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Will Consumers be in the "Dark" about Labels on Genetically Engineered and Modified Foods?

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WILL CONSUMERS BE IN THE “DARK” ABOUT LABELS ON
GENETICALLY ENGINEERED AND MODIFIED FOODS?

Hilary Nat

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I. INTRODUCTION

In the 1900s, the United States began to sell genetically engineered foods¹ One of the first genetically engineered foods sold in the United

¹ Hilary Nat received her Juris Doctor from Thomas M. Cooley Law School. Her interest in biotechnology and consumer and regulatory affairs was the inspiration in writing this article. She would like to thank her family for their constant support.

States and approved by the Food and Drug Administration (FDA) was the Flavr Savr tomato.² The tomato's genetic structure was modified to prevent softening which allowed it to ripen after being picked.³ In the United States, statistics demonstrate that 92% of corn, 94% of soybeans, and 94% of cotton sold is genetically engineered.⁴ In addition, it is estimated that 75% of the processed foods sold in supermarkets around the United States contain ingredients that are products of genetic engineering.⁵

On November 19, 2015, the FDA granted AquaBounty Technologies approval to produce Aqua Advantage Salmon.⁶ This was the first genetically engineered animal approved for human consumption in the United States.⁷

The process of genetically engineering or modifying plants, crops and animals is a form of agricultural-biotechnology. People are concerned about whether genetically modified⁸ and engineered foods are truly safe to eat, and if by consuming them there will be future health consequences. Generally, people feel they have the right to know what is in the food they consume. As such, issues surrounding the labeling of genetically modified foods have been under debate in state governments and within the Federal Government.

States started responding to public concern over labeling genetically engineered and modified foods by trying to enact their own labeling laws. However, only a handful of states were successful in doing so. Congress tried blocking state laws from going into effect by trying to enact their own legislation. On July 29, 2016, President Obama signed Senate Bill 764⁹ which mandates the labeling of bioengineered foods but gives the

1. Gabriel Rangel, *From Corgis to Corn: A Brief Look at the Long History of GMO Technology* (Aug. 9, 2015), <http://sitn.hms.harvard.edu/flash/2015/from-corgis-to-corn-a-brief-look-at-the-long-history-of-gmo-technology/>.

2. G. Breuning and J.M. Lyons, *The Case of the Flavr Savr Tomato*, Calif. Agric. 54(4):6-7. (July-August 2000), <http://calag.ucanr.edu/Archive/?article=ca.v054n04p6#Calag-FullText>.

3. *Id.*

4. *About Genetically Engineered Foods*, CENTER FOR FOOD SAFETY, <http://www.centerforfoodsafety.org/issues/311/ge-foods/about-ge-foods#>

5. *Id.*

6. *FDA Has Determined That the Aqua Advantage Salmon is as Safe to Eat as Non GE Salmon*, USDA (Nov. 2015)

<http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm472487.htm#1>

7. Harold F. Upton and Tadlock Cowan, *Genetically Engineered Salmon*, CONGRESSIONAL RESEARCH SERVICE (Dec. 8, 2015)

<http://nationalaglawcenter.org/wp-content/uploads/assets/crs/R43518.pdf>

8. *Id.* at 3.

9. *Id.* at 10.

producers of these foods different labeling options. However, there are some concerns surrounding Senate Bill 764.

Part I of this Article will discuss what genetically engineered foods are. Part II will discuss why genetically modified foods are under debate. Part III provides a history of state and federal law regarding labeling of genetically modified and engineered foods. Part IV discusses the new labeling law and the concerns surrounding it.

