

GENETICALLY MODIFIED ORGANISMS AND SCHOOL LUNCHES: GENETICALLY MODIFIED FOODS SHOULD NOT BE ALLOWED IN OUR NATION'S SCHOOLS

I. INTRODUCTION

“Empowered Moms, Healthy Kids” is a mission that Moms Across America incorporates to raise awareness about toxic exposures to children across America and their goal is to decrease and, eventually, eliminate the use of genetically modified foods in school districts throughout the United States.¹ In recent years, the use of genetically engineered (“GE”) crops in agriculture has increased dramatically.² This dramatic increase is due to GE crops becoming more tolerant to disease, pests, pesticides, and drought.³ As a result, the use of GE crops enables farmers to increase crop production and profits.⁴ The products made from GE crops are produced as genetically modified organisms (“GMO”) and used in foods.⁵ In recent years, several research studies have been published from scientists and doctors that have shown that there may be health risks associated with GMO products.⁶ Since this research has been completed, over sixty countries worldwide have made the choice to label GMOs when these products are being sold to consumers, and some of these countries have gone as far as banning these products in their foods.⁷ In the United States, there

¹ *For the Freedom to Choose our Families Food!*, MOMS ACROSS AMERICA <http://www.momsacrossamerica.com/about> (last visited Aug. 08, 2016).

² *See GMO foods: What you need to know. Why is there so much fuss over genetically modified ingredients?*, CONSUMER REPORTS (Feb. 26, 2015), <http://www.consumerreports.org/cro/magazine/2015/02/gmo-foods-what-you-need-to-know/index.htm>.

³ *Id.*

⁴ *Id.*

⁵ *What is a GMO? Agricultural Crops that Have a Risk of Being a GMO*, NON-GMO PROJECT, <http://www.nongmoproject.org/learn-more/what-is-gmo> (last visited Jul. 18, 2016).

⁶ *GMO foods: What you need to know. Why is there so much fuss over genetically modified ingredients?*, *supra* note 2.

⁷ *Id.*

are no federal regulations that make it mandatory for producers to label products that contain genetically modified foods.⁸ A few states within the United States have enacted legislation and taken the steps toward labeling products that contain GMO content with the idea of consumers having the right to know what they are consuming.⁹

There have been research studies conducted in the past several years that have correlated certain medical disorders with the use of GMOs which include the increased use of herbicides that have been deemed “probably carcinogenic,” and the decreased nutritional value in foods such as corn, soybeans, and other types of fruits and vegetables.¹⁰ This is a major concern for parents who have little control or knowledge of whether their children are consuming GMOs in school lunches.

Throughout the years, this nation has made progress in improving school lunches by banning junk foods from public schools due to the high rate of obesity among the younger generation.¹¹ For instance, in 2010, the Obama administration passed legislation called The Healthy, Hunger-Free Kids Act.¹² Schools across the nation have now opted to serve children healthier foods.¹³ Schools have also taken the initiative to remove soda and snack vending machines from school campuses to allow for healthier foods options.¹⁴ This is a major step towards improving our children’s health, however, it is concerning that school districts continue to serve children foods that contain GMOs.¹⁵

⁸ Luis Acosta, *Restrictions on Genetically Modified Organisms: United States*, LIBRARY OF CONGRESS (Mar. 2014), <https://www.loc.gov/law/help/restrictions-on-gmos/usa.php>.

⁹ See Stephanie Strom, *Bill to Stop States Requiring Labeling of GMO Foods Fails*, THE NEW YORK TIMES (Mar. 16, 2016), http://www.nytimes.com/2016/03/17/business/bill-to-stop-states-requiring-labeling-of-gmo-foods-fails.html?_r=0.

¹⁰ *GMO Foods: What You Need to Know. Why is there so much fuss over Genetically Modified Ingredients?*, *supra* note 2. (Carcinogen is any substance, radionuclide, or radiation that is an agent directly involved in causing cancer. It has the ability to damage the genome or to the disruption of cellular metabolic processes).

¹¹ See Lauren Kaplin, Article, *A National Strategy to Combat the Childhood Obesity Epidemic*, 15 U.C. DAVIS J. JUV. L. & POL’Y 347 (2011).

¹² *Id.* at 351-352.

¹³ *Id.* at 356.

¹⁴ *Id.* at 370.

¹⁵ See Jenna Chandler and Sarah Crescenzo, *Moms Want GMOs Out of School Lunches*, THE ORANGE COUNTY REGISTER (Jun. 7, 2013), <http://www.ocregister.com/articles/genetically-511663-modified-school.html>.

