Genetically Modified Organisms and Environmental Justice: Should Labeling Be Mandatory On Products Containing Genetically Engineered Ingredients

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Genetically Modified Organisms and Environmental Justice: Should Labeling Be Mandatory On Products Containing Genetically Engineered Ingredients?

*Tara B. Ratanun*

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I. INTRODUCTION

Imagine only having a set amount of money to spend each month to purchase food for yourself and your family of four. As you walk down the supermarket food aisle, you are faced with a decision of whether to purchase a “non-GMO” product or buy a product that makes no mention of Genetically Modified Organisms (“GMOs”). At first glance, there are two jars of peanut butter, one is a name brand company for

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$2.68, and right next to it is organic natural peanut butter that is $4.48. While they both look the same, there is a price difference of $1.80. The price difference does not seem like much, but when you are on a set budget for groceries, this amount will slowly add up. Thus, you decide to take the lower priced jar because it looks the same, and cannot be harmful since it is in the market and the label does not say otherwise, right?

This article will discuss why there should be labeling on GMOs. Part II discusses what GMOs are and where they can be found. Part III explores the history of GMO regulations and how the regulations have evolved to date with respect to the different agencies that regulate GMOs. Part IV discusses the effects of GMOs on humans and the environment. Part V compares the United States’ regulations and other countries’ regulations when dealing with GMO foods. Part VI examines environmental justice and government assistance as it pertains with assistance for purchasing food. Part VII looks into earth jurisprudence and how it all affects one another. Finally, the article concludes with policy discussions regarding potential improvements in GMO labeling, and research, as well as the future of GMOs.

II. So What Exactly Are Genetically Modified Organisms?

In 1953, scientists discovered the structure of the Deoxyribonucleic acid (“DNA”) molecule and about forty years later, scientists found a way to use DNA to accelerate natural farming. “Genetic engineering allows farmers to overcome regional hardships, such as the ability to grow crops that are resistant to drought in areas that lack water . . . .” It also creates crops that are resistant to certain pests or pesticides, while concurrently allowing farmers to increase yields. Scientists discovered that if the plant or animal cells were injected with the foreign DNA, “the original cells would take on characteristics of the new genes.” Genetically modified (“GM”) plants have been around since the 1990s, and since then, “there has been an unprecedented rapid rate of adoption of GM organisms by [the United States] and global producers.” GM plants are modified by the application of recombinant DNA technology. Recombinant DNA occurs when scientists are able to identify a specific gene or trait, make copies, and then insert that gene or trait into the recipient organism,
such as food crop. The two most commonly introduced traits in GM plants are herbicide tolerance and resistance to insects.

Although GM technology has expanded, the uncertainty of the effects on the environment, public health, and economy remain unknown, even though GM products are "firmly established in American agriculture." Long-term studies are needed to better understand the effects of GM plants, however, these long-term studies have not been pursued in much depth because of the time they take to conduct and the lack of relative baseline knowledge. GMOs can be found in places where consumers would least expect, and consumers are left in the dark because companies are not required to disclose whether the product contains GM products and/or ingredients.

A. Where Can Genetically Modified Organisms Be Found?

In 2005, the total global area planted with GM crops was ninety million hectares, "with five countries (USA, Argentina, Brazil, Canada, and China) accounting for approximately ninety-five percent of the total area devoted to GM crops." So it is no surprise that "it is estimated that at least 70% of food on grocery store shelves contains GM products." A few items that are already being sold to consumers that contain GM crops are cotton, potatoes, and corn. As of 2012, "94% of all cotton, 93% of all soybean, and 88% of all corn planted in the United States by acreage was a GM variety." "The Grocery Manufacturers Association estimate[d that] between 75% and 80% of conventional processed foods contain genetically modified organisms [ ]."

Each day consumers purchase and prepare meals for their families; however, consumers are unknowingly consuming genetically engineered foods. Unfortunately, consumers do not have a way of identifying whether the foods they are purchasing daily are genetically modified. In a 2010 poll by Thompson Reuters, ninety-three percent of respondents thought that foods should be labeled to indicate whether they have been GM or contain GM ingredients. However, that percentage does not

10. See ANGELO, supra note 8, at 94.
11. Id. at 93.
12. Id. at 96.
14. ANGELO, supra note 8, at 93.
15. Id. at 94.
indicate that consumers would avoid GM products; it only represents that consumers want the right to know via product labeling.\textsuperscript{20}

Consumers want to know exactly what they are purchasing and want to have the option of making a well-informed decision based on the contents of the product by having a fully-disclosed label. If the consumer is on a set budget and receives financial assistance to purchase groceries, they may not be able to purchase the higher priced, organic, all natural product. If the consumer does not have any formal education, they may not be able to make an informed decision based on the lack of labeling, because they may not understand the potential harm in the lower priced item. A review of the history of GMO regulation is necessary to analyze how far the regulations have come, and how these regulations may evolve in the future.

\section*{III. The History of Genetically Modified Organism Regulations}

In 1992, the Food and Drug Administration ("FDA") found that there was no difference between foods that were created by GMO seeds and those created by traditional plant breeding.\textsuperscript{21} This meant that there was no special labeling or approval process required for most foods that contained GMOs.\textsuperscript{22} “The 1992 [FDA] policy statement on foods derived from [GM] plants indicates that the FDA will regulate: (1) substances intended to alter foods’ nutritional composition; (2) substances intended to increase a plant’s resistance to chemical herbicides; and (3) substances intended to alter foods’ flavor or texture.”\textsuperscript{23} In order to regulate the safety of whole foods, the FDA will continue to rely on existing regulations to “police against ‘any substance that occurs unexpectedly in the food at a level that may be injurious to health.’”\textsuperscript{24}

In 2000, the United States Department of Agriculture ("USDA") approved the field release and testing of GMO crops, and the routine was “based on safety information provided by the companies rather than independent evaluations made by the agency.”\textsuperscript{25} Previously, the FDA did not require the testing of GMO products, and only required that the party introducing the product into the American market assured that the product was safe.\textsuperscript{26} If the products were subsequently proven to be unsafe, then the Federal Food, Drug, and Cosmetic Act ("FFDCA") would hold that party responsible and subject to criminal prosecution.\textsuperscript{27} If the food composition is

\begin{thebibliography}{100}
\bibitem{20} See id.
\bibitem{22} Id.
\bibitem{24} See id. at 270 (quoting Statement of Policy: Foods Derive from New Plant Varieties, 57 Fed. Reg. 22,984, 22,990 (May 29, 1992)).
\bibitem{25} See Hamilton, supra note 22, at 98.
\bibitem{27} Id.
\end{thebibliography}
significantly different from the food that it was derived from or if it poses a health threat, the FDA will require labeling of the GM foods.28

Although the “Right to Know” legislation was common, “the Genetically Engineered Food Right to Know Act has failed to gain any traction in Congress despite repeated introduction in both the House and Senate.”29 “[I]n 2000, a federal district court concluded that the [FDA] has limited authority to mandate labeling when the sole justification is consumer demand.”30 In 2006, the United States did not have any food labeling laws based solely on the consumer’s right to know.31 At the time of this article, the current regulations have more or less stayed the same and will be discussed in further detail infra.