II. GENETICALLY MODIFIED FOOD

Genetically modified foods are produced from organisms that have had changes in their DNA by use of genetic engineering.¹⁰ Genetic engineering refers to methods scientists use to introduce new traits or characteristics to an organism.¹¹ When genetic material is transferred from one organism to another, the process creates recombinant DNA.¹²

What is different about genetically engineered foods is the manipulation of genes by engineers in a lab, as opposed to letting the genes be produced naturally.¹³ Genetic engineers carry out transplants to transfer a desirable characteristic associated with a gene in the donor organism into a host organism which then exhibits a new characteristic.¹⁴ Recombinant DNA techniques expand the range of traits that may be transferred to another organism and increase the speed and efficiency by which desirable traits may be incorporated into organisms.¹⁵ A genetically modified organism is made by inserting a gene from an external source such as viruses, bacteria, animals or plants into an unrelated species.¹⁶ The World Health Organization defines genetically modified organisms as organisms

10. *Id.*

11. *Questions and Answers on Food from Genetically Engineered Plants*, FDA (April 7, 2013), <https://njob.org/wp-content/uploads/2013/07/FDA-GMO-FAQs.pdf>

12. Upton, *supra*, note 7, at 1.

13. Mary Clare Jalonick, *Debate over Genetically Modified Foods Continues Amid Confusion*, PBS NEWSHOUR (May 17, 2014, 11:16 AM), <http://www.pbs.org/newshours/rundown/national-debate-genetically-modified-foods-continues/>.

14. *Guide to US Regulation of Agricultural Biotechnology Products*, PEW INITIATIVE ON FOOD AND BIOTECHNOLOGY, (Sept. 3, 2001), http://www.pewtrust.org/-/media/legacy/uploadedfiles/wwwpewtrustsorg/reports/food_and_biotechnology/hhsbiotech0901pdf.pdf. [*hereinafter*, Pew Initiative].

15. Upton, *supra*, note 7.

16. Behrokh Mahajer Maghari and Ali M. Ardekani Behrokh, *Genetically Modified Foods and Social Concerns*, 3 AVICENNA JOURNAL OF MEDICAL BIOTECHNOLOGY 109, 109 (2011).

that do not occur naturally by mating and/or natural recombination.¹⁷ Advances in biotechnology now permit for the exchange of genetic materials among all living organisms.¹⁸

One example of this is the fruit, papaya. In the late 1980s, the University of Hawaii started developing papayas that were resistant to the Papaya Ringspot Virus.¹⁹ Scientists transferred certain viral gene encoding capsid proteins into the papaya genome.²⁰ As a result, papayas could resist the Papaya Ringspot Virus.²¹

Now with the introduction of genetically engineered salmon, scientists have begun injecting Recombinant DNA composed of a promoter from another fish, an ocean pout, and a growth hormone gene from a Pacific Chinook into the fertilized eggs of Atlantic Salmon.²² This allows the salmon that grow to market size in a faster amount of time.

III. WHY FOODS ARE GENETICALLY ENGINEERED AND THE DEBATE

Foods are being genetically engineered for several reasons. For one, the majority of crops in the global market have been genetically manipulated to express one of these basic traits: resistance to insects or viruses, tolerance to herbicides, and/or to enhance their nutritional value.²³

Another reason why food is being genetically engineered is to increase

agricultural productivity in hopes of resolving worldwide hunger problems. Furthermore, with the increase of crop production, there is hope that it will keep the prices of certain crops low.

Despite the benefits of growing genetically engineered food, there is fear that these foods could present several risks when consumed. In addition, it remains unknown what could happen since genes from different organisms are being transferred into other organisms.

There is a concern that the process of splicing genes and then inserting them into the DNA of other cells is imprecise, and could lead to

17. *Frequently Asked Questions on Genetically Modified Foods*, WORLD HEALTH ORGANIZATION, http://www.who.int/foodsafety/areas_work/food-technology/faq-genetically-modified-food/en#.

18. *Id.*

19. *Papayas*, GMO COMPASS http://www.gmocompass.org/eng/grocery_shopping/fruit_vegetables/14.genetically_modified_papayas_virus_resistance.html

20. *Id.*

21. *Id.*

22. Upton, *supra*, note 7.

23. Magahari, *supra*, note 16.

DNA mutations that could unpredictably impact the way in which genes function.²⁴ When genes are transplanted into a host organism, the new DNA in the cells can begin to manufacture proteins in incorrect quantities or at wrong times, producing new proteins.²⁵

Allergies are another concern consumers have about genetically modifying food.

