Mandatory Labeling Laws: What Do Recent State Enactments Portend for the Future of GMOs?

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Abstract

A debate on the propriety of establishing mandatory GMO labeling at the state level is well underway. Based on the results of recent ballot initiatives and state legislation, it is apparent that the concept of mandatory labeling enjoys significant support. Vermont has led the way with its enactment of a "no-strings attached" GMO labeling law, but federal courts and Congress will ultimately determine how the labeling issue will proceed. Regardless of how court challenges or preemptive federal legislation develop on the labeling issue, consumers still must decide whether they support the existing genetically modified food system. It is reasonable to expect that the battle centered on whether or not consumers should accept or reject GMOs will continue to move forward regardless of the outcome of current mandatory labeling debate.

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I. INTRODUCTION: VERMONT ON THE FOREFRONT

Amidst a crowd of cheering supporters in front of the Vermont statehouse, Governor Peter Shumlin initiated the nation's first mandatory GMO labeling requirements on May 8, 2014.[1] Prior to signing this landmark legislation, Governor Shumlin noted its significance by stating, "I am proud of Vermont for being the first state in the nation to ensure that Vermonters will know what is in their food. The Legislature has spoken loud and clear through its passage of this bill. I wholeheartedly agree with them . . . ."[2] Pursuant to this new law, beginning on July 1, 2016, all food products that are "offered for retail sale in Vermont" and that contain genetically modified ingredients must be identified with an appropriate label.[3] Depending upon the product, the label must indicate that the food or food product was "produced with genetic engineering," "partially produced with genetic engineering," or that it "may be produced with genetic engineering."[4]

In recent years, the issue of mandatory GMO labeling has been the subject of an extensive public debate throughout the nation. According to the National Conference of State Legislatures, 110 bills on this subject

1. *Vermont Becomes First State to Pass GMO Law*, BURLINGTON FREE PRESS (May 8, 2014), http://www.burlingtonfreepress.com/videos/news/politics/2014/05/08/8875677/.

2. Terri Hallenbeck, *GMO Bill One Step from Law*, BURLINGTON FREE PRESS (Apr. 24, 2014), http://www.burlingtonfreepress.com/story/news/politics/2014/04/23/gmo-house/8060463/; *see also* Vermont Governor Peter Shumlin, FACEBOOK (Apr. 23, 2014, 12:19 PM), https://www.facebook.com/Governor.Peter.Shumlin?fref=photo#!/photo.php?fbid=657497080964920&set=a.162239443824022.32100.155136287867671&type=1 (stating that "Vermont has led the local food movement that is better connecting people nationwide with the food they eat. It makes sense that we are again leading the nation in this important step forward.").

3. VT. STAT. ANN. tit. 9, § 3043 (2014).

4. *Id.*

were introduced in 32 different states in 2013.[5] In the early months of 2014, this trend continued as at least 67 bills were introduced in 25 different states.[6] This legislative activity has yielded somewhat mixed results thus far, but it appears that there is substantial public support for labeling requirements and that this support is growing.

Vermont is not the first state in the United States to enact a mandatory labeling law. The legislatures in Maine and Connecticut each approved bills in 2013 conditionally mandating GMO labeling frameworks.[7] Neither of these laws, however, will become effective until specified conditions, relating to the enactment of similar legislation in other states, are satisfied.[8] With a defined effective date, Vermont's enactment of a mandatory GMO labeling requirement clearly is a major milestone in the extensive nationwide debate on mandatory GMO labeling. It is too early to ascertain the precise scope of the Vermont law's impact, but it has raised a number of questions about the future of mandatory state GMO labeling laws. These questions include: (1) will the Vermont statute face—and survive—a constitutional challenge; (2) to what extent will other states follow Vermont's lead in enacting mandatory GMO labeling laws; and (3) will Congress step in to impose a federal GMO labeling framework in order to preempt individual state mandates? Each of these questions likely will be resolved through various judicial and legislative processes in the near future. Until that time, the GMO labeling debate likely will continue in earnest. Despite the lack of clarity on the future of labeling itself, the legal developments that have occurred to date provide illumination on other, more fundamental, issues related to the production of genetically modified food. In particular, the public support that has been expressed for mandatory labeling raises a question as to the average consumer's

5. Pamela M. Prah, *Many States Weigh GMO Labels*, STATELINE (Mar. 13, 2014), http://www.pewstates.org/projects/stateline/headlines/many-states-weigh-gmo-labels-85899542028.

6. *Id.*; *see also NCSL Today*, NAT'L CONFERENCE OF STATE LEGISLATURES (Mar. 14, 2014), http://www.ncsl.org/documents/NCSL_Today/March14.htm (indicating that "at least half the states may consider requiring special labels on food that has been genetically modified" this year).

7. An Act to Protect Maine Food Consumers' Right to Know about Genetically Engineered Food, 2014 Me. Laws 565; An Act Concerning Genetically-Engineered Food, 2013 Conn. Acts 13-183 (Reg. Sess.).

8. The Maine statute will become effective 30 days after the Commissioner of Agriculture, Conservation and Forestry certifies that "at least 5 contiguous states including Maine" adopt mandatory GMO labeling. 2014 Me. Laws 565, § 2. The Connecticut statute will not become effective until after two triggers are satisfied: (1) four states, including one that borders Connecticut, must enact mandatory GMO labeling laws; and (2) the aggregate population of eight defined Northeastern states with mandatory GMO labeling laws must exceed twenty million "based on 2010 census figures." 2014 Conn. Acts 13-183 (Reg. Sess.), §3.

comfort level with genetically modified foods. Additionally, the nature of the debate raises a question as to the true purpose of mandatory labeling laws. Do proponents simply want to provide consumers with relevant facts so that these consumers can make informed choices? Or do proponents want to provide this information so that consumers—and retailers—will make particular choices—namely the choices to forego the purchase or sale of genetically modified food products?

This Article will look at some of the issues that have been raised by recent efforts to mandate GMO labeling at the state level. The Article will begin by briefly reviewing the background and history of genetically modified food products in the United States. The Article will then discuss the details of recent state ballot initiatives and legislative enactments on the topic. The Article will conclude by looking at some of the important questions surrounding the labeling debate as well as their impact upon the prevalence of GMOs in the American food supply.

II. THE DEVELOPMENT AND RISE IN PREVALENCE OF GENETICALLY MODIFIED FOODS

A. What Are GMOs?

Farmers long have sought to improve their agricultural crops through the use of genetics. Using the basic theory of Mendel genetics, agricultural producers have utilized traditional breeding to highlight desirable genetic traits.[9] For example, if corn plants that produced ears containing large kernels are viewed by farmers as being more desirable than those producing smaller kernels, then farmers select seeds from those plants that demonstrated the large kernel trait for their breeding stocks. Over the course of several generations, the expressed characteristics of corn plants are altered through this selective breeding such that positively-viewed traits (large kernels) are expressed more frequently. Although the rate at which the positively-viewed traits are expressed changes throughout this selective breeding process, there is no addition of new genetic material to the plant or animal.[10]

Changes in genetically modified plants or animals, however, are effected in a fundamentally different manner from those in conventional

9. *See* KAROBI MOITRA, A JOURNEY THROUGH GENETICS [PART I] 2–11 (Michael Dean ed., 2014) (describing the work of Austrian Monk Gregor Mendel, a noted geneticist who used pea plants to map the hereditary characteristics of plants).