A. The Current United States Regulations

"[The] regulatory policies in the United States [were] intended to be based on scientific understanding of the nature of biotechnology products and optimal practices for their safe use.”32 The governing policy for GM regulation is found in the Coordinated Framework for the Regulation of Biotechnology (the Framework).33 In 1986, the White House Office of Science and Technology Policy adopted the Framework to address the growing biotechnology industry in the United States.34 “The Framework was designed to institute a ‘comprehensive federal regulatory policy’ for GM research and products and specified that GM products would be regulated under then-existing laws and regulations instead of developing new laws to address the new technology.”35 The government concluded that “GM products [were] not fundamentally different from non-GM products . . . [and] the final product of biotechnology should be regulated rather than the process of creating GM products.”36 However, there is no single agency or law that governs GM organisms.37

The Framework established that three federal agencies would be primarily responsible for overseeing GM products: (1) the FDA, (2) the United States Environmental Protection Agency (“EPA”), and (3) the USDA.38 The EPA evaluates “whether a [genetically engineered] ("GE") plant is safe for the environment,” the USDA evaluates “whether the plant is safe to grow,” and the FDA evaluates “whether the plant is safe to eat.”39 “[T]he FDA, EPA, and USDA each regulate [GM] foods by
applying the traditional procedures adopted from their respective authorizing statutes.”

1. The Food and Drug Administration

The FDA regulates modified food in accordance with the Federal Food, Drug, and Cosmetic Act ("FDCA") and the Public Health Service Act ("PHSA"). The FDA has a "statutory duty to regulate food labeling, food additives, and adulterated foods." Under federal law, the FDA may require specific labeling if the label is misleading or if the absence of labeling would be misleading. The FDA defines genetic modification as the alteration of a plant using any technique, new or traditional. The FDA is to "ensure the safety of most domestic and imported foods in the U.S. market," with the exclusion of meat and poultry, as the USDA regulates those. A key factor in determining whether to include certain facts on a label is whether the facts are material. Food may be considered misbranded if the absence of labeling "fails to reveal facts material . . . with respect to consequences which may result from the use of the [food]." However, the FDA does not require that GM ingredients be labeled on food packaging "because GM plant food is presumed by FDA regulations to be bioequivalent to traditional plant food."

By FDA regulations there is no difference between GM foods and traditional plant foods. This means both are regulated as traditional plant foods, and thus manufacturers of GM foods are not required to test their products for human consumption, obtain premarket approval from the FDA, or list GM ingredients. The FDA also does not perform safety tests involving feeding or consumption of the genetically engineered product and does not require the new GM foods to have premarket approval. "The FDA does not consider genetic engineering to be material information . . . " because the FDA "was unaware of any way in which foods from GMOs ‘differ in any meaningful or uniform way, . . . or present any different or greater safety concerns than foods developed [by traditional methods]."

40. Francer, supra note 24, at 267.
41. Ellison, supra note 9, at 351.
42. ANGELO, supra note 7, at 100.
43. Id. at 110.
44. FOOD AND DRUG ADMINISTRATION, Statement of Policy: Foods Derived from New Plant Varieties 57 FED. REG. 22, 984 n.3 (1992)
45. Ellison, supra note 9, at 351.
46. Thue-Vasquez, supra note 19, at 89.
49. Id. at 221.
50. Ellison, supra note 9, at 351.
51. Thue-Vasquez, supra note 19, at 89.
52. Id. (quoting Statement of Policy: Foods Derive from Plant Varieties, 57 Fed. Reg. 22,984, 22,991 (May 29, 1992)).
On January 4, 2011, President Obama signed the Food Safety Modernization Act ("FSMA"), which enlarged the powers of the FDA "to inspect plans and order recalls of tainted foods." The purpose of the FSMA is to provide a more rigorous and proactive policy when dealing with contamination of food by giving the government the ability to trace and recall contaminated foods. The FSMA requires that food producers develop food safety plans that will include "identifying potential risks of contamination or other hazards, and identifying the mechanisms through which those risks would be controlled." The FSMA’s key goals are: "preventive controls, inspection and compliance, imported food safety, response and enhanced partnerships."

2. The United States Department of Agriculture

"[The] USDA is the major oversight agency for GM plants and has primary authority over all GM plants except those that are pest-protected." The primary authority comes from the Plant Protection Act ("PPA"). The USDA’s primary function is to approve the testing of genetically engineered plants and the commercialization of agricultural crops that contain GMOs. The method through which the USDA regulates GMOs is through the Animal Plant Health Inspection Service ("APHIS"), which is responsible for issuing permits for the "import, interstate movement, and field testing of genetically altered plants, microorganisms, and invertebrates." The APHIS has relaxed regulatory procedures because the agency has determined that GM plants are generally safe. However, the new regulations provide that most of the GM plants are to be introduced under the "simplified notification procedure."

3. The Environmental Protection Agency

"The Environmental Protection Agency becomes involved with GMOs if the product is a bio-pesticide." The EPA has the authority to regulate pesticide use under the Federal Insecticide, Fungicide, and Rodenticide Act ("FIFRA"), which means that the pesticides need "to be registered with EPA prior to their use or sale."
When registering with the EPA, the "applicant must demonstrate a lack of unreasonable adverse risk to man or the environment." The EPA mainly regulates the pesticides that are contained in or on foods.