Taking genes from a plant to which one individual could be allergic, and inserting them into another plant to sell for consumption, leaves consumers unaware of the initial source of transferred genes. There could be certain consumers who have allergies to the original plant used, but do not expect to find these traits in the finished product.

Another fear is that the transfer of genes to create engineered foods could transfer bacteria into the gastrointestinal tract or to other cells in the human body causing negative side effects.²⁶

It is for these reasons that consumer groups advocated for the labeling of genetically engineered foods. In 2013, the New York Times conducted a poll regarding whether genetically engineered or genetically modified foods should be labeled.²⁷ Out of those polled, 93% opined that foods that have been genetically modified or genetically engineered should be labeled.²⁸ Three-fourths of those polled are concerned about the effects genetically modified or genetically labeled foods can have on people's health.²⁹ Thirty-seven percent of those polled feared that eating these foods could cause cancer or allergies.³⁰

Congress tried passing several bills that would require the labeling of these foods only to have these bills defeated. States even tried passing their own bills requiring individual labeling laws, but were unsuccessful. Organizations such as, The Grocery Manufacturers Association, Snack Food Association, International Dairy Foods Association and the National Association of Manufacturers have spent millions of dollars fighting any measure that may lead to the implementation of strict labeling laws.

24. *Brown v. Peckman*, 3 P.3d 1210 (Colo.2000)

25. Pew Initiative, *supra* note 14.

26. Debra Strauss, "The International Regulation of Genetically Modified Organisms: Importing Caution Into the U.S. Food Supply," 61 Food Drug L.J. 167, 169 (2006)

27. Allison Kopicki, *Strong Support for Labeling Modified Foods*, NEW YORK TIMES (July 27, 2013), <http://www.nytimes.com/2013/07/28/science/strong-support-for-labeling-modified-foods.html> (The poll was conducted from January 24 to January 27, 2013 with 1,052 adults and has a margin of sampling error of plus or minus three percent.)

28. *Id.*

29. *Id.*

30. *Id.*

Finally, in July of 2016, a labeling law was passed mandating that genetically modified and engineered foods must be labeled.

Nevertheless, major biotechnology companies and the food industry are of the opinion that all breeding creates genetic modifications.³¹ Foods that have been through the genetic engineering process are no different from foods that have undergone other forms of breeding where labels are not required.³² These companies and groups also argue that labeling policies do nothing to advance the health and safety of consumers.³³ Implementing laws for the labeling of foods with genetically modified organisms forces companies to provide information outside the realm of nutrition, health, and safety.³⁴ If foods that are genetically engineered or contain these ingredients are labeled as such, major biotech and food manufacturing companies fear consumers will believe these foods differ from the conventional foods and therefore will not purchase them, leading to a decrease in sales.

A main concern for food manufacturing and biotechnology companies have with labeling involves costs. In fact, it is not so much the costs associated with producing the actual label but rather having to separate genetically engineered foods and ingredients from other foods. There are direct and indirect costs that mandatory labeling laws will impose upon biotech and food manufacturing companies, but these costs will ultimately burden the consumer.³⁵ The actual labeling of the final food product, segregation during production and transportation, testing and compliance are all direct costs that will be imposed upon food supply companies, which could be passed to consumers.³⁶

The indirect costs would be: managing genetically modified and non-genetically modified crops to ensure there is no cross-pollination and

31. *Why We Oppose Genetically Modified Labeling: Science and the Law*, THE HUFFINGTON POST,

http://www.huffingtonpost.com/jon-entine/gmo-labeling-science-and-_b_8871680.html

32. *Id.*

33. *What You Need to Know About GMO Labeling*, COONSUMER REPORTS (last updated Oct. 8, 2015),

<http://www.consumerreports.org/cro/food/gmo-labeling>

34. Puneet Kollipara, "Opposition stalls U.S. Senate Bill Aimed at Blocking GMO Food Labels,"

<http://www.sciencemag.org/news/2016/03/opposition-stalls-gmo-food-labeling-bill-us-senate>

35. Washington State Academy of Sciences, *White Paper on Washington State Initiative 522 (I-522): Labeling Foods Containing Genetically Modified Ingredients* (Oct. 2013),

http://www.washacad.org/initiatives/WSAS_i522_WHITEPAPER_100913.pdf.

