Genetically Modified Organisms, Genetically Modified Opinions

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You're walking down the aisle at the grocery store and spot a new label on a product that says bioengineered or genetically modified. The first reaction for many would be to immediately put it down and search for an organic counterpart. Genetically modified organisms have been controversial since becoming public in 1994 (Rangel). Since being introduced in consumer products, there has been a mass outcry by consumers with concerns on GMOs in their food. The current policies that are in place are from the 1992 Statement of Policy: Foods Derived from New Plant Varieties. According to the FDA, all current policies regarding labeling genetically modified products are voluntary. The FDA recommends language that states the products are "not genetically engineered, bioengineered, or created through use of modern biotechnology". The only mandatory GMO labeling, as of November 13th, 2018 is food that show a significant difference than their non-GMO counterpart. There has been no scientific evidence pointing to a difference between genetically modified and non-genetically modified foods (Food & Drug Administration).

Figure 1

Figure 3

Figure 4

Figure 2

Current Labeling Policy

On July 29th, 2016 President Barack Obama signed Public Law 114-26, National Bioengineered Food Disclosure Standard, into effect. The National Bioengineered Food Disclosure Standard's purpose is to create a single standard for GMO labeling. The Agriculture Marketing Service (AMS) is currently in charge of creating and implementing the common standard. This amendment defines that GMO is anything "that contains genetic material that has been modified through in vitro recombinant deoxyribonucleic acid (DNA) techniques; and for which the modification could not otherwise be obtained through

Figure 5

"[The] FDA and USDA decline food labels based on the process of genetic engineering, because of the process of how a food is irrelevant to food safety or nutrition."

conventional breeding or found in nature." (Agriculture Marketing Services)

Anything falling under this category would be required to be labeled. One of the changes purposed is the use of the term "bioengineered" instead of genetically modified organisms. The FDA, which encourages the use of bioengineered terms over genetically modified, states that most products do not contain whole organisms like the term GMO might suggest. GMOs can also be confusing to consumers, which is why one might be reading this piece. Genetic modification can be used to describe a wide range of plant breeding techniques, while genetic engineering references what most people are wanting labeled: the alteration of a plant's genetics. Biological or genetic engineering is seen as the most accurate and appropriate term to be used (Food & Drug Administration). The AMS has recently released potential symbols for the labels that can be seen in Figures 1-5 on the first page.

Testing and Safety

The debate over GMO labeling has become a heated discussion over the topic. One of the biggest arguments against labeling GMOs is that they have not been found to be genetically different, they are just as safe and nutritious as non-GMO crops and produce.

The American Association for the Advancement of Science does not support labeling for fear that it will confuse consumers and insists that there is no real need to do so as they pose no harm (American Association for the Advancement of Science). GMOs are tested multiple times before being approved to go public. Over 30 years and 2,000 studies have looked at the effects of GMOS, and there has been no evidence of negative consequences from GMOs (McHughen,2014) .

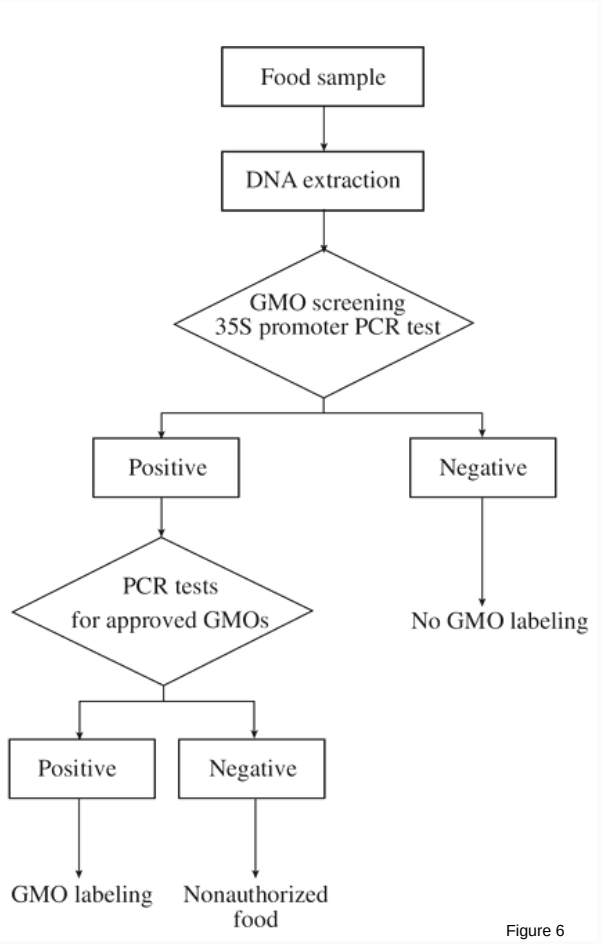

Figure 6

These research findings of no differences or concerns in GMOs are behind the voluntary labeling that is supported by the FDA from the 1992 Statement of Policy: Foods Derived from New Plant Varieties (Food & Drug Administration). Alan McHughen, scientist from the University of California, stated that " [The] FDA and USDA decline food labels based on the process of genetic engineering, because of the process of how a food is irrelevant to food safety or nutrition" These agencies do not believe that GMOs are a health or safety risk, and there is not a need for labels (McHughen, 2014).