IV. THE EFFECTS ON THE ENVIRONMENT AND HUMANS

A. The Effects on the Environment

"[T]he most prominent environmental concerns relate to (1) weeds and the ability for GM crops to become weeds or for wild weeds to become "superweeds"; (2) insect resistance to [Bacillus thuringiensis (Bt)] crops and the creation of "superbugs"; (3) reduced biodiversity; and (4) effects on nontarget organisms." Plants with resistance to herbicides, or superweeds, may be created when related GM crops outcross or cross-pollinate. Cross-pollination is the process by which pollen is transferred from one plant to another, through which a transfer of genes occurs within a related plant species. GM plants have the potential to out-cross (with related species) and potentially contribute to the creation of new weeds or "superweeds". Superweeds are weeds that have developed a resistance to herbicides, and make such weeds more difficult to control. "Even without any genetic out-crossing, plantings of GM plants that are tolerant of a particular herbicide can have the effect of creating superweeds where widespread application of that herbicide causes weeds to develop their own tolerance, and makes the herbicide ineffective against those weeds." The problem that persists is that a weed species may develop a resistance to glyphosate. Thus, the acres of crops that have been infested with the weeds have reduced yields and end up costing farmers in added labor and chemicals that are used to combat the weeds.

B. Super Bugs

"[I]nsect-resistant GM plants may cause target insects to develop a resistance to the toxin produced in the GM plant and become a 'superbug.'" Insect-resistant plants continually produce toxins, so pest species are continuously exposed to

65. Id.
66. Ellison, supra note 9, at 351.
67. ANGELO, supra note 7, at 97.
68. Id.
69. Id.
70. See Montgomery, supra note 16, at 358.
71. See id.
72. Id.
73. See id.; see also Glyphosate General Fact Sheet, NAT’L PESTICIDE INFO. CENTER, http://npic.orst.edu/factsheets/glyphogen.html (last visited Dec. 29, 2014) (explaining that Glyphosate is an herbicide and is applied to the leaves of plants to kill both broadleaf plants and grasses, and Glyphosate is a non-selective herbicide that prevents plants from making certain proteins that are needed for plant growth).
74. See Montgomery, supra note 16, at 358.
75. ANGELO, supra note 7, at 98.
these toxins, which can lead to rapid development of resistance by the insect to the introduced toxin." As a result, "[s]ome pest species have already developed resistance to the commonly introduced Bacillus thuringiensis (Bt) toxin." "Plants are now being developed to produce multiple toxins instead of only Bt in order to help 'delay' the development of resistance by insects to GM crops." However, this "may also lead to increased pesticide applications and the use of stronger chemicals to combat pests that have developed resistance." Unfortunately, "[r]isk assessments are inherently limited because most environmental risks are best assessed after harm has occurred . . . ."

C. Reduced Biodiversity

The "cultivation of GM crops and other plants could lead to decreased genetic diversity" and "could reduce agrobiodiversity" by promoting crop uniformity." "Contamination of wild and conventional relatives due to outcrossing could change the makeup of plant communities and reduce overall genetic diversity." "Introduction of GM herbicide-resistant crops may reduce weed species diversity and ecosystem complexity on GM fields and neighboring areas." Although there is uncertainty regarding this issue, GM plants have the potential to adversely affect non-target species due to toxicity or secondary effects." The "contamination of wild and non-GM relatives could change the makeup of plant communities and reduce genetic diversity." "GM plants and plant litter can influence the composition of microbial communities, which [in turn will] affect soil health and ecosystem functioning."
D. Humans

"The human health risks are mainly toxicity and allergenicity."\textsuperscript{88} Allergenicity is the "tendency to provoke an allergic reaction."\textsuperscript{89} "Different proteins cause allergic reactions in people, so there is a concern that inserting novel genes . . . into a plant could trigger allergic reactions."\textsuperscript{90} The concern is that the GMO foods that contain new allergens could "upset the natural balance of microorganisms that [currently] live in the human digestive system" and cause a potential health risk.\textsuperscript{91} Such allergic reactions can be caused by genetic material "from a source that is unknown to the human diet or by [the] use of genetic material from a known allergen" (e.g. some kind of nut) to produce a crop, where consumers have no reason to suspect the food they are eating contains a known allergen that may cause them to suffer a serious allergic reaction.\textsuperscript{92} To eliminate the risk of allergic reactions, appropriate labeling would help advise consumers about the source of the genetic material contained in a GMO.\textsuperscript{93}

Although the debate continues as to whether GMOs are safe, some scientists, like Dr. Arnpad Pusztai, challenge the claim that GMOs are safe.\textsuperscript{94} Dr. Pusztai conducted a study where he fed GM potatoes to rats and he "discovered internal organ damage, weight loss, and immune-system problems."\textsuperscript{95} Additional French studies have also been conducted in rats that were fed GM corn, or exposed to the weed killer, Roundup.\textsuperscript{96} The rats that were feed the GM corn suffered tumors and multiple organ damage, including severe liver and kidney damage.\textsuperscript{97}

The "consumption of new toxins or increased levels of naturally occurring toxins" is another risk from consuming GM crops.\textsuperscript{98} Another concern is that the GM crops may contain fewer nutrients when compared with non-GM crops.\textsuperscript{99} However, "the biotech industry claims that 15 years of widespread consumption with no widely reported health problems suggests that the risks are 'overhyped.'"\textsuperscript{100} Consumers are still worried about health effects even though there have been no confirmed cases of human diseases or illnesses caused by GM foods.\textsuperscript{101} The long-term health effects are

\textsuperscript{88} Id. at 97.
\textsuperscript{89} Vecchiarelli, supra note 4, at 220.
\textsuperscript{90} ANGELO, supra note 7, at 97.
\textsuperscript{92} ANGELO, supra note 7, at 97.
\textsuperscript{93} Id.
\textsuperscript{94} See Fredland, supra note 91, at 188.
\textsuperscript{95} Id.
\textsuperscript{97} Id.
\textsuperscript{98} See Montgomery, supra note 16, at 357.
\textsuperscript{99} Id.
\textsuperscript{100} Id.
\textsuperscript{101} Id.
G.M.O. Labeling

still unknown because grocery stores have recently started to carry more GM food products.\textsuperscript{102}