36. *Id.*

increased resistance in non-targeted insects and weeds as the product moves through the supply chain.³⁷ These costs incurred by food companies, farmers, and biotechnology firms will be passed to consumers in the form of higher prices. There is also concern how higher food prices will impact low-income families. In a study by Cornell University, it was found that if New York implemented a labeling law, it would cost a family of four about \$500 extra for food each year.³⁸

IV. HISTORY OF LABELING LAWS

The need to regulate biotechnology arose in the 1960s and 1970s when scientists were making recombinant DNA discoveries.³⁹ By the 1980s, the United States began regulating biotechnology products through the Coordinated Framework for Regulation of Biotechnology.⁴⁰ In 1986, the Office of Science and Technology Policy had an interagency agreement that defined the lead agencies for regulating agricultural biotechnology.⁴¹ These agencies were the Food and Drug Administration, Environmental Protection Agency and the United States Department of Agriculture. The FDA was given the authority to regulate the safety of genetically modified crops being eaten, the United States Department of Agriculture received rights to ensure new crops from biotechnology did not become pests, and the Environmental Protection Agency was given authority to ensure genetically modified foods with pesticides were safe for consumption.⁴²

Since then, several regulations and guidelines have been adopted by these agencies that address the application of existing laws to biotechnology products.⁴³ However, even with three federal agencies involved with regulating agricultural biotechnology, there was no specific law that mandated labeling genetically engineered food or foods that contain genetically engineered ingredients.

Regulations by the Fair Packaging and Labeling Act of 1966 and the Federal Food Drug and Cosmetic Act (FFDCA) govern how food should be labeled.⁴⁴

37. *Id.*

38. Michelle Ye Hee Lee, The Washington Post, *Would GMO Labeling Requirement Cost \$500 or more in Groceries per Family a Year* (April 6, 2015), www.washingtonpost.com/news/fact-checker/wp/2015/04/06/would-gmo-labeling-requirement-cost-500-more-in-groceries-per-family-a-year/

39. Mark L. Winston TRAVELS IN THE GENETICALLY MODIFIED ZONE 61 (2002).

40. *Supra* at note 36.

41. Winston, *supra*, note 37.

42. *Id.*

43. Pew Initiative, *supra* note 14.

44. 16 CFR §§ 500-503; 21 U.S.C. § 331 (2012).

The FFDCA prohibits the introduction or delivery into interstate commerce of any food that is misbranded.⁴⁵ Section 403(a)(1) of the FFDCA explains that a food is misbranded if its labeling is false or misleading.⁴⁶ Labeling is misleading if it fails to reveal facts that are material in light of representations made or suggested in the labeling or material with respect to the consequences that may result from the use of the food to which the labeling under the conditions of use prescribed in labeling or advertising.⁴⁷

In 1992, the FDA released a “Statement of Policy-Food Derived from New Plant Varieties,” which provided an interpretation of the FFDCA regarding food developed from plants that had been bioengineered.⁴⁸ The FDA stated in this policy that they were not aware of information that showed bioengineered foods differ from other foods in any meaningful way or that these foods presented safety concerns versus food developed by traditional plant breeding.⁴⁹ As such, the FDA concluded new plant varieties from bio-engineering or the new varieties used in other foods is not material information within the meaning of FFDCA Section 201(n) and is not required to be disclosed in labeling.⁵⁰ However, the FDA did suggest food be labeled if it is not derived from genetically engineered methods.⁵¹

Labels are required in the absence of material information when: (1) special health risks are posed; (2) it could mislead consumers in light of other statements on the label; and (3) in cases where a consumer may assume that a food because of similarity to another food and has nutritional characteristics of that food when it does not.⁵²

A. *Alliance for Bio-Integrity v. Shalala*

Federal courts have heard cases involving labeling issues of genetically modified and engineered food. In *Alliance for Bio-Integrity v. Shalala*, the plaintiffs challenged the FDA policy’s failure to require

45. 21 U.S.C. § 331 (2012).