10. *See* Rebecca Bratspies, *The Illusion of Care: Regulation, Uncertainty, and Genetically Modified Food Crops*, 10 N.Y.U. ENVTL. L.J. 297, 302 (2002) (discussing the process of selective breeding).

selective breeding.[11] Through genetic modification, a gene is added to an organism from a different species in order to provide that organism with a desirable trait.[12] Thus, the genetically modified plant or animal contains genetic material that it never would have acquired—and expresses traits that it never would have possessed—through conventional selection breeding. After the plant or animal has been genetically modified, it can reproduce through conventional means, and it will pass along these genetic modifications to its offspring.[13]

The development of the AquAdvantage salmon provides an illustration of how and why plants and animals are genetically modified. This fish, which is currently working its way through the U.S. Food and Drug Administration (FDA) approval process, is a genetic modification of the Atlantic salmon.[14] In order to create a salmon that will reach market weight more quickly, genetic material from two different sources have been inserted into an Atlantic salmon: (1) a growth gene taken from a Chinook salmon; and (2) a promoter gene taken from an ocean pout.[15] With the addition of this new genetic material, the AquAdvantage salmon contains a growth hormone that will continually express itself rather than one that expresses itself periodically based upon environmental conditions.[16]

Certainly, a faster-growing salmon has clear economic advantages to its producer. AquaBounty Technologies, the developer of this genetically modified salmon, also claims that the general public will

11. Genetically modified plants and animals also must be contrasted with cloning which involves the creation of genetically identical individuals. The first animal to be cloned was Dolly the Sheep, who was born in 1996 at the University of Edinburgh's Roslin Institute. *Dolly The Sheep: A Life of Dolly*, THE ROSLIN INSTITUTE, http://www.roslin.ed.ac.uk/public-interest/dolly-the-sheep/a-life-of-dolly/ (last visited May 8, 2014).

12. David Costa, *In Pari Delicto and Crop Gene Patents: An Equitable Defense for Innocently Infringing Farmers*, 3 KY. J. EQUINE AGRIC. & NAT. RES. 179, 182–83 (2010–2011).

13. *See generally* David R. Nicholson, *Agricultural Biotechnology and Genetically-Modified Foods: Will the Developing World Bite?*, 8 VA. J. L. & TECH 7 (Summer 2003) (discussing the manner in which "biotechnology has revolutionized the art of plant breeding").

14. *Animal & Veterinary: Genetically Engineered Salmon*, U.S. FOOD & DRUG ADMIN., http://www.fda.gov/AnimalVeterinary/DevelopmentApprovalProcess/GeneticEngineering/GeneticallyEngineeredAnimals/ucm280853.htm (last visited May 8, 2014).

15. Michael P. McEvilly, *Lack of Transparency in the Premarket Approval Process for AquAdvantage*, 11 DUKE L. & TECH. REV. 413, 414 (2013).

16. Anastasia Bodner, *Risk Assessment and Mitigation of AquAdvantage Salmon*, BIOFORTIFIED (Oct. 16, 2010), http://www.biofortified.org/2010/10/salmon/ (last visited May 8, 2014).

realize environmental benefits from the raising of this fish.[17] The basis for this claim is that production will be moved away from sensitive coastal areas and that transportation infrastructure and impacts will be minimized when production occurs in closer proximity to the consumer markets.[18]

B. The Commercial Introduction of the Flavr Savr Tomato

The first genetically modified food crop product to be marketed commercially was the Flavr Savr tomato.[19] This tomato, developed by Calgene, was genetically modified to prevent softening during the ripening process.[20] Because of the addition of this trait, these tomatoes, when ripe, were to have the firmness of a green tomato, which would enable them to be shipped in a ripened state without bruising.[21] As a result, the tomatoes could ripen on the vine.[22] This would eliminate the need for artificial ripening treatments and, in theory, would produce more flavorful tomatoes.[23]

The Flavr Savr was approved by the FDA on May 18, 1994,[24] and introduced commercially shortly thereafter on May 21, 1994, in two grocery stores—one in Davis, California, and one in Northbrook, Illinois.[25] These initial Flavr Savr tomatoes were priced $0.70 per pound more than conventional tomatoes, and they were displayed with information explaining the technology used to produce them.[26] These genetically modified tomatoes reportedly "sold like hotcakes."[27] In fact,

17. *Products*, AQUABOUNTY TECHNOLGIES, http://www.biofortified.org/2010/10/salmon/ (last visited May 8, 2014).

18. *Id.*

19. George Bruening & J.M. Lyons, *The Case of the FLAVR SAVR Tomato*, CAL. AGRIC., July–Aug. 2000, at 6–7.

20. BELINDA MARTINEAU, FIRST FRUIT: THE CREATION OF THE FLAVR SAVR TOMATO AND THE BIRTH OF GENETICALLY ENGINEERED FOOD 7 (2001).

21. *Id.*

22. *Id.*

23. *Id.* at 8.

24. Press Release, U.S. Food and Drug Admin., New Tomato Developed Through Biotechnology (May 18, 1994), http://archive.hhs.gov/news/press/1994pres/940518.txt. In this Press Release, FDA Commissioner David A. Kessler stated, "Consumers can be confident that we remain committed to assuring that foods produced by genetic engineering are as safe as food in our grocery stores today." *Id.*

25. MARTINEAU, *supra* note 20, at 191.

26. *Id.* at 191–92. At the Davis, California location, each tomato carried a sticker spelling out in capital letters the phrase, "GROWN FROM FLAVR SAVR SEEDS." *Id.* at 191. As part of the Davis store's point-of-purchase display, information was presented to explain the genetic engineering process used to produce Flavr Savr seeds. The display also provided a phone number for consumers to call if they had any additional questions regarding Flavr Savr tomatoes. *Id* at 192.

27. *Id.*

sales were so strong that one of the grocers imposed a two Flavr Savr per day limit upon his customers.[28] Based upon this early public reception, sales were expanded to 733 stores in the Western and Midwestern United States by November 1994.[29]

Despite this early success, the Flavr Savr tomato ultimately never achieved widespread national distribution for a variety of reasons—none of which involved consumer resistance to the technology used to create it.[30] While these tomatoes did have a longer shelf life, there were problems with bruising during shipment.[31] One of the members of the product development team referred to the Flavr Savr as being "engineered for no reason" because of the necessity to utilize the same handling procedures as required with other tomato varieties due to the bruising problems.[32] Additionally, some consumers questioned whether the flavor of the tomatoes was of a quality that was worth saving as reports on the desirability of the tomatoes' flavor were mixed.[33] Thus, the Flavr Savr failed to live up to its billing, and any benefits provided to consumers were minimal at best.

Compounding these problems with the biotechnology, Calgene experienced significant financial problems during the time in which it was developing and marketing Flavr Savr tomatoes.[34] These problems eventually led to the end of Calgene itself, which was acquired by Monsanto.[35] Based upon Monsanto's decision to phase it out of existence, the Flavr Savr tomato failed to bring genetically modified foods into the kitchens and onto the plates of American consumers at any meaningful level.[36] At nearly this same time, however, Monsanto began

28. The sale of the Flavr Savr tomato was protested at both locations by the organization Pure Food Campaign. At the Davis store, a small number of protestors showed their outrage by gathering in the parking lot and throwing tomatoes into a cardboard coffin. This action did not appear to deter public demand, however, as the store doubled its Flavr Savr tomato sales the day immediately following the incident. *Id.*

29. *Id.* at 199.

30. *Id.* at 221.

31. *Id.* at 203.

32. *Id. at* 204. Flavr Savr tomatoes did offer the "back end" advantage of providing an additional seven to ten days of shelf life. *Id.* at 207. Unfortunately, this primarily benefited grocery stores rather than consumers.