"In June 2012, the American Medical Association [("AMA")]] released the results of a study on the impact of genetically engineered food on human health."\textsuperscript{103} The AMA concluded that "over the past 20 years of human consumption of genetically engineered foods, 'no overt consequences on human health have been reported and/or substantiated . . . ."\textsuperscript{104} The report also recognizes the "potential for allergenicity, horizontal gene transfer, and toxicity."\textsuperscript{105} "Horizontal gene transfer refers to the transfer of genetic material from one organism to another."\textsuperscript{106} The fear is that "when a human consumes a food that is engineered to express antibiotic-resistant markers, that individual will then take up the antibiotic-resistant marker through enteric bacteria and the marker will become integrated, ultimately creating bacteria in the individual that is resistant to certain antibiotics."\textsuperscript{107} Naturally, consumers have the mentality that just because one cannot see the effects it has on the human body instantly, it does not necessarily mean that the effects are not happening. While there have not been any human health diseases or illnesses that have been reported as a result from consuming GM foods, it is recognized that the potential for allergenicity and toxicity does exist.\textsuperscript{108} Regardless, consumers are still concerned about consuming something that has been modified, and also feeding their children modified products.\textsuperscript{109} By having a label on a product that specifies whether it contains GMOs or not, it would give the consumer an opportunity to research the specific GMO in the product and make an informed decision of whether to purchase it or not.

V. THE NEED FOR MORE REGULATION AND MANDATORY LABELING

A. United States Regulations

"The United States current regulatory system for biotechnology dates back to the Reagan Administration."\textsuperscript{110} The system was not created "from careful, proactive government decision making, but in response to a lawsuit brought against the federal government over the first field trails of a [GMO]."\textsuperscript{111} The United States has the stance

\textsuperscript{102} Id.
\textsuperscript{103} Vecchiarelli, supra note 4, at 219.
\textsuperscript{105} Id.
\textsuperscript{106} Id. at 220.
\textsuperscript{107} Id.
\textsuperscript{110} Bratspies, supra note 19, at 927.
\textsuperscript{111} Id.
that “GM foods are safe if testing reveals no material differences in quality, safety, or nutritional composition of the foods.” The United States developed a regulatory system built on four key principles: “[1] biotechnology poses no unique risks; [2] the products of biotechnology should be regulated, not the process; [3] existing laws should be used to regulate the products of biotechnology (no new legislation was needed); and [4] any gaps should be addressed through coordination among agencies and designation of lead agencies as appropriate.” However, this approach “did not adopt any new laws directly targeting regulation of this new technology.... [which] means there is no unified statutory authority for regulating these [GM] crops, and no regulator with an unambiguous regulatory mandate.”

Public opinion polls have been conducted and “consistently reveal that a vast majority of U.S citizens support GM food ingredient labeling.... [however,] there has been no proposal by the FDA to establish labeling regulations....” However, there are a few counties in California that have successfully banned GM crops, and in San Juan County, Washington, there is a bill to ban the growth of genetically modified organism within the county. As discussed infra, organic foods are held to certain regulations and requirements before a product can be deemed “organic” or even contain the word “organic.”

1. Organic Food Regulations

The Organic Foods Production Act was established in 1990 by the National Organic Program (“NOP”) and was created by the USDA. “The NOP regulates the organic food industry to ensure that the products that are labeled as organic meet rigorous standards.” “The label ‘organic’ is associated with food that has not been exposed to high levels of pesticides; the fact that this label also ensures that the food is not [GM] is not general knowledge.” If a product is labeled, sold, or represented as “100 percent organic,” then the “raw or processed agricultural product... must contain (by weight or fluid volume, excluding water and salt) 100 percent organically produced ingredients.” Organically produced ingredients are calculated by:

(1) dividing the total net weight (excluding water and salt) of combined organic ingredients at formulation by the total weight (excluding water and salt) of the finished product. (2) Dividing the fluid volume of all organic ingredients (excluding water and salt) by

112. Coburn, supra note 3, at 316.
114. Id. at 930.
115. Van Tassel, supra note 48, at 228.
117. Vecchiarelli, supra note 4, at 231.
118. Id.
119. Id. at 237.
120. 7 C.F.R. § 205.301(a) (2013).
the fluid volume of the finished product (excluding water and salt) if the product and ingredients are liquid . . . (3) For products containing organically produced ingredients in both solid and liquid form, dividing the combined weight of the solid ingredients and the weight of the liquid ingredients (excluding water and salt) by the total weight (excluding water and salt) of the finished product.121

One of the handler’s duties includes affixing the label on the consumer package, and determining the percentage with the certifying agent of the handler.122 "The handler may use information provided by the certified operation in determining the percentage."123 If the product is labeled as “organic,” the agricultural product “must contain (by weight or fluid volume, excluding water and salt) not less than 95 percent organically produced raw or processed agricultural products.”124 Agricultural products “containing between 70 and 95 percent organically produced ingredients may use the phrase, ‘made with organic (specified ingredients or food group(s))’, to modify the name of the product in retail display, labeling, and display containers.”125 However,

[a]n agricultural product with less than 70 percent organically produced ingredients may only identify the organic content of the product by: (1) Identifying each organically produced ingredient statement with the word, “organic,” or with an asterisk or other reference mark which is defined below the ingredient statement to indicate the ingredient is organically produced, and (2) If the organically produced ingredients are identified in the ingredient statement, displaying the product’s percentage of organic contents on the information panel.126

If the product contains less than seventy percent organically produced ingredient, it “must not display: (1) The USDA seal; and (2) Any certifying agent seal, logo, or other identifying mark which represents organic certification of a product or product ingredients.”127 So while there are regulations as to what requirements must be met in order for a product to be deemed organic or to contain the word “organic,” there are yet to be any formal regulations regarding GM ingredients in the United States, unlike other countries.

B. Other Countries’ Regulations

European nations “regulate genetically-modified agriculture and agricultural products and motivated the European Commission (“EC”) to pass legislation requiring

121. Id. § 205.302(a)(1)-(3).
122. See id. § 205.302(c).
123. Id.
124. Id. § 205.301(b).
125. Id. § 205.309(a).
126. Id. § 205.305(a)(1)-(2).
127. Id. § 205.305(b)(1)-(2).
that genetically-modified material [that is contained in food] be labeled as such.”

“[T]he labeling of foods containing [GMOs] became mandatory in the European Union” in April 2004. Many parts of Europe have passed legislation regulating, and in some cases banning, the production of food containing GMOs.