46. 21 U.S.C. §§ 343-403 (2012).

47. 21 U.S.C. §§ 321 and 201 (2012).

48. *Guidance for Industry: Voluntary Labeling Indicating Whether Foods Have or Have Not Been Derived from Genetically Engineered Plants*, FDA (Nov. 2015), <http://www.fda.gov/food/guidanceregulation/guidancedocumentsregulatoryinformation/ucm059098.htm>.

49. *Id.*

50. *Id.*

51. *Id.*

52. *Id.*

labeling for genetically engineered foods.⁵³ One of the arguments was that the FDA should have considered widespread consumer interest in having genetically modified foods labeled.⁵⁴ In addition, the plaintiffs also challenged the FDA’s interpretation of the term “material” as genetic modification is a material fact under the FFDC. The court upheld the agency’s determination that foods derived from Recombinant DNA do not present any greater safety concerns than foods from traditional plant breeding and labeling is not warranted.⁵⁵

Individual states began to consider the issue of whether genetically engineered foods should be labeled. State fact finding committees and general assemblies had opinions opposite to the federal government. Many states found that genetically engineered foods potentially pose risks to health, safety, agriculture and the environment thus necessitating legislation involving the labeling of genetically modified foods. States retain the authority under their police powers to regulate matters of local concern.⁵⁶ As such, many states tried passing their own laws mandating the labeling of genetically engineered foods.

In 2013 and 2014, more than 30 states had introduced legislation to require labeling of genetically modified and engineered food.⁵⁷ In 2013, Connecticut became the first state to pass legislation for labeling genetically modified foods.⁵⁸ The State of Maine soon followed.⁵⁹ These states were aware that if their laws came into immediate effect they could be facing expensive lawsuits brought on by various organizations against labeling laws.⁶⁰ Both Connecticut and Maine drafted trigger clauses into their legislation.⁶¹ Connecticut’s labeling law was not to take effect unless

53. *Alliance for Bio-Integrity v. Shalala*, 116 F.Supp.2d 166, 178 (D.D.C. 2000). (Stating that the Food and Drug Administration published a “Statement of Policy: Foods Derived From New Plant Varieties.” The Statement Policy presumed that foods produced through recombinant DNA were to be recognized as safe under the Federal Food, Drug and Cosmetic Act, 21 U.S.C. § 321 (s). It was also mentioned that recombinant DNA modification was not a material fact within the meaning of the Food Drug and Cosmetic Act.)

54. *Id.*

55. *Id.* at 178-79.

56. *Grocery Mfrs. Ass’n v. Sorrell*, 102 F. Supp.3d 583, 604 (C. VT. 2015).

57. Makia Freeman, *THE FREEDOM ARTICLES, Preemption: The Legal Principle used by Big Biotech to Get GMO Labeling Banned*, (last updated July 27, 2015), <http://freedom-articles.toolsforfreedom.com/dark-act-gmo-labeling-preemption>

58. *Id.*

59. *Id.*

60. James J. Gormley, *GMO-Labeling Laws: Why the Trigger Clause?*, (last updated April 4, 2014), <http://www.nutritionaloutlook.com/articles/gmo-labeling-laws-why-trigger-clause>

61. *Id.*

four other neighboring states endorsed similar legislation.⁶² Similarly, Maine's law was not to take effect until five contiguous states passed similar laws.⁶³