33. According to noted restaurateur Alice Waters, the flavor was "not bad," but not suitable for her restaurant. According to one study, those who found the Flavr Savr to be "significantly better than standard supermarket varieties" were only willing to pay an additional ten to fifteen cents per pound for the tomatoes as opposed to the one dollar per pound anticipated by Calgene. *Id.* at 196.

34. Calgene's cost to produce Flavr Savr tomatoes was $10 per pound, and it was selling these tomatoes for $1.99 per pound. Calgene had planned to reduce this per unit cost through a reduction in spoilation, increase in yields, and improved economies of scale from higher sales volumes. *Id.* at 197–98.

35. *Id. at* 220.

36. *Id.* at 222.

the introduction of other products that very rapidly would result in the widespread distribution of genetically modified foods to the American public.

C. Round-up Ready and Bt Products

In 1996, Monsanto commercially introduced a product that would play a significant role in revolutionizing the American food production system—Round-up Ready soybeans.[37] While the Flavr Savr tomato had been genetically modified for the purpose of providing consumers with a value-added output trait, namely better flavor, Round-up Ready soybeans were genetically modified to provide efficiency on the production side. Round-up Ready soybeans contain a gene that provides the soybean plants with glyphosate resistance.[38] Glyphosate is an herbicide, marketed by Monsanto under the trade name Round-up, that kills annual broadleaf weeds and grasses.[39] When Round-up Ready soybeans are planted, farmers can spray their fields with Round-up, and all of the annual weeds will be killed.[40] The Round-up Ready soybeans, however, survive this herbicide application.[41] By planting Round-up Ready soybeans, farmers can have an effective weed control strategy by reducing the overall herbicide application while also minimizing tillage that can increase soil runoff.[42] Upon introduction, Round-up Ready soybeans were very successful commercially, and Monsanto continued to develop other products possessing the glyphosate resistant gene. Round-up Ready cotton and Round-up Ready canola were released in 1997 and Round-up Ready corn was released in 1998.[43]

During this same time period, Monsanto introduced Bt potato, Bt cotton, and Bt corn seeds that were genetically engineered to contain genes from the soil bacterium *Bacillus thuringiensis*.[44] Similar to

37. *See Weed Management: Roundup Ready System*, MONSANTO, http://www.monsanto.com/weedmanagement/pages/roundup-ready-system.aspx (indicating that Monsanto introduced Round-up Ready soybeans in 1996) (last visited May 9, 2014).

38. NIGEL G. HALFORD, GENETICALLY MODIFIED CROPS 60 (2nd ed. 2012).

39. BACKGROUNDER—HISTORY OF MONSANTO'S GLYPHOSATE HERBICIDES, MONSANTO IMAGINE (2005), *available at* http://www.monsanto.com/products/documents/glyphosate-background-materials/back_history.pdf.

40. HALFORD, *supra* note 38, at 60.

41. *Id.*

42. *Id.* at 61–62.

43. *Who We Are: Company History*, MONSANTO, http://www.monsanto.com/whoweare/pages/monsanto-history.aspx (last visited May 9, 2014).

44. Eluned Jones & Stephanie Mercier, *The Power of Biotechnology to Impel Change in the Grain and Oilseed Markets*, 12 WILLIAMETTE J. INT'L L. & DISP. RESOL.

Round-up Ready crops, Bt products are genetically modified to create efficiencies in the production process. By containing this gene, the Bt plants are able to control infestations of insects such as Colorado potato beetles, boll weevils, and European corn borers.[45] When these insects attempt to attach to a genetically modified plant, the Bt gene in the plant causes the insect to be killed. Thus, the crop itself contains the properties of a pesticide. [46] As such, there generally is no need for farmers to apply pesticides to the crop for the purpose of controlling these insects.

Based on widespread acceptance of this new technology by farmers, crops containing the Round-up Ready or Bt gene rapidly began to dominate commodity markets. In 2000, just a few years after their commercial introduction, 54 percent of soybean acreage and 25 percent of corn acreage in the United States was planted with either Round-up Ready or Bt seeds.[47] By 2013, genetically modified crops had attained market domination over their conventional counterparts as 93 percent of soybean acreage and 90 percent of corn acreage in the United States was planted with either Round-up Ready or Bt seeds.[48] Due to the many food products in which corn and soybeans are included as an ingredient, and due to the prevalence of Round-up Ready and Bt crops, approximately 70 to 80 percent of the foods that Americans consume are genetically modified or contain genetically modified ingredients.[49]

49, 63 (2004). The Bt cotton and Bt corn products became very successful, but the Bt potato product was discontinued in 2001 due to producer and consumer resistance. Scott Kilman, *Monsanto's Genetically Modified Potatoes Find Slim Market, Despite Repealing Bugs*, WALL ST. J. (Mar. 21, 2001), http://online.wsj.com/news/articles/SB985128671233949916.

45. *See generally Corn Production: Bt Corn and European Corn Borer*, UNIV. OF MINN. EXTENSION, http://www.extension.umn.edu/agriculture/corn/pest-management/bt-corn-and-european-corn-borer/ (providing a thorough explanation of the manner in which Bt corn impacts the European corn borer) (last visited May 7, 2014).

46. *See Regulating Pesticides: EPA's Regulation of Bacillus Thuringiensis (Bt) Crop*, U.S. ENV'T PROT. AGENCY (May 2002) (discussing plant-incorporated protectants), http://www.epa.gov/oppbppd1/biopesticides/pips/regofbtcrops.htm.

47. *Acreage 2000–2001*, NAT'L AGRIC. STATISTICS SERV. 25–26 (June 29, 2001), http://usda.mannlib.cornell.edu/usda/nass/Acre/2000s/2001/Acre-06-29-2001.pdf .

48. *Acreage 2012–2013*, NAT'L AGRIC. STATISTICS SERV. 25, 27 (June 28, 2013), http://usda01.library.cornell.edu/usda/current/Acre/Acre-06-28-2013.pdf.

49. Opponents and supporters of GMOs agree that our food supply is dominated by genetically modified foods. *See Going GMO-Free: A Toolkit for Grocers*, ORGANIC RETAIL & CONSUMER ALLIANCE, http://oca-orca.org/grocers-toolkit/ (estimating that "70–80 percent of all processed foods contain GMOs") (last visited May 9, 2014); *see also Grocery Manufacturers Association Position on GMOs*, FACTS ABOUT GMOS, http://factsaboutgmos.org/disclosure-statement (estimating that "70–80 percent of the foods we eat in the United States, both at home and away from home, contain ingredients that have been genetically modified") (last visited May 9, 2014).

D. Who Benefits from Genetically Modified Food Products?

In looking at the benefits that are realized from genetic modification, crops are classified as being either first, second, or third generation products.[50] Round-up Ready and Bt products, with their enhanced input traits (*i.e.*, herbicide tolerance and insect resistance respectively), are examples of first generation products. For each of these products, genetic modification enables the product to be produced more efficiently by minimizing the resources that are needed to produce that product. Thus, the primary beneficiaries of first generation genetically modified food products are those who are involved with the production of these crops.

Second generation products, on the other hand, are engineered to possess enhanced output traits.[51] A tomato with more taste, as was sought with the Flavr Savr tomato, is an example of a product with an enhanced output trait. The oft-cited "golden rice," through which genetically engineered rice would deliver vital nutrients to vulnerable populations, is another example of a second generation product.[52] With these crops, the focus of the benefits provided through genetic modification is on the product itself rather than the entirety of the production process. Because the output traits, such as flavor or nutritional properties, have been enhanced, consumers who desire products with these traits are the primary beneficiaries of genetic modification.