“Austria and Luxembourg have prohibited the production of the three strains of EC-approved genetically-modified maize”; Norway has banned “all products from crops containing antibiotic resistance marker genes”; Britain has a ban on “insect-resistant crops and strict scrutiny of any others”; France has adopted a “‘go slow’ policy for approving any new varieties for sale”; and the coalition government in Germany has agreed to labeling requirements. The European Commission not only wants “to inform consumers of ‘any characteristic or food property’ that ‘renders the food or ingredient no longer equivalent to the existing food or food ingredient,’” but also wants to protect human health and the environment.

“The European Union requires labeling of [genetically modified foods] unless the protein or DNA resulting from genetic engineering has been destroyed by successive stages of processing.” The European Union has the stance that “in order to protect the health of its people and its environment, the marketing and distribution of GM foods must be strictly regulated.” However, the United States is one of the largest producers of GM foods in the world and argues that “GMO resisters are using flimsy science to support an unwarranted fear.”

New Zealand and Australia have decided that all GM crops should be labeled so consumers have the ultimate choice on what to buy. “[New Zealand] regulates GMOs in both food and drugs, making it GMO specific legislation, rather than [adopting] old legislation to the issues surrounding GMOs.” New Zealand and Australia have joined together to form Food Standards Australia New Zealand (“FSANZ”), which is controlled by the Ministers of Health. FSANZ handles “developing food standards applicable to both nations” and “creates a uniform standard rather than setting a floor and allowing member states to enact stricter regulations.”

“India and Norway now mandate labeling for all genetically modified food, while Japan only requires labeling for some genetically modified foods.” “Brazil,
Argentina, and Chile have sided with the United States against mandatory labeling of genetically modified food, but the South American nations are also sensitive to the views of the [European Union], often approving GM crops the day after the [European Union] does so. So, unlike many other countries, the United States does not require mandatory labeling of genetically modified foods, which also affects the environmental justice aspect of consumers.

VI. ENVIRONMENTAL JUSTICE AND GENETICALLY MODIFIED ORGANISMS

"[T]he environmental justice movement has developed a framework to address disparate impact, unequal protection, and environmental discrimination." "In broad terms, environmental justice requires that environmental enforcement, compliance, policy formulation, and decision-making be addressed through a participatory, democratic process." "The core of environmental justice involves disproportionate environmental harm suffered by low-income communities of color." "Environmental justice seeks to ‘make environmental protection more democratic’ and to ‘inject fairness’ into what has been historically ‘a discourse oriented toward the negotiated tradeoff of technical requirements.’" The framework of environmental justice includes the principle of “the right of all individuals to be protected from environmental degradation” and it “allows disparate impact and statistical weight, as opposed to ‘intent,’ to infer discrimination.” The goals include “greater participation by minority communities in environmental decision-making and a redistribution of environmental burdens between minorities and non-minorities.”

The EPA’s working definition is similar, stating that “[n]o racial, ethnic or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from the operation of industrial, municipal and commercial enterprises and from the execution of federal, state and local, and tribal programs and policies.” The two primary categories of environmental justice are distributive and political process. Distributive deals with the concerns “raised by the disproportionate burden of environmental hazards or undesirable land uses borne by low-income and minority communities.” The second form of environmental

141. Id.
143. Id.
145. Lisa A. Binder, Religion, Race, and Rights: A Rhetorical Overview of Environmental Justice Disputes, 6 Wis. ENVTL. L.J. 1, 4 (1999).
146. Id. (internal quotation marks omitted).
147. Id.
148. Id. (internal quotation marks omitted).
150. Id.
justice focuses on the political process, and addresses the “discriminatory manner in which decisions with environmental consequences are made.”

While Americans and Europeans are fortunate in “that they have not experienced wide scale hunger in several generations. . . . [the] reality is that, despite improved production and the process of globalization, a large number of people throughout the world [will still] go hungry each day.” GM crops may produce higher and more reliable yields at a cheaper cost than [their] non-GM counterparts, and thus have the “potential to help reduce domestic and international hunger.” GMO crops may contain higher levels of vitamins and minerals, “have a longer shelf life,” may appear fresher, and may contain lower levels of pesticide residue than non-GM crops. Not only may are those of lower and/or limited income unaware of the GM substances that make up the food that they are consuming, but also many other consumers in the United States are unaware.

Government regulations exist to protect public health by requiring vulnerable consumers be informed. Normally, consumers are able to protect themselves against known and common risks that may be associated with different foods based on common knowledge and customs. However, without the proper labeling of GM foods, consumers cannot properly protect themselves or their families.

“In 2002, the African nations of Zambia and Uganda, amongst others, initially rejected an offer of food aid from the [United States] because it contained GM maize.” “Twenty-four African countries [once] issued a statement objecting strongly that the image of the poor and hungry from our countries is being used by giant multinational corporations to push a technology which is neither safe, environmentally friendly, nor economically beneficial to us.” “A common advertising message from the genetics industry is the desperate need for genetic engineering to feed the growing world population.” To address the problem of hunger, the issue is “figuring out how to provide more and cheaper food to the world’s population.” However, “world hunger is an access and distribution problem, not a production problem.” The assumption has been that “the problem is food shortages rather than unequal distribution [which] leads to the conclusion that producing more for less is the answer to the problem of world hunger.”

151. Id.
152. Blaustein, supra note 138, at 373.
153. ANGELO, supra note 7, at 95.
154. Id. at 95-96.
155. See Van Tassel, supra note 48, at 221.
156. Id. at 238.
157. See id.
158. See id.
160. Thue-Vasquez, supra note 19, at 116 (internal quotation marks omitted).
161. Id.
163. Thue-Vasquez, supra note 19, at 116.
164. Ehrenreich & Lyon, supra note 162, at 8.
A. Government Assistance for Purchasing Food

The Supplemental Nutrition Assistance Program ("SNAP") provides benefits to low-income people that help them buy food to improve their diets. To be eligible for SNAP [the] households must meet certain resource and income limits. The household's benefit amount is "based on the [United States] Department of Agriculture's Thrifty Food Plan, which is an estimate of how much it costs to buy food to prepare nutritious, low-cost meals for your household." The household's net monthly income "is multiplied by .3, and the result is subtracted from the maximum allotment for the household size to determine the household's allotment." The gross income eligibility standards for households who apply for the SNAP program must be "130 percent of the Federal income poverty levels for the 48 contiguous States and the District of Columbia."