Other countries have addressed the issue with GMOs and have seen raised health concerns regarding consumption of these products, but the United States has not taken a step towards protecting its citizens by regulating the use of GMOs.¹⁶ If the United States chooses not to do it through labeling, then the U.S. should at least protect the younger generations who are in school by enacting legislation that bans these products from school lunches and snacks.¹⁷

This article will discuss the importance of Congress and school districts within the United States initiating legislation to ban GMO products in the food they serve to their students. Part II discusses what GMOs are and where they can be found. Part III will discuss the regulations of GMOs in other countries and which countries have chosen to label GMOs or have taken a step further to ban them completely from production. Part IV discusses the agencies within the United States that regulate GMOs and what their roles are in the regulation. Part V will discuss the history of different State Legislative Senate Bills which would have required labeling of GMO products, which States have enacted legislation to label GMO products, and those States that have failed to pass labeling legislation. Part VI discusses the health effects that GMOs have on humans and the environment. Part VII examines the Kid's Act and provides an overview of the National School Lunch Program and what states have done to incorporate healthier food options in their school districts in order to help the issues of childhood obesity. Part VIII discusses what Congress can do to help further improve school lunches by banning GMOs from their food products and what options they could adopt in place of their current lunch options. Finally, this article concludes with a policy discussion for potential improvements in school lunches, banning GMOs in food options in school districts, and the future of GMOs in the United States.

II. WHAT ARE GENETICALLY MODIFIED ORGANISMS?

Through GE, an organism's genetic material can be artificially manipulated in a laboratory.¹⁸ This process is how GMOs are

¹⁶ Lorraine Chow, *It's Official: 19 European Countries Say 'No' to GMOs*, ECOWATCH (Oct. 5, 2015), <http://www.ecowatch.com/its-official-19-european-countries-say-no-to-gmos-1882106434.html>.

¹⁷ See Acosta, *supra* note 8.

¹⁸ *What is a GMO? Agricultural Crops that Have a Risk of Being a GMO*, *supra* note 5.

manufactured and technology has been beneficial to farmers all over the world.¹⁹ GE crops have allowed farmers to increase yields and overcome hardships.²⁰ A little over twenty years ago, scientists discovered that injecting Deoxyribonucleic Acid (“DNA”) into plants or animal cells would recreate a desired trait or characteristic.²¹ Since the 1990’s, there has been a rapid growth in the use of GMOs, especially in corn, cotton, and soy.²² The United States is the leading producer of GMOs in the world.²³ Specifically, the United States accounts for over forty percent of the world’s production of GE crops.²⁴ Moreover, in 2013, roughly ninety percent of all corn, cotton, and soybeans grown in the United States were genetically engineered.²⁵

The two traits most commonly introduced into GE crops are herbicide tolerance and insect resistance.²⁶ These traits enable crops to become resistant to certain pests and pesticides.²⁷ In addition, GE crops require an increased amount of herbicides because of the increase of weeds in these crops.²⁸ Genetic modifications that increase the crops tolerance to herbicides has increased the amount of herbicides used on GE crops.²⁹ This practice has produced an epidemic of super-weeds that have evolved to become immune to glyphosate, an essential element in herbicides.³⁰ The increased use of herbicides has raised many concerns among doctors and scientists because herbicides have recently been deemed “probably carcinogenic.”³¹ Many countries

¹⁹ Acosta, *supra* note 8.

²⁰ *Id.*

²¹ Tara Ratanun, Article, *Genetically Modified Organisms and Environmental Justice: Should Labeling be Mandatory on Products Containing Genetically Engineered Ingredients?*, 42 W. ST. L. REV. 111, 112 (2014).

²² Acosta, *supra* note 8.

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.*

²⁶ *Id.*

²⁷ *See id.*

²⁸ *GMO Foods: What You Need to Know. Why is there so much fuss over Genetically Modified Ingredients?*, *supra* note 2.

²⁹ *Id.*

³⁰ *Id.*

³¹ *GMO Foods: What You Need to Know. Why is there so much fuss over Genetically Modified Ingredients?*, *supra* note 2; *Glyphosate*, 112 IARC MONOGRAPHS ON THE EVALUATION OF CARCINOGENIC RISKS TO HUMANS 2, 4 (2015), available at <http://monographs.iarc.fr/ENG/Monographs/vol112/mono112-09.pdf>.

throughout the world have regulations for the use of GMO products and GE crops, some have made the decision to ban the use of GMOs and some have heavily regulated them for consumer protection.³²

III. REGULATING GENETICALLY MODIFIED FOODS IN OTHER COUNTRIES

There are currently more than sixty countries that require labeling of GMOs.³³ Many of these countries have gone as far as choosing not to grow GE crops.³⁴ Beginning in 2004, European nations have required that all products containing GMOs be labeled for consumers.³⁵ The EU's principles driving this legislation are "safety, freedom of choice, and case-by-case evaluations."³⁶ Many EU countries regulate the use of GMOs due to concerns of public health and the environment.³⁷ All twenty-eight countries in the EU require GMO labeling, or they have the option of opting out and banning GMOs all together.³⁸ There are currently nineteen countries in the European Union ("EU") that have banned growing GMOs.³⁹

The EU Commission has mandated that all GMOs receive authorization prior to entering the market.⁴⁰ This requirement includes any seeds used for growing GMO crops.⁴¹ The commission has given countries within the EU the option to choose the "opt-out clause" for GMO production giving them the freedom to restrict or prohibit the

³² *GMO Foods: What You Need to Know. Why is there so much fuss over Genetically Modified Ingredients?*, *supra* note 2.