Similar to second generation product, third generation products also are focused on providing enhanced output traits. Third generation products, however, have output traits that provide benefits outside the traditional areas of food and fiber.[53] A transgenic goat that produces milk containing human antithrombin is an example of a third generation product that has received the necessary government approvals and is in commercial production on a farm at an undisclosed location in Massachusetts.[54]

50. Patrick A. Stewart & William P. McLean, *Public Opinion Toward the First, Second, and Third Generations of Plant Biotechnology*, 41 IN VITRO CELLULAR & DEVELOPMENTAL BIOLOGY – PLANT 718, 718 (2005), *available at* http://link.springer.com/article/10.1079%2FIVP2005703#.

51. *Id.*

52. *See generally* GOLDEN RICE PROJECT, http://www.goldenrice.org/ (last visited May 9, 2014).

53. Stewart & McLean, *supra* note 50, at 718.

54. Andrew Pollack, *F.D.A. Approves Drug From Gene-Altered Goats*, N.Y. TIMES, Feb. 7, 2009, at B1, *available at* http://www.nytimes.com/2009/02/07/business/07goatdrug.html?pagewanted=all&_r=0.

Through proper marketing, consumers easily can see direct benefits to them from second and third generation products. Consumers may seek out second generation products as being superior to their non-genetically modified counterparts. The history of the Flavr Savr tomato illustrates the point that consumers will readily purchase a genetically modified food, even at a higher price, if they believe they are receiving a better product. With first generation products, however, the benefits to consumers, if any, are more indirect. Genetically modified products may arguably result in lower food prices or in more environmentally friendly agricultural practices, but these purported benefits are not easily quantified or visible to the average consumer. Since the proliferation of genetically modified food products in our collective national diet is the result of first generation products, consumers may question the benefits that they are receiving from genetic modification.

III. STATE MANDATORY GMO LABELING LAWS

A. Oregon Measure No. 27 (2002)

In 2012, California Proposition 37 brought a national focus upon the issue of mandatory GMO labeling, but legal efforts to mandate labeling at the state level began a decade earlier with a ballot initiative in Oregon. During the general election on November 5, 2002, Oregon voters considered a measure that, if approved, would have required a plainly visible label bearing the words "Genetically Engineered" on all foods "sold or distributed in or from Oregon" that contained genetically modified ingredients where those genetically modified ingredients comprised "more than one tenth of one percent of the weight of the product."[55] Labeling also would have been required on dairy and meat products where the subject livestock had been fed, or treated with, genetically modified products.[56] The stated purpose of this Measure was to "create and enforce the fundamental right of the people in Oregon to know if they are buying or eating genetically engineered food and to have the choice in buying or eating foods that have been altered through genetic engineering."[57] Oregon Measure No. 27 was soundly defeated with over 70 percent of voters voting against the Measure.[58] In fact, the Measure failed to obtain a majority of votes in any of Oregon's 36

55. Ballot Measure 27, § (3), (3)(a) (Ore. 2002).
56. *Id.* § (3)(b).
57. *Id.* § (1).
58. NOVEMBER 5, 2002, GENERAL ELECTION ABSTRACT OF VOTES, OR. SEC'Y OF STATE, *available at* http://www.oregonvotes.gov/doc/history/nov52002/abstract/m27.pdf.

counties.[59] Following this resounding defeat, the issue of mandatory GMO labeling largely lie dormant in the public discourse for nearly a decade.

B. California Proposition 37 (2012)

On November 6, 2012, Californians voted on Proposition 37, the California Right to Know Genetically Engineered Food Act.[60] Pursuant to the language of this Proposition, "any food offered for retail sale in California is misbranded if it is or may have been entirely or partially produced with genetic engineering and that fact is not disclosed."[61] Thus, all genetically modified food products would require labeling unless one of nine specifically delineated exemptions applied.[62] Through these exemptions, labeling was not required for food derived from non-genetically engineered animals even if those animals had consumed genetically engineered food or been injected with genetically engineered drugs.[63] Food certified as organic as well as food derived from commodities that were "produced without the knowing and intentional use of genetically engineered seed" also were exempt from labeling requirements.[64] Finally, alcoholic beverages, food prepared for immediate consumption, and medical foods were not required to be labeled.[65] If approved, the labeling requirements contained within Proposition 37 generally would have become effective on July 1, 2014.[66]

In the Proposition, authority to enforce the mandatory labeling requirements was not granted to a state agency. Instead, "any person" had standing to initiate enforcement proceedings, and the court was permitted to award to this person "reasonable attorney's fees and all reasonable costs incurred in investigating and prosecuting the action."[67] There was no corresponding provision for the award of attorney's fees incurred in the defense against a frivolous action.

According to some reports, the drive to require GMO labeling in California through a ballot proposition began as a grass roots effort

59. The highest percentage of "yes" votes was cast in Multnomah County where 40.4 percent of voters approved of the Measure. Lane County, with 36.5 percent of voters voting in approval, recorded the second highest percentage. In every other county, the "no" votes exceeded the "yes" votes by a margin of at least two to one. *Id.*

60. Ballot Measure 37 (Cal. 2012).

61. *Id.* § 3.

62. *Id.*

63. *Id.*

64. *Id.*

65. *Id.*

66. Ballot Measure 37 (Cal. 2012).

67. *Id.* § 4.

among Californians.[68] Others disagree, citing the influence of national pro-GMO labeling organizations throughout the process.[69] Regardless of the genesis of Proposition 37, groups with national interests on both sides of the issue were intensely involved in attempts to influence voters. Companies and organizations such as the Organic Consumers Association, Nature's Path Foods, and Dr. Bronner's Magic Soaps advocated in favor of passage while Monsanto, Grocery Manufacturers Association and a large number of major food and beverage corporations advocated against the Proposition.[70] Ultimately, in this debate, more than $55 million was raised for advocacy efforts by national interest groups, companies, and individuals on both side of the issue—$9.2 million by proponents and $46 million by opponents.[71]

In support of passage, proponents argued that individuals have a right to know what is in their food and that mandatory labeling enables individuals to make an informed choice about potential health risks posed by genetically modified food products.[72] Opponents of the Proposition argued that the government bureaucracy created by a mandatory labeling scheme would result in an increase in food costs without providing any health or safety benefits and that the exemptions to mandatory labeling protected special interest groups.[73] Additionally, opponents took issue with the enforcement provisions in the proposition, arguing that it would encourage frivolous litigation.[74]

On November 6, 2012, California voters rejected Proposition 37, and thus mandatory GMO labeling, by a narrow margin of 51.41 percent to 48.59 percent.[75] Although the proposition was defeated, it would be an error to conclude that the mandatory labeling efforts in California were unsuccessful. Despite being outspent by a margin of more than five to one, more than six million Californians had voted for the Proposition.

68. Annie Spiegelman, *The Spark Behind the California Right to Know Genetically Engineered Food Act of 2012*, HUFFINGTON POST (Feb. 17, 2012, 12:56 pm), http://www.huffingtonpost.com/annie-spiegelman/genetically-engineered-food_b_1245023.html.

69. Jay Byrne & Henry I. Miller, *The Roots of the Anti-Genetic Engineering Movement? Follow the Money!*, FORBES (Oct. 22, 2012), http://www.forbes.com/sites/henrymiller/2012/10/22/the-roots-of-the-anti-genetic-engineering-movement-follow-the-money/.

70. *Prop. 37: Genetically Engineered Foods*, VOTER'S EDGE, http://votersedge.org/california/ballot-measures/2012/november/prop-37 (last visited May 9, 2014).

