods the ability to do so, passing the additional costs involved onto those who seek to disturb the status quo by producing or consuming GM products.

According to Moon and Balasubramanian (2004), the current American policy of voluntary labeling represents a compromise between consumer demand to make informed choices and the avoidance of costs associated with over-regulation. This policy is grounded on rules established by the FDA governing the determination of substantial equivalence between GM and non-GM foods, and a tradition of minimal oversight of foods and ingredients that are generally regarded as safe (GRAS). The policy takes for granted that since GM foods are safe, voluntary labeling theoretically allows consumers who wish to avoid GM foods the power to do so, without imposing additional costs on the assumed majority who do not have such a preference (and based solely on scientific risk assessments, *should not* have such a preference).

Both of the current E.U. and U.S. labeling policies are based on the idea that ultimate acceptance (or rejection) of GM foods can be deter-

mined by market forces. That is, the fate of GM foods should be decided by the cumulative purchasing decisions of informed individuals.

However, despite the fact that an estimated 60 to 70% of processed foods on American shelves contain ingredients derived at least in part from GM Crops (GEO-PIE, 2003), major food manufacturers in the United States have decided not to label their products as containing GM ingredients. In part, this is because many in the food industry fear that consumers will interpret GM food labels as warnings implying that the products are of inferior quality or are unsafe and will reject products bearing them (GMA News, 2001; The U.S. Food Safety and Inspection Service, 2002). As a result, rather than providing more useful information to American consumers, The National Food Processors Association claims that labeling will only serve to confuse consumers and place importance on something that is not a health or safety issue (Pew Ag Biotech, 2003).

There is also reluctance to label GM foods because of the projected costs associated with crop segregation and other identity preservation methods required to ensure that GM and non-GM ingredients are kept separate. Without such a system at every stage of the supply chain, it would be impossible for manufacturers to ensure that their labels accurately reflect the GM or non-GM contents of their products. The added costs of these systems would ultimately be passed on to the consumer, yet it is unclear whether the majority of consumers would use the information for which they would ultimately be paying. Estimates of these costs vary greatly, ranging from a projected increase of between \$0.23 and \$3.89 annually in the cost of an average

consumer's food purchases (Jaeger, 2002) to estimates that food prices would increase by approximately 5% (Houtman, 2002).

On the other side of the debate, labeling advocacy groups maintain that mandatory labeling of GM products would offer increased choices to consumers, the freedom to exercise religious or dietary preferences, and the ability to use market forces to express their political views in support or opposition to the use of GM technology. As such, arguing against food labeling is difficult politically, since doing so risks charges that government and industry are conspiring to deny consumers the right-to-know what they are eating (Hallman, 2000).

GM, What GM?

Consumer research conducted over the past several years at the Food Policy Institute (FPI) at Rutgers University finds that, despite being on American supermarket shelves for more than a decade, genetically modified food is an unfamiliar topic for most Americans. In the most recent national survey, less than half of the respondents (48%), were aware that GM foods are currently available in supermarkets, and only a third (31%) believed they had personally consumed GM food (Hallman, Hebdon, Cuite, Aquino, & Lang, 2004). In the same survey, 28% (incorrectly) believed that GM foods are required to be labeled and 40% said they did not know. Only about one in three Americans (32%) were aware that there is no mandatory labeling policy in place in the United States.

Desire for Labels

Given the lack of awareness of GM foods and confusion about current labeling regulations in the United