In 2014, Vermont enacted legislation that took effect on July 1, 2016.⁶⁴ Their legislation required the labeling of genetically engineered foods that will be sold and produced in the state.⁶⁵ The law further requires that food intended for human consumption, offered for sale by a retailer after the Act's effective date of July 1, 2016, be labeled as, "produced entirely or in part from genetic engineering" if it is a product (1) offered for retail sale in Vermont; and (2) entirely or partially produced with genetic engineering.⁶⁶

The legislative purpose of Vermont's labeling law was to establish a system where people can make educational decisions regarding the potential health effects of the food they may consume, inform consumers of the potential environmental effects of genetically engineered foods, reduce and prevent consumer confusion by prohibiting the labeling of genetically engineered products as "natural" and provide consumers with data so they can make informed decisions for religious reasons.⁶⁷

Coalitions of agricultural interests called upon Congress to take action in hopes of pre-empting Vermont's labeling law before it took effect.⁶⁸ Both the House and Senate tried enacting various pieces of legislation in attempts to create a federal labeling standard and to preempt Vermont's law.

In 2015, The House of Representatives passed the Safe and Accurate Food Labeling Act of 2015 by a vote of 275 to 150.⁶⁹ If this legislation had become law, it would have amended the FFDCFA by allowing the labeling of genetically modified organisms only if there was a material difference between the genetically modified organism and comparable food if the disclosure was necessary to protect public health and safety or to prevent the label from being misleading.⁷⁰ However, the use of a genetically

62. *Id.*

63. *Id.*

64. VT. STAT. ANN. tit 9 §3043 (LEXIS through 2015 legislation).

65. *Id.*

66. *Id.* at (a)(1-2).

67. *Grocery Mfrs. Ass'n v. Sorrell*, supra, note 53.

68. AG Committee to Consider GMO Labeling Bill, Farm Futures (Feb. 25, 2016), <http://farmfutures.com/story-ag-committee-consider-gmo-labeling-bill-0-137821>

69. The Safe and Accurate Food Labeling Act, H.R. 1599, 114th Cong. (2015), <https://www.congress.gov/bill/114th-congress/house-bill/1599/all-actions?q=%7B%22roll-call-vote%22%3A%22%7D>.

70. HR 1599 Title I § 101

modified organism by itself does not constitute a material difference.⁷¹ The bill also amended that Agricultural Marketing Act of 1946 by requiring the Agricultural Marketing Service to establish a voluntary genetically engineered food certification program.⁷² In addition, the bill preempted state and local requirements for labeling genetically modified organisms *unless* they had a program that matched the programs in this act.⁷³ Many pro-consumer groups unsatisfied that there was no mandatory labeling of genetically modified foods, nicknamed the legislation "Denying Americans the Right to Know Act" or "DARK Act."⁷⁴

The Safe and Accurate Food Labeling Act of 2015 passed through the House in 2015.⁷⁵ The Senate Agricultural Committee then approved the bill.⁷⁶ In February, 2016, Senator Pat Roberts (R-Kan.) introduced a bill, The Biotechnology Labeling Solutions Act, S.2609, the Senate's version of "The Safe and Accurate Food Labeling Act," to establish a national, bioengineered food labeling standard overseen by the United States Department of Agriculture.⁷⁷ The aim of this bill was to amend the Agriculture Marketing Act of 1946. The Secretary of Agriculture would have been required to formulate a national voluntary labeling standard for bioengineered foods and any food that might be bioengineered or may have been produced or developed from bioengineering within 2 years of enactment of the bill.⁷⁸ Opponents of this bill dubbed this bill the Senate's version of the "DARK ACT."⁷⁹

Though the Safe and Accurate Food Labeling Act of 2015 bill passed through the Senate Agricultural Committee, Senator Pat Robert's bill S.2609, did not pass through the Senate voting process as it only received 48 out of the 60 votes needed.⁸⁰

Though defeated, the Senate Democrats drafted their own bill regarding the labeling of Genetically engineered foods. On March 2, 2016,