71. *Id.*

72. *Id.*

73. *Id.*

74. *Id.*

75. STATEWIDE SUMMARY BY COUNTY FOR STATE BALLOT MEASURES, CAL. SEC'Y OF STATE 100–02 (2012), *available at* http://www.sos.ca.gov/elections/sov/2012-general/ssov/ballot-measures-summary-by-county.pdf.

Perhaps an even greater number of voters were in favor of mandatory GMO labeling but did not vote for the Proposition because they did not agree with the specific provisions in this labeling scheme. This is reflected by statements made in various newspaper editorials, which indicated opposition to Proposition 37 but support for mandatory labeling generally.[76] The relative success of the mandatory labeling efforts in California ensured that the debate would not be ending but merely shifting to other fora across the country.

C. Washington Initiative 522 (2013)

One year after the defeat of mandatory labeling in California, Initiative 522 was on the ballot for voters in Washington's general election on November 5, 2013.[77] The script for the public debate on the Initiative, in terms of the Initiative's substantive content, the arguments raised, the advocates involved on both sides, and the spending by those advocates closely mirrored that of California Proposition 37. The Initiative, if approved, would have required labeling of most genetically modified food products in a similar manner to that of the failed California Proposition.[78] Just as in California, spending in opposition to the Initiative—$20.1 million—greatly exceeded that spent advocating in favor of the Initiative—$7 million.[79] Washington voters also responded in a similar manner to California voters with 48.91 percent of Washingtonians voting in favor of the Initiative and 51.09 percent voting against.[80] Thus, mandatory GMO labeling suffered another narrow defeat at the ballot box.

76. *See Endorsement: No on Prop. 37—More Information is Good But Not When It Comes with a Heavy Legal Burden on Small Business*, L.A. DAILY NEWS (Sept. 26, 2012), http://www.dailynews.com/opinion/20120927/endorsement-no-on-prop-37-more-information-is-good-but-not-when-it-comes-with-a-heavy-legal-burden-on-small-business (opining that "once you get past the pleasing outside surface of this proposition . . . it reveals a rotten interior"); *see also No on Proposition 37: Initiative as Written is Sour Plan for Food Labeling*, MODESTO BEE (Sept. 23, 2012), http://archive.today/KDSaA (opining, "This flawed measure would set back the cause of labeling."); *Contra Costa Times Editorial: Voters Should Send Proposition 37 Back for 'Modification'*, CONTRA COSTA TIMES (Aug. 16, 2012), http://www.contracostatimes.com/ci_21328463/contra-costa-times-editorial-voters-should-send-proposition (opining that "voters should send a message that Proposition 37 needs modification").

77. Ballot Measure 522 (Wash. 2013).

78. *Id*. § 3.

79. Niraj Chokshi, *Big Corporate Spending Pays Off in Washington's Genetically Modified Food Fight*, WASH. POST (Nov. 6, 2013), http://www.washingtonpost.com/blogs/govbeat/wp/2013/11/06/big-corporate-spending-pays-off-in-washingtons-genetically-modified-food-fight/.

80. *Initiative to the Legislature 522 Concerns Labeling of Genetically-Engineered Foods*, OFFICE OF THE SEC'Y OF STATE (Nov. 26, 2013),

D. Connecticut Public Act 13-183 (2013)

Across the country, advocates for mandatory labeling laws had success using the more traditional legislative process. On June 25, 2013, Connecticut's governor signed legislation that mandates labeling of "food intended for human consumption" as well as "seed or seed stock that is intended to produce food for human consumption" when that food, seed, or seed stock is genetically modified or contains ingredients that were produced using genetic modification.[81] For such products, the required labeling must contain the words "Produced with Genetic Engineering."[82] Exceptions to labeling are provided for alcoholic beverages, food intended for immediate consumption, most products sold by a farmer directly to a consumer, and non-genetically engineered animals that had been supplied with genetically engineered feed or drugs.[83] In contrast with California Proposition 37 where private enforcement would have been authorized, this law will be enforced by the Commissioner of Consumer Protection.[84] Civil penalties of up to one thousand dollars per day per marketed product are authorized against each person who knowingly violates the statute.[85]

Although the enactment of this mandatory labeling statute in Connecticut was a great victory for proponents of labeling, the statute included conditions that must be satisfied before the law will become effective. Possibly to address the fear that companies would choose to forego doing business in Connecticut rather than complying with its labeling requirements,[86] the statute will not become effective until similar labeling requirements are enacted in neighboring states.

http://vote.wa.gov/results/20131105/State-Measures-Initiative-to-the-Legislature-522-Concerns-labeling-of-genetically-engineered-foods.html.

81. 2013 Conn. Acts 13-183 (Reg. Sess.).

82. CONN. GEN. STAT. § 21a-92c(a).

83. *Id.* § 21a-92(b).

84. *Id.* § 21a-92c(c). Connecticut Governor Dannel P. Malloy may have been referring to problems with a system of private enforcement when he stated, "This bill strikes an important balance by ensuring the consumers' right to know what is in their food while shielding our small businesses from liability that could leave them at a competitive disadvantage." Press Release, Dannel P. Malloy, Governor of Conn., Gov. Malloy and Legislative Leaders Announce Agreement on GMO Labeling Legislation (June 1, 2013), *available at* http://www.governor.ct.gov/malloy/cwp/view.asp?Q=525816&A=4010.

85. CONN. GEN. STAT. § 21a-92c(e). The civil penalty is based upon "each uniquely named, designated or marketed product" not upon "the number of individual packages of the same product" that are mislabeled. *Id.*

86. *See* Duane D. Stanford, *Food Industry Braces for Vermont's GMO Labeling Law*, BLOOMBERG (May 7, 2014), http://www.bloomberg.com/news/2014-05-06/food-industry-braces-for-vermont-s-gmo-labeling-law.html (indicating that food companies may stop sales in Vermont as a result of Vermont's enactment of mandatory GMO labeling).

Specifically, two triggers must be satisfied before the law will become effective. First, four additional states, including one that borders Connecticut, must enact mandatory labeling laws.[87] Second, the aggregate population within eight defined Northeastern states[88] that have mandatory labeling must exceed twenty million according to the 2010 census.[89]

E. Maine Legislative Document 718 (2014)

The Maine legislature joined Connecticut by passing mandatory labeling legislation in June 2013. This legislation, known as An Act to Protect Maine Consumers' Right to Know About Genetically Engineered Food, was enacted on January 12, 2014 without the governor's signature.[90] The provisions of this law bear significant similarity to the Connecticut statute by requiring that "any food offered for retail sale that is genetically engineered must be accompanied by a conspicuous disclosure that states, 'Produced with Genetic Engineering.'"[91] It contains exemptions for alcoholic beverages,[92] restaurants,[93] non-genetically engineered animals that have been fed genetically engineered feed,[94] and medical foods.[95] It also provides for a *de minimus* exception where the total weight of genetically engineered food ingredients are less than 0.9 percent of the total weight of a "packaged processed food."[96] As with the Connecticut law, this statute does not authorize private enforcement. The Commissioner of Agriculture, Conservation, and Forestry is charged with enforcement responsibilities.[97] This law will become effective after five contiguous states, including Maine, enact mandatory labeling laws.[98] If this condition is not satisfied by January 1, 2018, the law will be automatically repealed at that time.[99]

87. CONN. GEN. STAT. § 21a-92c(a).
88. *Id.*
89. *Id.*
90. 2014 Me. Laws 565.
91. ME. REV. STAT. tit. 22, § 2593(1) (2014).
92. *Id.* § 2594(3).
93. *Id.* § 2594(2).
94. *Id.* § 2593(3)B.
95. *Id.* § 2594(3).
96. *Id.* § 2594(3)C.
97. ME. REV. STAT. tit. 22, § 2595(1).
98. 2014 Me. Laws 565, § 2(1).
99. *Id.* § 2(2).