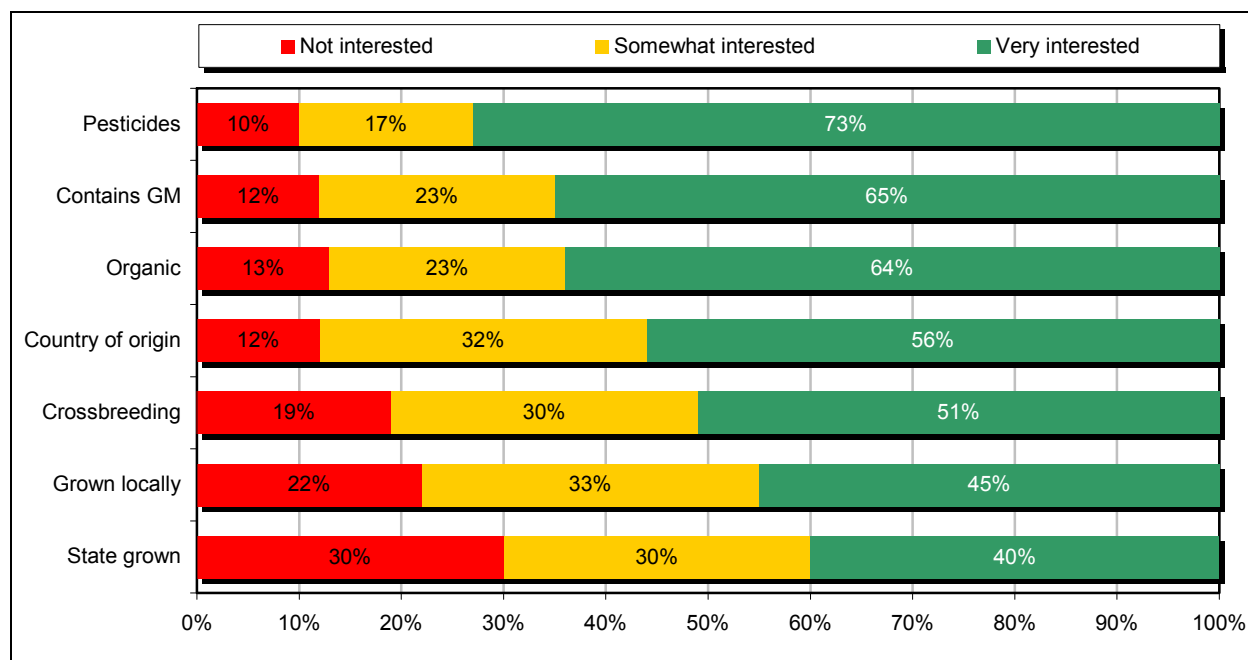


Figure 1. Consumer desire for additional information on food labels.

States, the issue does not seem to be a priority for most Americans. The topic of labeling was examined in detail as part of the 2003 National survey conducted by FPI (Hallman et al., 2003). Prior to any mention of GM foods, 600 Americans were asked how often they typically read food labels. More than half of the respondents (54%) said they read them “frequently” or “always,” and 30% said they “sometimes” read food labels. Only 17% said they “rarely” or “never” read food labels. Despite this, more than three quarters (78%) of the respondents said that there was no additional information they were interested in seeing on food labels. In response to an open-ended question, of those who said there *was* additional information they wished to see on labels only six respondents (less than 1%) said that they would like labels to indicate whether the product contained genetically modified ingredients.

In contrast, after the issue of GM foods was introduced¹ and respondents were queried about how much

they knew about the issues, whether GM foods were for sale in supermarkets, and whether they had eaten foods with GM ingredients, the respondents were asked directly whether or not they would like to see GM foods labeled as such. In response, 94% said they did favor such labels. Even among the respondents who said they never pay attention to food labels, 95% said they wanted this information. Further, more than three quarters (67%) of respondents said they would take the time to read food labels if this infor-

1. *The issue of genetic modification was introduced as follows: “Now I would like to ask you a question concerning another food production method. Genetic modification involves new methods that make it possible for scientists to create new plants and animals by taking parts of the genes of one plant or animal and inserting them into the cells of another plant or animal. This is sometimes called genetic engineering or biotechnology...”*

mation was present, including 44% of those who said they rarely or never read food labels.

However, Americans’ desire for more information about the foods they eat extends well beyond the issue of genetic modification. In the 2004 National Study, the respondents were asked how interested they were in having additional information on food labels concerning a number of attributes (Hallman et al., 2004). The results show that the majority of those surveyed were ‘very interested’ in seeing information on food product labels concerning nearly all of the attributes presented to them (See Figure 1). Of greatest interest is labeling information concerning whether pesticides were used in growing the food (73%), if the food contains GM ingredients (65%), and whether the food was grown or raised organically (64%). The message consumers are clearly sending suggests a strong preference for more information about the foods they are eating.

What is on the Label Matters

This apparent overwhelming support for additional information on food labels suggests that Americans wish to retain “consumer sovereignty;” the right to make food choices based on their own values (Thompson, 1997). However, those choices may confirm food manufacturers’ fears. When asked how a GM food label would affect their purchasing decisions, more than half (52%) said it would make them less willing to purchase the product, 38% said it would make no difference, only 4% said they would be more willing to buy a product labeled as genetically modified, and 6% did not know (Hallman et al., 2003).

Focus groups conducted by the FPI to examine how consumers interpret information on food labels confirm consumers’ wariness of purchasing foods labeled as containing GM ingredients (Hallman, Aquino, & Phillips 2003). Participants were segmented by their self-assessed awareness of food technologies and whether they shopped at conventional or ‘natural’ food stores. Several different label phrases and placement options were tested. In general, consumers who considered themselves to be more aware, were very skeptical of the claims on the food labels. They questioned the motivations of the food producers who labeled the products and wanted to know more details regarding the benefits and outcomes of genetic modification. In contrast, the less aware consumers were much more likely to perceive the labels as warnings. In the absence of more detailed information regarding the consequences of genetic modification, these consumers perceived the mere presence of a label as a signal that it was something about which they should be con-

cerned. The shoppers at natural food stores, who were the most aware of GM foods, said that if they saw GM on a food label they would not buy the product because they did not want food that contained such ingredients. The shoppers at conventional food stores, who were generally less aware of GM, said that they wanted more information about the technology before they would buy a product labeled as such.