71. *Id.*

72. HR 1599 Title II § 201

73. HR 1599 Title II § 203

74. See *The Dark Act*, FOOD AND WATER WATCH (July 30, 2015), <http://www.foodandwaterwatch.org/insight/dark-act>

75. The Safe and Accurate Food Labeling Act of 2015, H.R.1599, (114th Cong. (2015-2016)), <https://www.congress.gov/bill/114th-congress/house-bill/1599>

76. *Id.*

77. The Biotech Labeling Solutions Act, S.2609, 114th Cong. (2016), <https://www.congress.gov/bill/114th-congress/senate-bill/2609/text>

78. *Id.*

79. Jacqui Fatka, *AG Committee to Consider GMO Labeling Bill-Farm Futures*, FARM FUTURES (Oct. 23, 2015), <http://farmfutures.com/blogs-compromise-nearing-gmo-labeling-solution-10316>

80. *Id.*

the “Biotechnology Food Labeling Uniformity Act,” was introduced by Senators Jeff Merkley (D-OR), Patrick Leahy (D-VT), John Tester (D-MT) and Dianne Feinstein (D-CA). The Biotechnology Food Labeling Act would have given consumers the opportunity to see if a food is prepared with genetically modified ingredients while offering food manufacturers several options for including this information on or near the ingredients list.⁸¹ However, this bill was defeated in the Senate on March 16, 2016.⁸²

V. THE NEW LAW THAT MAY STILL LEAVE CONSUMERS IN THE “DARK” IN REGARDS TO GENETICALLY ENGINEERED FOOD

On July 29, 2016, President Obama signed a bill that now requires labeling of foods with genetically modified organisms.⁸³ The bill amends the Agricultural Marketing Act of 1946 by allowing sections entitled “Establishment of National Bioengineered Food Disclosure Standard”⁸⁴ and “Labeling of Certain Food.”⁸⁵ The Agricultural Marketing Act of 1946 allows for the distributing and marketing of agricultural products.

The exact details of this law have yet to be resolved. The Department of Agriculture has two years from July 29, 2016, to establish a national mandatory bioengineered food disclosure standard and establish necessary requirements to carry out the standard.⁸⁶

Right now, the National Bioengineered Food Disclosure Standard contains a section of definitions including the term, “Bioengineering.”⁸⁷ With respect to food, bioengineering is currently defined as food that contains genetic material that has been modified through in vitro recombinant deoxyribonucleic acid (DNA) techniques and for which the modification could not be otherwise obtained through conventional breeding or found in nature.⁸⁸ The term “bioengineering” under section 291 only applies to food subject to labeling requirements under the FFDC⁸⁹ or labeling requirements under the Federal Meat Inspection

81. Press Release, U.S. Senator Jeff Merkley of Oregon, Merkley, Leahy, Tester, Feinstein Introduce GMO Legislation (Mar. 2, 2016), <https://www.merkley.senate.gov/news/press-releases/merkley-leahy-tester-feinstein-introduce-gmo-food-labeling-legislation>).

82. *Id.*

83. 7 U.S.C. § 1621 (2012).

84. *Id.*

85. 7 U.S.C. § 1639 (2012)

86. *Id.*

87. *Id.*

88. *Id.*

89. 21 U.S.C. § 301 (2012).

Act⁹⁰, Poultry Products Inspection Act⁹¹, and the Egg Products Inspection Act.⁹²

Nevertheless, the National Bioengineered Food Disclosure Standard section gives manufacturers three ways to disclose their product contains bioengineered ingredients. Manufacturers can label their products by “text, symbol, or electronic or digital link that can be read by a smartphone.”⁹³ In addition, this statute preempts state and local authorities from continuing or establishing their own labeling laws on food derived from biotechnology.⁹⁴

In the case of small food manufacturers, they can also choose to place a telephone number accompanied by certain language that indicates that the telephone number provides access to additional information and that an internet website be maintained with bioengineering disclosures instead of a text, symbol or electronic or digital link.⁹⁵

Food manufacturers were pleased with the preemption provisions since it was feared having to comply with different state labeling laws in each state would increase prices. Besides, major biotechnology companies and food manufacturers have expended large sums of money fighting individual state labeling laws. Under the new law, these organizations no longer have to spend money to fight labeling laws.