F. Vermont House Bill 112 (2014)

After the enactment of conditional legislation in Connecticut and Maine, Vermont became the first state to initiate mandatory GMO labeling with a so-called "no strings attached" law.[100] Pursuant to the Vermont statute, all food that is offered for sale in Vermont after July 1, 2016 must bear an appropriate label if that food is "entirely or partially produced with genetic engineering."[101] Exemptions, similar in nature to those provided in the Connecticut and Maine legislation, have been provided. Labeling is not required for the following products: (1) food derived from non-genetically modified animals even where they have been fed or injected with genetically modified products;[102] (2) food that has been "grown, raised, or produced" without the "knowing or intentional" use of genetically modified food or seed;[103] (3) food that utilizes genetically engineered enzymes;[104] (4) alcoholic beverages;[105] (5) processed food products containing a *de minimus* amount of genetically modified food ingredients;[106] (6) food that has been verified by an independent organization as not having "been knowingly or intentionally produced from or commingled with food or seed produced with genetic engineering;[107] (7) food prepared for immediate consumption;[108] and (8) medical food.[109]

The Vermont Attorney General is charged with enforcement of this law and has been granted authority to engage in rulemaking for the implementation of the law.[110] Recognizing that a legal challenge to this law is possible, the statute creates a Genetically Engineered Food Labeling Special Fund to be used in any potential litigation arising from the enactment of the statute.[111] House Bill 112 provided for an appropriation from the state of up to $1.5 million into this fund,[112] and immediately upon signing the legislation, Governor Shumlin requested

100. Dana Ford & Lorenzo Ferrigno, *Vermont Governor Signs GMO Food Labeling into Law*, CNN (May 8, 2014), http://www.cnn.com/2014/05/08/health/vermont-gmo-labeling/.
101. VT. STAT. ANN., tit. 9, § 3043 (2014).
102. *Id.* § 3044(1).
103. *Id.* § 3044(2).
104. *Id.* § 3044(3).
105. *Id.* § 3044(4).
106. *Id.* § 3044(5).
107. VT. STAT. ANN., tit. 9, § 3044(6).
108. *Id.* § 3044(7).
109. *Id.* § 3044(8).
110. *Id.* § 3048(b).
111. H.B. 112, § 4(a), 2013–2014 Leg. Sess. (Vt. 2014).
112. *Id.* § 4(b)(2).

that interested individuals contribute to this fund through the Food Fight Fund Vermont website.[113]

IV. QUESTIONS MOVING FORWARD

A. Will State Labeling Mandates Survive?

Upon signing Vermont's GMO labeling law, Governor Shumlin readily acknowledged that the bill would be challenged. According to Governor Shumlin, "There is no doubt that there are those who will work to derail this common sense legislation."[114] Vermont's Attorney General was even more direct in stating that "[t]he constitutionality of the GMO labeling law undoubtedly will be challenged."[115] Within hours of the law's enactment, the Grocery Manufacturers Association (GMA) indicated that it would be one of those who will be pursuing a legal challenge to the law. GMA, which was one of the leading financial contributors to the effort to defeat California Proposition 37, stated in a press release that it would be filing suit against Vermont in federal court within "the coming weeks."[116] Some potential legal bases upon which the law may be challenged include violation of the United States Constitution's dormant Commerce Clause; preemption by the Federal Food, Drug, and Cosmetic Act; and violation of the First Amendment's protection of free speech.[117]

In addition to judicial challenges of the labeling laws enacted by Vermont or other states, Congress may preempt these state laws by enacting federal GMO labeling requirements—either voluntary or

113. Peter Hirschfield, *GMO Bill Signed, Lawsuit Expected; Shumlin Asks for Help with 'Food Fight' Fund*, VT. PUB. RADIO (May 8, 2014), http://digital.vpr.net/post/gmo-bill-signed-lawsuit-expected-shumlin-asks-help-food-fight-fund. *See also Gov. Peter Shumlin Signs First-in-the-Nation Genetically Engineered Foods Labeling Law*, GOVERNOR PETER SHUMLIN (May 8, 2014), http://governor.vermont.gov/newsroom-gmo-bill-signing-release. *See generally*, FOOD FIGHT FUND VT., http://www.foodfightfundvt.org/ (last visited May 10, 2014).

114. *Gov. Peter Shumlin Signs First-in-the-Nation Genetically Engineered Foods Labeling Law*, GOVERNOR PETER SHUMLIN (May 8, 2014), http://governor.vermont.gov/newsroom-gmo-bill-signing-release.

115. *Id.*

116. Press Release, Grocery Mfgs. Ass'n, Vermont GMO Labeling Law Critically Flawed and Costly for Consumers (May 8, 2014), *available at* http://www.gmaonline.org/news-events/newsroom/vermont-gmo-labeling-law-critically-flawed-and-costly-for-consumers/.

117. *See* COUNCIL FOR AGRIC. SCI. & TECH., ISSUE PAPER NO. 54, THE POTENTIAL IMPACTS OF MANDATORY LABELING FOR GENETICALLY ENGINEERED FOOD IN THE UNITED STATES (April 2014), *available at* http://www.cast-science.org/download.cfm?PublicationID=282271&File=1030c801400168ac1bd58033386142766220TR (identifying potential legal issues with state mandatory GMO labeling laws).

mandatory—for the purpose of establishing national uniformity on the issue. A number of advocates have called for such national standards,[118] and federal legislators have introduced bills reflecting two different approaches to GMO labeling. In a manner similar to the state laws that have been enacted, The Genetically Engineered Food Right-to-Know Act would require GMO labeling throughout the country.[119] On the other side of the issue, The Safe and Accurate Food Labeling Act of 2014 would require labeling only where the U.S. Food and Drug Administration determines that the genetically modified food product presents a health or safety risk.[120] The Safe and Accurate Food Labeling Act also would impose standards upon the voluntary labeling of products, both upon those claiming to contain as well as those claiming to be free of genetically modified food products.[121]

B. Why Does Mandatory GMO Labeling Enjoy Popular Support?

Looking at the recent legal developments, it is apparent that a substantial segment of the population supports mandatory GMO labeling. Although the ballot measures in California and Washington failed, the voting results were incredibly close. Nearly seven million people in these two states voted in favor of the labeling proposals even though there were intense advocacy efforts directed against the measures.[122] Additionally, some of those who voted against these ballot measures may not have done so because they were opposed to mandatory GMO labeling generally, but rather because they believed the specific provisions within these ballot measures to be flawed.[123]

118. *See* Press Release, Grocery Mfgs. Ass'n, Vermont GMO Labeling Law Critically Flawed and Costly for Consumers (May 8, 2014), *available at* http://www.gmaonline.org/news-events/newsroom/vermont-gmo-labeling-law-critically-flawed-and-costly-for-consumers/ (decrying the creation of "a 50-state patchwork of GMO labeling policies).

119. S. 809, 113th Cong. (2013); H.R. 1699 113th Cong. (2013).

120. H.R. 4432, 113th Cong. (2014).

121. *Id*. § 103.