SNAP is designed to help low income households purchase groceries. However, when an individual has a set amount of how much to spend on food, the healthiest choice may not always be the first choice because of price. Since the eligibility standard is based on the household's income, which is compared to the poverty level, the household may not be educated on GMOs and may not be able to fully appreciate the risks that are in the GM food. Currently, it is not required that manufacturers label if there are GMOs in the food. However, many organic and non-GMO manufacturers will mention on their labels that it does not contain GMOs or that it is organic. Without proper labeling, consumers are unable to make an informed decision on whether they want to take the risk of ingesting GMOs. Without labeling, the lower income families have no information to base their decision on, and do not have a way of informing themselves of the potential risk. However, companies

166. Id.
170. See Dave Mihalovic, More Educated Parents Less Likely to Vaccinate and Feed Children Sugar and GMO Foods, PREVENTDISEASE.COM (Mar. 28, 2013), http://preventdisease.com/news/13/032813_More-Educated-Parents-Less-Likely-To-Vaccinate-and-Feed-Children-Sugar-and-GMO-Foods.shtml (finding that there is a correlation between the education level of the parents that has an influence on what their children are fed, as "parents with low and medium levels of education eat fewer vegetables and fruit and more processed foods including genetically modified foods").
171. P. BYRNE, D. PENDELL & G. GRAFF, COLO. STATE UNIV., LABELING OF GENETICALLY MODIFIED FOODS (2014), available at http://www.ext.colostate.edu/pubs/foodnut/09371.pdf ("[m]andatory labeling would allow consumers to identify and steer clear of food products that they wish to avoid."); see also Naomi Starkman, New Consumer Reports Poll Shows Consumer Demand for Strong Federal Standards for Genetically Engineered Food, CONSUMERS UNION (June 9, 2014), https://consumersunion.org/news/new-consumer-reports-poll-shows-consumer-demand-for-strong-federal-standards-for-genetically-engineered-food/ (indicating that a poll was conducted in 2014 that showed that 92% of consumers believed that genetically engineered food should be labeled before sold and 72% of consumers polled believed that it is crucial for them to avoid genetically engineered ingredients when purchasing food).
have said that if consumers disagree for ethical or socioeconomic reasons with the consumption of a product, then the consumer can choose not purchase the product.\textsuperscript{172} Mandatory labeling would help “disseminate[] information much more reliably because the presence or absence of the labeled characteristic is immediately apparent to a consumer in every case.”\textsuperscript{173}

“As food quality declines (due to industrialized production), eating well becomes more and more a matter of class privilege.”\textsuperscript{174} While poor diet is often attributed to poor personal eating habits, inadequate consumption is better understood as a function of economic status – a product of poverty.”\textsuperscript{175} “[I]t has become clear in recent decades that there is an inverse relationship between the efficiency of food production and the quality of foods produced.”\textsuperscript{176} In a study conducted by biochemist Donald Davis at the University of Texas, it was found that forty-three fruits and vegetables’ nutrient value had declined in recent decades while farmers have been planting crops designed to improve other traits, especially yield.\textsuperscript{177} “Of [thirteen] nutrients examined in the study, six have declined in the crops studied - some by as much as 38 percent” and it was concluded that “the average vegetable found in today’s supermarket is anywhere from 5% to 40% lower in minerals than those harvested 50 years ago.”\textsuperscript{178}

“Healthy eating is often depicted as first-and-foremost about individual decision making and self discipline.\textsuperscript{179} “Informed and health-conscious consumers will eat well and be healthy, while those who are more ignorant or self-indulgent” will eat unhealthy.\textsuperscript{180} “Poor people in particular are seen as preferring to eat unhealthy foods, needing to change their diets, and less informed about and/or receptive to modern nutritional information.”\textsuperscript{181} Thus, “a central way to address poor diets is to improve the dissemination of information so that consumers will make better choices.”\textsuperscript{182} Another view is that “unhealthy eating is primarily a product of inadequate income, not ignorance.”\textsuperscript{183} The consumption of unhealthy foods can best be improved by “increasing food quantity and consumer information,” and most importantly, “by addressing the effects of economic disparities on food consumption” by increasing consumer access to healthy food.\textsuperscript{184}

\textsuperscript{172} See Dorothy Du, Note, Rethinking Risks: Should Socioeconomic and Ethical Considerations Be Incorporated into the Regulation of Genetically Modified Crops?, 26 HARV. J.L. \\& TECH 375, 384-85 (2012).
\textsuperscript{173} Id. at 386.
\textsuperscript{174} Ehrenreich \\& Lyon, supra note 162, at 26.
\textsuperscript{175} Id.
\textsuperscript{176} Id. at 27.
\textsuperscript{177} Id. at 28.
\textsuperscript{178} Id. (internal quotation marks omitted).
\textsuperscript{179} Id.
\textsuperscript{180} Id. at 28-29.
\textsuperscript{181} Id. at 29.
\textsuperscript{182} Id.
\textsuperscript{183} Id. at 31.
\textsuperscript{184} Id.
“Industrial farming of vegetables, fruits, and livestock significantly diminishes the nutritional value of these foods while raising levels of toxicity.”185 “Harmful chemicals are routinely applied to foods to increase shelf-life,” but it often alters the taste and appearance, “and these dangers are often found in products marketed specifically to children.”186 Children are particularly susceptible to the effects of GM foods as they are still young and their bodies are at the stage where it is being influenced the most.187 Children are also more susceptible to allergies and nutritional problems.188 Healthier and cleaner products are available, however, at prices out of reach for the average consumer, much less those on low incomes.189 Moreover, “governmental subsidy programs make the most harmful foods more accessible (e.g., corn syrup, a harmful sweetener that is omnipresent in the diet of the United States), but do not cover the healthiest foods (such as vegetables, whole grains, and fruits).”190

The decision to purchase non-GMO products becomes difficult as there is no specific requirement for companies to label the product as containing GMOs. Whole Foods Market is known for selling natural and organic foods.191 However, even Whole Foods Market has acknowledged that it is difficult to stock only non-GMO products without the proper federal government mandate labeling of GMO ingredients.192 A 2014 Market Lifestyles of Health and Sustainability MamboTrack Natural and Organic Shopper survey found that eighty percent of health-conscious consumers reported that they seek out products that do not have GMOs.193 While there are benefits to GM foods, it is important to discuss earth jurisprudence because it is necessary to consider and analyze current laws to ensure their purpose serves the well being of those who occupy the Earth.