While these reactions seem to confirm the food industry’s concerns about how GM food labels are likely to be interpreted by American consumers, data suggest that not all GM food labels may be off-putting. Americans say they would be more willing to purchase GM foods if the labels on such products included information certifying their safety. Safety certification from a variety of entities positively influenced reported willingness to purchase GM products. Respondents were asked how labels certifying food safety from various sources, including the USDA, FDA, EPA, the biotech industry, medical and scientific organizations, and environmental/consumer groups, would impact their willingness to purchase GM food. For every source presented, 40-50% of respondents indicated that the label would make them more willing to purchase the product (Hallman et al., 2004).

The strongest positive influences on respondent willingness to purchase were labels from the FDA (52% report increased willingness) and the USDA (52%), followed closely by medical/scientific organizations (44%), the EPA (43%), and consumer/environmental groups (42%). The biotech industry had the strongest negative impact, with one in-five respondents (20%) reporting a decrease in willingness to purchase GM products certified as safe by the

biotech industry. When combined, about three quarters of the respondents (74%) reported an increase in willingness to consume GM foods with the inclusion of some form of safety certification.

But How Will Consumers Really React to GM Labels?

Of course, it is well known that what consumers *say* they will do in surveys and what they actually do often diverges. In our 2003 focus groups we asked the participants how often they read labels and, when they do read labels, what information they are seeking. Consistent with other research on how consumers use food labels, our focus group respondents told us they only read labels when they evaluate a new product or if they notice that something has changed on the label of a product they usually buy. They also told us when they do read labels they primarily look to the ingredients panel and to the nutritional panel for fat content, sodium content, or calorie information. In fact, none of the participants even noticed the addition of a GM food label on the products they were evaluating until it was pointed out to them. Once having been made aware of them, however, the participants had strong reactions to the labels, questioning the quality and safety of the food products to which they were affixed.

So, this is the conundrum for U.S. policy makers. When you ask Americans if they want GM food labels, nine-in-ten say they do. This is consistent with the views of those who favor mandatory labeling, arguing that consumers have a right to know and a right to choose. However, since most Americans know very little about the technology, even simple declarative sentences about

the presence of GM ingredients on a food label are likely to cause the product to be rejected by consumers. This is consistent with the position of opponents of mandatory labeling who argue that in the absence of any evidence that GM products are inferior or unsafe, any label that causes consumers to believe otherwise is misleading. The effect of such labels would be to cause consumers to reject foods made with GM ingredients, thereby reducing real consumer choice. They argue that without an informed consumer base, this is a case where providing *more* information doesn't necessarily translate into providing *good* information.

The paradox, of course, is that without GM labels, it is unlikely that American consumers will become much more aware of the presence of GM foods than they already are. Awareness of the availability of GM foods on supermarket shelves has changed little since our first survey focused on the issue in 2001 (Hallman, Adelaja, Schilling, & Lang, 2002). Yet, as already noted, consumers who are unaware of GM technology are likely to see such labels as warnings and reach conclusions that may not be warranted.

Enticing consumers to purchase products by making false or misleading statements is illegal in the United States. Indeed, the 2001 FDA draft labeling guidelines do not permit manufacturers to express or imply through labeling that a non-GM food is superior to that which contains GM ingredients. Ironically, given that the existing research suggesting that many American consumers are likely to interpret GM food labels as warnings, the adoption of mandatory labeling regulations in the United States might have the unintended effect of being a kind of government required 'false advertising.'

So, if labels are not the proper route to greater awareness about GM foods, and consumers do want to know more about the foods they are eating, whose responsibility is it to inform them and what should consumers be told? Indeed, the devil is in the details.

For More Information

Alvarez, L. (July 2003). Europe acts to require labeling of genetically altered food. *New York Times*, 152(52533), A3.

Food and Drug Administration (FDA). (May 1992). Statement of policy: Foods derived from new plant varieties. *Federal Register*, (57 FR 22984).

Food and Drug Administration (FDA). (January 2001). Guidance for industry: Voluntary labeling indicating whether foods have or have not been developed using bioengineering – Draft Guidance. U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, Washington, DC.

Food Safety and Inspection Service (FSIS), USDA. (May 2002). CODEX Committee on Food Labeling Thirtieth Session. USA Comments. <http://www.fsis.usda/oa/codex/biotech02.htm>. (Accessed October 5, 2003).