122. California Proposition 37 received 6,088,713 votes. STATEWIDE SUMMARY BY COUNTY FOR STATE BALLOT MEASURES, CAL. SEC'Y OF STATE 102 (2012), *available at* http://www.sos.ca.gov/elections/sov/2012-general/ssov/ballot-measures-summary-by-county.pdf. Washington Initiative 522 received 857,511 votes. *Initiative to the Legislature 522 Concerns Labeling of Genetically-Engineered Foods*, OFFICE OF THE SEC'Y OF STATE (Nov. 26, 2013), http://vote.wa.gov/results/20131105/State-Measures-Initiative-to-the-Legislature-522-Concerns-labeling-of-genetically-engineered-foods.html.

123. *See Endorsement: No on Prop. 37—More Information is Good But Not When It Comes with a Heavy Legal Burden on Small Business*, L.A. DAILY NEWS (Sept. 26, 2012), http://www.dailynews.com/opinion/20120927/endorsement-no-on-prop-37-more-information-is-good-but-not-when-it-comes-with-a-heavy-legal-burden-on-small-business (opining that "once you get past the pleasing outside surface of this proposition

While the voting results from California and Washington may have reflected an evenly divided electorate, there was little opposition to mandatory GMO labeling within the legislatures of Connecticut, Maine, and Vermont. In enacting their respective laws, the votes of the legislative bodies were not close. The Connecticut House of Representatives approved House Bill 6527 by a vote of 134 to 3 while the Senate approved the same bill with a unanimous vote of 34 to 0.[124] In Maine, the House of Representatives voted in favor of House Paper 718 by a vote of 141 to 4 while the Senate acted unanimously by a vote of 35 to 0.[125] In Vermont, the voting results were only marginally closer with the House of Representatives approving House Bill 112 by a vote of 114 to 30 and the Senate approving it by a vote of 28 to 2.[126] Viewing these six legislative chambers in the aggregate, 486 legislators voted in favor of mandatory GMO labeling bills while only 39 legislators voted in opposition.

Strong support for labeling of GMOs does not appear to be limited to New England and the Pacific coast. A national study conducted by the New York Times estimated that between 90 and 96 percent of the general public supported the identification of foods containing genetically modified ingredients.[127] This study also revealed that a significantly lower percentage of the public actually was informed on relatively basic facts about the scope of genetically modified food products in the marketplace. Less than half of survey respondents were aware that most processed and packaged foods contain genetically

. . . it reveals a rotten interior"); *see also No on Proposition 37: Initiative as Written is Sour Plan for Food Labeling*, MODESTO BEE (Sept. 23, 2012), http://archive.today/KDSaA (opining, "This flawed measure would set back the cause of labeling."); *Contra Costa Times Editorial: Voters Should Send Proposition 37 Back for 'Modification'*, CONTRA COSTA TIMES (Aug. 16, 2012), http://www.contracostatimes.com/ci_21328463/contra-costa-times-editorial-voters-should-send-proposition (opining that "voters should send a message that Proposition 37 needs modification").

124. *Vote for HB-6527 Roll Call 351*, CONN. GEN. ASSEMBLY, http://www.cga.ct.gov/2013/VOTE/H/2013HV-00351-R00HB06527-HV.htm (last visited May 27, 2014); *Vote for HB-6527 Sequence Number 513*, CONN. GEN. ASSEMBLY, http://www.cga.ct.gov/2013/VOTE/S/2013SV-00513-R00HB06527-SV.htm (last visited May 27, 2014).

125. *Roll-calls for LD-718*, STATE OF ME. LEGISLATURE, http://www.mainelegislature.org/LawMakerWeb/rollcalls.asp?ID=280047295 (last visited May 27, 2014).

126. VT. JOURNAL H., 2013–2014 Sess., at 1260–61 (Apr. 23, 2014), http://www.leg.state.vt.us/docs/2014/journal/HJ140423.pdf#page=23; VT. JOURNAL S., 2/13–2014 Sess., at 717 (Apr. 16, 2014), *available at* http://www.leg.state.vt.us/docs/2014/journal/SJ140416.pdf#page=3.

127. Allison Kopicki, *Strong Support for Labeling Modified Foods*, N.Y. TIMES (July 27, 2013), http://www.nytimes.com/2013/07/28/science/strong-support-for-labeling-modified-foods.html?_r=0.

modified ingredients and nearly 40 percent believed that most or a lot of fruits and vegetables were genetically modified.[128]

The fact that labeling of genetically modified food products has such strong public support despite the overwhelming weight of scientific authority defending the process raises the natural question—Why? Certainly, on the surface, most people would accept that more information is desirable. Opponents of mandatory labeling, however, argue that there will be a cost to consumers associated with this provision of information.[129] With their support of mandatory labeling, consumers either do not accept that argument, are willing to pay the costs for this information, or have not sufficiently thought about the connection between cost and labeling.

For many consumers, the support for mandatory labeling likely goes beyond the idea that more information on any issue is always desirable and reflects some level of discomfort with the notion of genetically modified food products. According to the aforementioned New York Times study, three-quarters of the general public expressed some level of concern about the presence of genetically modified foods in our food supply.[130] Even those within the food industry have acknowledged that many "consumers remain uncomfortable with GMOs."[131]

One possible explanation for the public's discomfort with GMOs is that consumers may not understand the relevant science and they may fail to see how they benefit from this science. Certainly, valid arguments can be made that an efficient production system will lead to reduced food prices.[132] Valid arguments also can be made that genetically modified

128. *Id.*

129. *See* Eliza Barclay & Jeremy Bernfield, *Bracing for a Battle, Vermont Passes GMO Labeling Bill*, NPR (Apr. 24, 2014), www.npr.org/blogs/thesalt/2014/04/24/306442972/bracing-for-a-battle-vermont-passes-gmo-labeling-bill (highlighting the argument of food industry groups that mandatory labeling would cause increased costs to be passed on to consumers).

130. Allison Kopicki, *Strong Support for Labeling Modified Foods*, N.Y. TIMES (July 27, 2013), http://www.nytimes.com/2013/07/28/science/strong-support-for-labeling-modified-foods.html?_r=0.

131. *On GMOs*, GEN. MILLS, http://www.generalmills.com/en/ChannelG/Issues/on_biotechnology.aspx (last visited May 11, 2014).

132. *See* Marc Van Montagu, *The Irrational Fear of GM Food*, WALL ST. J. (Oct. 23, 2013), http://online.wsj.com/news/articles/SB10001424052702303680404579141741399966328 (opining that extensive regulation of genetically modified foods increasing production costs such that only large multinational companies can afford to be involved in bringing products to market).

products provide environmental benefits.[133] These purported benefits are indirect, however, and they are difficult to quantify and communicate with certainty to consumers. Where consumers fail to see benefits from the application of technology, they will be more sensitive to perceived risks inherent in that technology. If consumers fail to see any personal or societal benefits in the process of genetically modifying food, then they likely will be skeptical of this technology if there are any risks at all to public health or the environment.

Consumers also may be wary of genetically modified foods because they feel there has been a lack of transparency in the manner in which these products have appeared on their grocery store shelves. Genetically modified food products have come to dominate our food supply in a relatively short period of time. Many people may have only recently become fully aware of the extent to which our food supply contains genetically modified food products. This may generate a sentiment that the food industry moved too quickly in introducing products into commerce without getting public buy-in of the genetic modification process. A sudden awareness of the prevalence of genetically modified food products also may lead consumers to question the regulatory process if they perceive that the food system has been changed significantly with little public input.