VII. EARTH JURISPRUDENCE AND HOW IT ALL AFFECTS ONE ANOTHER

“Earth jurisprudence is an emerging legal theory based on the premise that rethinking law and governance is necessary for the well-being of Earth and all of its inhabitants.”194 “[It] is an inclusive and systems-based theoretical perspective that supports robust environmental regulation and recognizes a kinship with the field of

185. Id. at 32.
186. Id. at 32-33.
188. Id.
189. Ehrenreich & Lyon, supra note 162, at 33.
190. Id.
environmental ethics.” Earth jurisprudence is an emerging field that seeks Earth-centered approaches to law and governance for the well-being of the planet and future generations.

“Earth jurisprudence draws forth solutions from within as well as beyond existing law.” By shifting to Earth-centered approaches to law and governance, humanity takes its proper place as a member of the Earth community.

“Earth jurisprudence is a developing philosophy based on the insight that a sustainable system of law and governance must be Earth-centered.”

“GMOs will inevitably impact the environment; therefore, legislation should frame ‘risk assessment and risk management . . . to optimize the benefit of environmental introductions of such products while simultaneously minimizing any detrimental consequences.’ The GMO regulations could resemble legislations concerning chemicals in the environment. The main constitutional concern Congress would face if it decided to mandate labeling of GM food products would be violating the First Amendment of the manufacturers.

The First Amendment protects commercial speech. However, the Supreme Court recognizes that commercial speech is fundamentally different from other kinds of speech because it is motivated by profit, and therefore, the Court applies a less-than-strict scrutiny to commercial speech. The Court developed the test for commercial speech in Central Hudson Gas & Elec. Corp. v. Pub. Serv. Comm’n of New York, where courts must determine the following: (1) whether the speech is concerning lawful activity and is not misleading, (2) whether the government’s interest is substantial, (3) whether the regulation directly and significantly advances the governmental interest asserted, and (4) whether the regulation is not more extensive than is necessary to serve that interest.

In Int’l Dairy Foods Ass’n v. Amestoy, dairy manufacturers challenged a Vermont statute mandating labeling of milk containing the hormone rBST. The district court denied the dairy manufacturers’ motion for a preliminary injunction of the law, but the Second Circuit reversed, finding that the manufacturers would likely
have success on the merits because the government did not have a substantial interest in requiring [the] regulation, and thus, the law would fail [under] the second part of the Central Hudson test." The court noted that the only reason the government was mandating labeling was because of "consumer curiosity," which the court said was not enough to overcome the First Amendment and there was no indication of any real harm.

However, the dissenting opinion by Judge Leval found several flaws in the majority's reasoning. Judge Leval stated that the governmental purposes for such labeling extended beyond just consumer curiosity, but more towards including the consumer on "possible adverse health affects, health risks to cows, the economic impact on small dairy farmers from the increase in milk production, and philosophical objections to biotechnology made by the public." Judge Leval also stated that although the FDA did not find any health risks that did not necessarily mean potential health risks of rBST did not exist. So while the government may force companies to label for various reasons, the government must have statutory authority and be consistent with the First Amendment.

VIII. THE POTENTIAL FUTURE OF GMOS

While there are potential benefits of GM crops, there is still insufficient scientific data to support a conclusion that GM crops are safe for human consumption. "A major health concern with GM crops is . . . [that they may] increase allergies; allergenic qualities from certain species may be transposed into GM crops that are then sent to market without any warning labels." Allergy studies require human testing, which can often be difficult and costly to conduct. "GMO legislation should take into account the unique risks posed by GM crops, namely the unknown health effects . . . ." Although it may be too costly to expect government to conduct independent research on every product to determine the potential health effects, it may help alleviate consumer concerns that scientists' data is biased.

As to the human testing, when it deals with allergies and health effects, a college research program should be implemented to help reduce the costs the government would incur if research was funded and conducted by the government. By having a college research program conduct the research it would also alleviate the concern by consumers that the findings are biased because a cor may be paying for a
certain result. The research conducted on humans as to the consumption of GMO foods are limited and once more testing is conducted, consumers may feel more comfortable with the results, as opposed to relying only on limited research and unanswered questions when it deals with their bodies and the possible effects.

Although there are arguments for and against the production of GM foods, the issue of mandatory labeling to inform consumers should be addressed and proposals should be enacted. At the time of this article, GMO food labeling proposals are being introduced in Annapolis, Maryland.\footnote{220} The bills would require processed food package’s front or back to be labeled if it “contains more than 0.9 percent by weight of genetically modified ingredients.”\footnote{221} A concern that Maryland’s Farm Bureau government relations director has is that by labeling the GMO products, it would negatively impact Maryland agriculture because people “will think it’s bad and go buy something that’s not labeled.”\footnote{222}

“In 2012, the American Association for the Advancement of Science Foods issued a statement saying that mandating labels on modified foods could ‘mislead and falsely alarm consumers.’”\footnote{223} “The association says labeling efforts aren’t motivated by science, but by misperceptions about food safety and efforts by some food manufacturers to gain a competitive advantage.”\footnote{224} However, based on a National Purchase Diary group study on GMO awareness, it was “found that 67% of all primary grocery shoppers are not willing to pay a higher price for non-GMO foods.”\footnote{225} Based on the number of people avoiding GMOs, seventy percent say it is because they are concerned with their health and well-being.\footnote{226} Based on that seventy percent, “[h]alf say they want to know what goes into their food, 36% are concerned about possible environmental impacts, and 30% do not want to support companies that use GMOs.”\footnote{227} The survey also found that while more than half of American consumers had expressed some level of concern about GMOs, many consumers were not able to clearly describe what GMOs were.\footnote{228}

One of the arguments against mandatory labeling is a fear that consumers would just not purchase the product because they may have the assumption that it is “bad”; at the same time, research found that consumers do assume that companies have “something to hide” if they are not openly justifying a position in favor of

\footnote{221. Id.}
\footnote{222. See id.}
\footnote{223. Kimberly Marselas, GMOs: To Label or Not to Label, LANCASTER ONLINE, http://lancasteronline.com/gmos-to-label-or-not-to-label/article_d9cf3efe-a624-11e3-81f5-0017a43b2370.html?mode=jqm (last visited Dec. 29, 2014).}
\footnote{224. Id.}
\footnote{225. Lukovitz, supra note 193.}
\footnote{226. Id.}
\footnote{227. Id.}
\footnote{228. See id.}
GMOs. As the research shows, most consumers do not really have a comprehensible understanding of what exactly are GM foods. For the companies that do use GMO in their products, it may be beneficial for the company to explain what a GMO is and if there are any effects when consumed. If the consumer is informed, the consumer is less likely to have the feeling that the company is hiding something because of the lack of information. To not disclose this information, that would be considered a material fact, could very well constitute an omission "regarding the nutrition of a product, which would be misleading to consumers, whose assumption is that the nutritional label contains all of the information necessary to make decisions regarding the effect of the food on their health."230