Consumer groups are enraged that the law does not specifically mandate that manufacturers have to post a label or a warning if the food they intend to sell contains genetically modified organisms. Since manufacturers have three ways to select a labeling method and small food manufacturers can select to leave a telephone number, consumer groups fear that manufacturers will choose the method that gives the least amount of information or makes it difficult for consumers to make an immediate choice about the product they are contemplating purchasing.

Additionally, under the new law, companies can provide information pertaining to genetically engineered ingredients by QR code, which can be read by a smartphone. However, consumers without smartphones will not be able to gain immediate access to whether the food they intend to purchase is bioengineered or contains genetically modified organisms.

90. 21 U.S.C. § 601 (2012).

91. 21 U.S.C. § 451 (2012).

92. 21 U.S.C. § 1031 (2012).

93. 7 U.S.C. § 1639 (2012) (Stating that a regulation promulgated by the Secretary in carrying out this subchapter shall— in accordance with subsection (d), require that the form of a food disclosure under this section be a text, symbol, or electronic or digital link, but excluding Internet website Uniform Resource Locators not embedded in the link, with the disclosure option to be selected by the food manufacturer.)

94. *Id.*

95. *Id.*

However, this problem will hopefully be remedied as the Secretary of Agriculture will soon begin a study to identify any technological challenges imposed upon consumers attempting to access bioengineering disclosures.⁹⁶

VI. CONCLUSION

Food manufacturers must now decide how they intend on labeling products that contain genetically modified organisms. A major factor in their decision is the cost of adding these labels to their packaging. Small to medium sized companies will be affected the most as they do not have the same financial resources to absorb costs of labeling like major corporations. It is likely that manufacturers will opt for the most cost-effective manner to alert consumers their products contain genetically modified organisms.

Additionally, food manufacturers now must consider is how much information they want to give to consumers. They must decide if they want a consumer to immediately see a symbol or wording alerting them immediately that the food they are considering purchasing contains genetically modified organisms. For example, if they place a symbol or wording on the product they risk the consumer not purchasing the product. If a QR code is used or a small company places a telephone number on the label, manufacturers are likely counting on its non-immediacy and inconvenience to deter consumers from finding out necessary information in hopes of gaining a sale on a product.

The main concerns of consumers regarding eating genetically modified foods are whether they will cause allergies and whether other negative side effects will occur in the human body post-consumption. Further, consumers are still concerned about how they will find out if the food they intend to purchase has genetically modified ingredients if there is no visible labeling or message on the product at the time of purchase. Most consumer groups are not pleased that the new law permits manufacturers to use a QR code that can only be read by a smartphone device to obtain this necessary information. Consumers without smartphones may be denied information about whether the food they intend to buy has genetically modified organisms if studies show this method of labeling is not a hardship on consumers.

In addition, the FDA also stated several concerns over the new law. The labeling of food is an area in which the FDA is traditionally involved. The new law now leaves labeling to the United States Department of Agriculture. Furthermore, the FDA argued that the definition of what

96. *Id.*

constitutes bioengineering is vague.⁹⁷ Because of this vague definition, the scope of foods that can be considered bioengineered for labeling could be narrowed down significantly.⁹⁸

Despite the passing of the new law and its development over the next two years, issues still exist about labeling genetically modified food, the public's trust in genetically modified foods, and how the new law will impact food manufacturers and the agricultural biotechnology industry. It is uncertain if the new law has actually struck a balance between the needs and concerns of consumers and business.

97. Jerry Hagstrom, "FDA Critical of GMO Labeling Bill," NORTHERN AG (June 30, 2016), <http://www.northernag.net/AGNews/AgNewsStories/TabId/657/ArtMID/2927/ArticleID/6784/FDA-Critical-of-GMO-Labeling-Bill.aspx>

98. *Id.*