C. What Do Advocates Seek to Accomplish Through Mandatory Labeling?

The ostensible goal of mandatory labeling is to provide consumers with facts so that they can make informed choices about the food they purchase.[134] Underlying that goal is the belief that consumers have a right to know what is in the food that they and their families consume.[135] Will mandatory labeling, however, truly provide consumers with more information? Educated consumers today already possess the information to know with a great degree of certainty whether or not they are consuming genetically modified products. There are a relatively small number of commodities on the market today that are genetically

133. *See generally Database of the Safety and Benefits of Biotechnology*, CROPLIFE INT'L, http://biotechbenefits.croplife.org/ (last visited May 11, 2014).

134. *See* VT. STAT. ANN., tit. 9, § 3041(1) (2014) (listing as one of the purposes of the statute, "Establish a system by which persons may make informed decisions regarding the potential health effects of the food they purchase and consume . . . ."); *see also* ME. REV. STAT. tit. 22, § 2591(2) (2014) (listing as one of the purposes of the statute, "Assist consumers . . . to make informed purchasing decisions").

135. *See* 2014 Me. Laws 565 (entitled as "An Act to Protect Maine Food Consumers' Right to Know about Genetically Engineered Food").

modified.[136] Since more than 90 percent of corn and soybeans grown in the United States are genetically modified, there is a very high likelihood that any product containing corn or soybean is genetically modified.[137] For those consumers who wish to avoid genetically modified food, they can avoid those products which contain corn, soybeans, or other ingredients that are likely to be genetically modified. If a consumer is not satisfied with reviewing the ingredient list of each food product, he or she can choose organic products to be as certain as is possible that the products are GMO-free. Since it is difficult to avoid all products containing corn or soybeans and since organic food normally sells for a premium price, neither of these options may be optimal, but they are methods by which a consumer can avoid genetically modified products.

To satisfy the stated goal of providing consumers with a choice, it is necessary for both GMO and GMO-free products to be on the market and available for purchase. In advocating for the consumers' right to choose, the proponents of labeling seem to overlook the fact that the right to choose already exists. The Non-GMO Project provides consumers with information about GMO-free products on the market.[138] While at the grocery store, consumers also can look for products being marketed as non-GMO. Moreover, there is nothing inherent in a mandatory labeling law that will increase the amount of GMO-free products that are available for purchase. The amount of GMO-free products on the market will increase as a result of the labeling law only if there is an increased consumer demand for those products as a result of the labeling law. The increase in consumer demand for non-GMO products does not depend upon the enactment of a mandatory labeling law. The recent reformulation of Cheerios to be GMO-free provides an example where a company increased the amount of GMO-free products on the market based upon perceived consumer demand.[139]

Mandatory labeling undoubtedly will provide information to consumers, but the real goal of mandatory labeling is not simply to provide information. The real goal of mandatory labeling is to influence

136. The primary GMO crops raised in the United States include soybeans, corn, cotton, canola, sugar beets, alfalfa, papaya, and squash. U.S. DEP'T AGRIC., GENETICALLY ENGINEERED CROPS IN THE UNITED STATES 10 (2014).

137. *Acreage 2012–2013*, NAT'L AGRIC. STATISTICS SERV. 25, 27 (June 28, 2013), http://usda01.library.cornell.edu/usda/current/Acre/Acre-06-28-2013.pdf (listing the prevalence of acreage planted to genetically modified corn and soybeans at ninety and ninety-three percent, respectively).

138. NON-GMO PROJECT, http://www.nongmoproject.org/ (last visited May 12, 2014).

139. Richard Levick, *Are GMO-Free Cheerios the First Domino*, FORBES (Jan. 9, 2014), http://www.forbes.com/sites/richardlevick/2014/01/09/are-gmo-free-cheerios-the-first-domino/.

behavior so that consumers make a particular choice, namely the choice to avoid those products with the genetically modified label. If consumers treat the GMO label as if it is akin to a skull and crossbones and stop purchasing products bearing this mark, then manufacturers and retailers will act accordingly. If manufacturers and retailers believe that consumers, in sufficient numbers, will shun the GMO label, then consumers will not have the opportunity to make an informed choice as these products will never even reach grocery store shelves or restaurant tables. There is some evidence that businesses have a low risk tolerance on this issue. For example, Kroger and Safeway have announced that they will not sell the genetically modified AquAdvantage salmon, should this fish be commercially marketed.[140]

Another purpose of mandatory labeling may be to highlight to all consumers the fact that much of our food supply is genetically modified. If sufficient numbers of the general public find this to be unacceptable, pressure may be placed upon legislators and other elected officials to revisit the appropriateness of the existing regulatory framework.

D. What Is the Mandatory Labeling Debate Really About?

Genetically modified food products cannot exist without consumer acceptance at some level. If consumers reject these products or if they send signals to manufacturers and retailers that they may reject these products, genetically modified food products will fade away from the marketplace. The debate about mandatory labeling is really seeking an answer to another more fundamental question—are we as a society comfortable with our food supply being dominated by genetically modified products? One potential answer to this question is that we are completely at ease with, and perhaps even excited by, recent biotechnological advances in the food industry. At the other extreme, the answer to this question is that we need to reduce the prevalence, or even eliminate the presence, of genetically modified food products in our food system for the preservation of our health and the environment.

If mandatory labeling is instituted, upon each visit to the grocery store, consumers will be asked very directly many times whether they accept or reject genetically modified food products. Will consumers avoid products that contain the GMO label? Will manufacturers reformulate their products or alter their purchasing patterns to avoid a potential consumer rejection of their GMO labeled products? What will be the extent of marketing opportunities created for non-GMO products?

140. *Kroger, Safeway Will Nix GMO Salmon Regardless of FDA Decision*, FOOD SAFETY NEWS (Mar. 4, 2014), http://www.foodsafetynews.com/2014/03/kroger-safeway-turn-down-gmo-salmon-regardless-of-fda/.

What will be the price differential, if any, between comparable GMO and non-GMO products? We won't know the answers to all of these questions until mandatory labeling becomes a reality. Based upon the resources that are being devoted to this issue in battle after battle by the major national interest groups, however, it is apparent that both sides believe that the marketplace for genetically modified food products can be affected significantly by the initiation of mandatory labeling requirements. Both sides recognize that through the labeling issue, the broader issue of whether biotechnology in our food supply should be encouraged or restricted can be addressed.

Even if opponents to mandatory labeling are successful in striking down state requirements or in lobbying for more favorable federal legislation, consumer acceptance or rejection of genetically modified food nevertheless remains an important issue facing the food industry. Consumers do not need mandatory labels in order to make a decision to reject genetically modified food. Consumers do have some options, and companies have shown that, at least in some instances, they will be responsive to consumer demands.

In their efforts to convince consumers to accept (or not to reject) genetically modified food products, biotechnology companies must understand that it is imperative that consumers understand how they are benefitting from the science behind genetic modification. Focusing on bringing second generation products to market—creating a better product in the eyes of consumers—would be one effective way of generating a positive impression of genetic modification with consumers. If biotechnology companies fail to convince consumers that genetically modified food products have benefits that outweigh any perceived risks, our food supply may undergo yet another transformation.

V. CONCLUSION

A debate on the propriety of establishing mandatory GMO labeling at the state level is well underway. Based on the results of recent ballot initiatives and state legislation, it is apparent that the concept of mandatory labeling enjoys significant support. Vermont has led the way with its enactment of a "no-strings attached" GMO labeling law, but federal courts and Congress will ultimately determine how the labeling issue will proceed. Regardless of how court challenges or preemptive federal legislation develop on the labeling issue, consumers still must decide whether they support the existing genetically modified food system. As such, it is reasonable to expect that the battle centered on whether or not consumers should accept or reject GMOs will continue to

move forward regardless of the outcome of current mandatory labeling debate.