As of February 2014, California State Senator Noreen Evans introduced a new GMO labeling bill that “would require food sold in state grocery stores to be labeled if it contains genetically engineered ingredients.”231 “Sponsored by a coalition of 17 environmental, consumer, food groups, and small businesses called Californians for GE Food Labeling, [this bill] provides more protections for farmers and retailers, and places limits on potential litigation.”232 The legislation’s purpose is to provide more clarification on who is responsible for labeling or mislabeling.233 “The retailer is only responsible for labeling fresh produce at point of purchase. . . . [and] farmers are not liable unless they have intentionally misled retailers.”234

In 2012, California voters turned down a labeling ballot that cost the food industry forty-six million dollars in campaign funds – five times more than the amount spent by the measure’s proponent.235 However, in a vote of five to two, the Health Committee approved Senate Bill 1381, “which would require labeling of genetically engineered bulk and packaged foods beginning in 2016.”236 “The proposal defines genetic engineering as the manipulation of genes in a laboratory to make them resistant to certain pesticides or diseases.”237 Those in support of labeling say that such foods could cause allergic reactions, asthma, and autoimmune deficiencies.238 However, “[g]rowers, the grocery industry and many scientists counter that genetic engineering boosts production of foods that are no different – and no more dangerous – than non-

229. See id.
230. Spence, supra note 202, at 1036.
232. Id.
233. Id.
234. Id.
236. Id.
237. Id.
238. Id.
engineered ones." California Senate Bill 1381 does not declare whether genetically modified foods are good or bad, but simply requires labeling.

California Senate Bill 1381 states that “[t]his bill, beginning January 1, 2016, would require that any food, except as provided, offered for retail sale in the state be considered misbranded if it is entirely or partially genetically engineered, as defined, and that fact is not disclosed in a specific manner.” The bill would “impose these labeling requirements on manufacturers and retailers, as defined, of the commodities and foods. Because this bill would create new crimes by expanding the number of foods that could potentially be misbranded, the bill would impose a state-mandated local program.” “The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state” and the statutory provisions establish the reimbursements. However, the bill “would provide that no reimbursement is required by this act for a specified reason.”

The Legislature provides that California consumers have the right to know whether the foods they purchase were produced with genetic engineering, thus ensuring consumers are able to make informed purchasing decisions. It was also found that based on polls, more than ninety percent of people want to know, for various reasons (health, economic, environmental, religious, and ethical), if they are purchasing foods that are genetically engineered; without the mandatory disclosure, consumers of those foods may be unknowingly violating their dietary and/or religious beliefs. The bill also makes clear that there are currently no federal or California labeling requirements, and not even the FDA requires labeling; in contrast, there are “64 countries, including three of California’s leading trading partners, Japan, China, and the European Union member states,” with laws mandating that foods produced through genetic engineering be labeled. The bill further discusses potential unintended consequences of manipulating genes through genetic engineering, as the results are not always predictable or controllable. California’s economic well-being is also discussed as preserving the identity, quality, and reliability of California’s agricultural products and exports is critical because in 2011, agricultural exports generated $16.8 billion in revenue (thirty-nine percent of total production), and mandatory identification would be a “critical method of preserving the economic value of exports or domestically sensitive markets with restrictions on, or prohibitions against, genetic engineering.”

239. Id.
240. Id.
242. Id.
243. Id.
244. Id.
245. Id. § 1(a).
246. Id. § 1(b)-(c).
248. See id. § 1(f).
249. Id. § 1(j).
The bill also discusses the serious effects on the environment with regards to herbicide-resistant weeds, and these superweeds causing farmers to increase the amount and strength of toxic herbicides used because some genetically engineered produce are herbicide-resistant. Finally, the bill declares that “[t]he people of California should have the choice to avoid purchasing foods produced in ways that can lead to that environmental harm” and “labeling . . . can be implemented without substantial burden to either food producers or the government.”

As far as other states, Maine and Connecticut passed GMO labeling laws, however, “they will not go into effect until at least four neighboring states adopt the same requirements.” “Vermont has taken up the issue for the third consecutive year, and is now joined by Pennsylvania.”

Many companies are starting to phase out GMO ingredients found in their products. A few companies that have or are currently in the process of reformulating their ingredients include: Post, Ben & Jerry’s, Boulder Brands, and Target’s brand, Simply Balanced. “Chipotle has announced that it would begin phasing out [GM] ingredients this year, and Whole Foods has said it will require GMO labeling on all foods in its stores by 2018.” Additionally, one of America’s most well-known cereal companies, General Mills, recently changed the ingredients in their cereal, Cheerios, so as not include any GM ingredients. Although General Mills is saying that the oats used to make Cheerios do not contain any GMOs, the company made changes with respect to sourcing, and now only uses non-GMO pure cane sugar as opposed to beet sugar.

With pressure from consumers wanting to know what exactly they are ingesting, restaurants and corporations are slowly phasing out GM ingredients or
providing information regarding the contents of their products. Corporations have also been trying to be more open about GMOs and educate consumers.261

IX. CONCLUSION

In 2013, GMO crops were planted on about 169 million acres (which is equivalent to about 130 million football fields or about 264,023 square miles) in the United States.262 Judging from that number, it would be safe to say that GMO crops are not going anywhere anytime soon. There are both positives and negatives when it comes to GM foods; however, some consumers are still adamant about having labels on the products that they are purchasing so they can make an informed decision. The consumers who receive financial assistance when it pertains to food should be able to have the choice to make an informed decision as to whether they want to purchase GM products or organic products. This would be a balancing decision for consumers who receive financial assistance, as they will have to decide whether to stretch out the amount they have to purchase organic non-GM foods or to purchase the lower priced GM product and risk their health and/or their family’s health from any potential health effects from the GM product. Just because some consumers receive financial assistance for groceries does not necessarily mean that they are not entitled to consumption of healthy and non-GM products, and labels should be mandated so those consumers can decide for themselves, instead of having that decision made for them.