Genetically Engineered Organisms Public Issues Education (GEO-PIE) Project. (2003). GE foods in the market. Cornell Cooperative Extension.: Available online: <http://www.geo-pie.cornell.edu/crops/eating.html> (Accessed October 2003).

GMA News. (May 2001). GMA Says Massachusetts Mandatory Labeling Bill 'Unnecessary and Redundant.' Press Release. Available

online: www.gmabrands.com/news/docs/newrelease.cfm.

Hallman, W.K. (2000). Consumer concerns about biotechnology: International perspectives. (Food Policy Institute Report No. RR-0602-003). New Brunswick, NJ: Rutgers University, Food Policy Institute. Available on line: <http://www.foodpolicyinstitute.org/docs/reports/Consumer%20Concerns%20About%20Biotechnology%20RR-0602-003.pdf>

Hallman, W.K., Adelaja, A.O., Schilling, B.J., & Lang, J. (2002). Public perceptions of genetically modified foods: Americans know not what they eat. (Food Policy Institute Report No. RR-0302-001). New Brunswick, NJ: Rutgers University, Food Policy Institute. Available online: <http://www.foodpolicyinstitute.org/docs/reports/Public%20Perceptions%20of%20Genetically%20Modified%20Foods.pdf>

Hallman, W.K., Aquino, H.L., & Phillips, D. M. (April 25, 2003). The GM Labeling Debate: Caveat Emptor: Caveat Venditor; Cui Bono? Invited paper presented at the conference 'Crossing Over: Genomics in the Public Arena' sponsored by the Genome Prairie Project, Kananaskis, Alberta, Canada.

Hallman, W.K., Hebden, W.C., Aquino, H.L., Cuite, C.L., & Lang, J.T. (2003). Public Perceptions of Genetically Modified Foods: A National Study of American Knowledge and Opinion. (Food Policy Institute Report No. RR-1003-004). New Brunswick, NJ: Rutgers University, Food Policy Institute. Available online: <http://www.foodpolicyinstitute.org/>

docs/reports/
NationalStudy2003.pdf
Hallman, W.K., Hebden, W.C.,
Cuite, C.L., Aquino, H.L., &
Lang, J.T. (2004). Americans and
GM Food: Knowledge, Opinion
& Interest in 2004. (Food Policy
Institute Report No. RR-1104-
007). New Brunswick, NJ: Rut-
gers University, Food Policy Insti-
tute. Available online: [http://
www.foodpolicyinstitute.org/
docs/reports/
NationalStudy2004.pdf](http://www.foodpolicyinstitute.org/docs/reports/NationalStudy2004.pdf)
Houtman, N. (October 2002). To
Label or Not To Label? UMaine
Today. The University of Maine
Research. Available online: [http://
www.umaine.edu/research/
UMTLabelOrNot.htm](http://www.umaine.edu/research/UMTLabelOrNot.htm).
Jaeger, W.K. (October 2002). Eco-
nomic Issues and Oregon Ballot

Measure 27: Labeling of Geneti-
cally Modified Foods, Oregon
State University Extension Ser-
vice, EM 8817.
Moon, W., & Balasubramanian, S.K.
(2004). Public attitudes toward
agrobiotechnology: The medi-
ating role of risk perceptions on the
impact of trust, awareness, and
outrage. *Review of Agricultural
Economics* 26(2), 186-208.
Pew Ag Biotech. (2003). This food
contains GM ingredients”: Useful
or useless info? AgBiotech Buzz:
Spotlight. Available online: [http://
pewagbiotech.org/buzz/dis-
play.php3?StoryID=72](http://pewagbiotech.org/buzz/display.php3?StoryID=72)
Thompson, P.B. (1997). Food bio-
technology’s challenge to cultural
integrity and individual consent.
The Hastings Center Report,
27(4), 34-39.

*William K. Hallman (hall-
man@aesop.rutgers.edu) is Director,
and Helen L. Aquino is Research
Analyst, Food Policy Institute, Rut-
gers, The State University of New Jer-
sey, New Brunswick, NJ. The
research described here was supported
by a grant provided to the Rutgers
Food Policy Institute by the U.S.
Department of Agriculture (USDA),
under the Initiative for the Future of
Agricultural Food Systems (IFAFS)
grant #2002-52100-11203 ‘Evalu-
ating Consumer Acceptance of Food
Biotechnology in the United States,’
Dr. William K. Hallman, Principal
Investigator. The opinions expressed
in the article are those of the authors
and do not necessarily reflect official
positions or policies of the USDA, the
Food Policy Institute, or Rutgers Uni-
versity.*