Economic Impact

Labeling can have a wide range of effects, not just the packaging. It can cause prices to increase.The Economics of Labeling GM Foods by Wallace Huffman and Jill McClusky discuss the the extra production cost of labeling. The cost of labeling is like that of a tax on production. The producer must spend more on production and labeling, leading to a higher cost to consumers. The extra cost imposed from a mandatory labeling affect everyone, not just those in favor (Huffman & McClusky, 2014).

Food Business News reported on the recent Vermont bill that requires GMO labeling. They estimate that the new legislation could cost $81.9 billion. When broken down, that is $1,050 per U.S.household (Gelski,2016).

Figure 7

Right to Know

Many people that are in favor of GMO labeling cite that consumers have the right to know what is in their food. In a perfect competitive market, consumers know everything that they need to make purchase decisions (Huffman & McClusky, 2014). Today, transparency and honesty are valued in our society, including in the food industry. If people want to know what is in their food, they have every right to know.

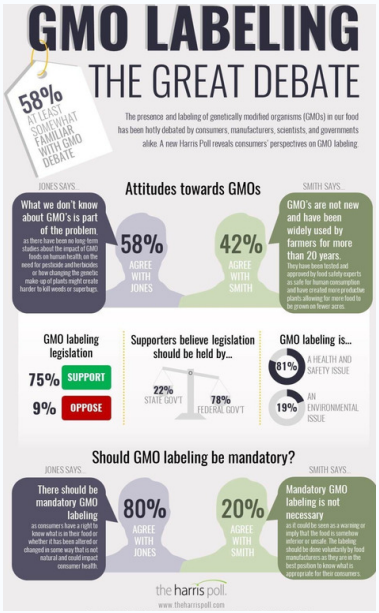

Figure 8

Support for the argument for mandatory labeling is that it seems that majority of people want it. PR Newswire conducted surveys on GMO labeling and found that 75% of those interviewed were in favor of mandatory labeling at the Federal level. Majority of the support, 81%, stems from health and safety concerns on GMOs (PR Newswire, 2016).

Conclusion

While some of the public has concerns over GMO labeling, there is no sufficient, scientific evidence that there is a need for labeling GMO products. GMOs have the same nutritional values as non-GMOs. Human bodies do not digest or use GMO foods differently. GMOs are rigorously tested to ensure that are safe for human consumption. If GMOs were not found safe, the FDA and USDA would be required to label them, or prohibit the sale of them. The upcoming GMO labeling is unnecessary and could cause confusion to consumers shopping. leading them to believe that GMOs are dangerous and need to be labeled. It can be viewed as a warning label, even when there is no scientific evidence that implies there needs to be a warning.

The next time you're at the grocery store, hopefully, you'll think twice about leary of GMO products

For more information on GMOs,
please visit gmoanswers.org.

Resources

"BE Disclosure & Labeling." Butter Grades and Standards | Agricultural Marketing Service, Agriculture Marketing Service , www.ams.usda.gov/rules-regulations/be.

Center for Food Safety and Applied Nutrition. "Labeling & Nutrition - Guidance for Industry: Voluntary Labeling Indicating Whether Foods Have or Have Not Been Derived from Genetically Engineered Plants." U S Food and Drug Administration Home Page, Center for Drug Evaluation and Research www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/ucm059098.htm

Gelski, Jeff. "G.M.O. Labeling Alone May Cost Americans $3.8 Billion." Food Business News RSS, 22 Feb. 2016, www.foodbusinessnews.net/articles/7433-g-m-o-labeling-alone-may-cost-americans-3-8-billion.

"GMO Labeling: The Great Debate." PR Newswire: News Distribution, Targeting and Monitoring, 25 May 2016, www.prnewswire.com/news-releases/gmo-labeling-the-great-debate-300275193.html.

Huffman, Wallace E. and McClusky Jill J. "The Economics of Labeling GM Foods." 2014 AgBioForum

McHughen, Alan. "GMO Safety and Regulations." Genetic Literacy Project, Genetic Literacy Project, 9 Apr. 2018, geneticliteracyproject.org/2014/12/16/gmo-safety-and-regulations/.

"Statement by the AAAS Board of Directors On Labeling of Genetically Modified Foods." AAAS - The World's Largest General Scientific Society, American Association for the Advancement of Science , www.aaas.org/news/statement-aaas-board-directors-labeling-genetically-modified-foods.

Figures 1=5 : “BE Disclosure & Labeling.” Butter Grades and Standards | Agricultural Marketing Service, Agriculture Marketing Service , www.ams.usda.gov/rules-regulations/be.

Figure 6: Lin, Hsu-Yang & Chiueh, Lih-Ching & Yang-Chih Shih, Daniel. (2000). Detection of Genetically Modified Soybeans and Maize by the Polymerase Chain Reaction Method. Journal of Food and Drug Analysis. 8. 200-207.

Figure 7: Gelski, Jeff. “G.M.O. Labeling Alone May Cost Americans $3.8 Billion.” Food Business News RSS, 22 Feb. 2016, www.foodbusinessnews.net/articles/7433-g-m-o-labeling-alone-may-cost-americans-3-8-billion.

Figure 8: “GMO Labeling: The Great Debate.” PR Newswire: News Distribution, Targeting and Monitoring, 25 May 2016, www.prnewswire.com/news-releases/gmo-labeling-the-great-debate-300275193.html.