³³ *Id.*

³⁴ *Two Thirds of EU States Reject GMO Crops, File Cultivation Opt-Out Requests*, RT (Oct. 5, 2015), <https://www.rt.com/news/317638-eu-gmo-cultivation-opt-out/>.

³⁵ *The European Regulatory System: Genetic Engineering, Plants, and Food*, GMO COMPASS, http://www.gmo-compass.org/eng/regulation/regulatory_process/156.european_regulatory_system_genetic_engineering.html (last visited Jul. 18, 2016).

³⁶ *Id.*

³⁷ Chow, *supra* note 16.

³⁸ *Id.*

³⁹ *Id.* (The countries that have opted out of growing GMOs are Austria, Belgium for the Wallonia region, Britain for Scotland, Bulgaria, Croatia, Cyprus, Denmark, France, Wales of Northern Ireland, Italy, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland and Slovenia).

⁴⁰ *Id.*

⁴¹ *The European Regulatory System: Genetic Engineering, Plants, and Food*, *supra* note 35.

use of authorized GMOs.⁴² Approval of each GMO is only granted under certain conditions, which include safety and freedom of choice.⁴³

Prior to approval, GMOs must be tested using the most advanced technology and knowledge currently available to be considered just as safe as a non-GMO or organic crops.⁴⁴ The GMO product must be deemed safe and cannot pose a threat to human health.⁴⁵ It must also be deemed safe for the environment.⁴⁶ Many environmental concerns arise from the increased use of pesticides and herbicides.⁴⁷ Many environmentalists have noted that bees and Monarch butterflies are being affected by the increased use of GE crops because there is now less pollination from bees and the maize plants are putting Monarch butterflies at risk.⁴⁸ They have noticed that with the increase use of GE crops these insects are now becoming endangered.⁴⁹ This is a type of factor that the EU will take into consideration when it comes to the environment and whether or not to approve a GMO.⁵⁰ If the process set forth by the EU is not used then the GMO will not be approved.⁵¹

This regulation process that the EU has set forth permits consumers and farmers the freedom to choose whether they want to facilitate the use of GE Crops and GMO products.⁵² All consumers must be granted a freedom of choice when using or purchasing GMOs.⁵³ The procedures that the EU employs to regulate GMO products allow consumers further peace of mind because it outlines the requirements necessary to use and grow GE crops and grants the consumer a choice

⁴² *Two Thirds of EU States Reject GMO Crops, File Cultivation Opt-Out Requests*, *supra* note 34.

⁴³ *The European Regulatory System: Genetic Engineering, Plants, and Food*, *supra* note 35.

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ Emily Glass, *Environmental Impact of GMOs*, ONE GREEN PLANET (Aug. 12, 2013), <http://www.onegreenplanet.org/animalsandnature/the-environmental-impact-of-gmos>.

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *The European Regulatory System: Genetic Engineering, Plants, and Food*, *supra* note 35.

⁵² *See id.*

⁵³ *Id.*

and allows labeling of the products to be an easier process.⁵⁴ GMOs that receive authorization are held to certain requirements.⁵⁵ All consumers, including farmers, are given the option to either reject or use products from GMOs.⁵⁶ In addition, farmers and producers are also given the freedom to produce foods without the use of GE.⁵⁷ If GMOs are used, then producers and farmers are required to handle them in a way that prevents mixing of the conventional products with GMO products.⁵⁸

The freedom of choice aspect of the law is accomplished through the mandatory requirement of labeling of GMO products.⁵⁹ Labeling ensures the consumer's freedom to choose what products they purchase.⁶⁰ The label must clearly state whenever GMOs are intentionally used in a food product.⁶¹ This allows all consumers to make an informed decision when purchasing products.⁶² Traceability is also an element of the freedom of choice concept because all products containing GMOs must be documented to allow for traceability.⁶³ All products containing GMOs are required to be labeled even if the final product has no detection of GMO content traceable.⁶⁴ All GMOs are regulated on a case-by-case basis.⁶⁵ For instance, some of the requirements differ depending on whether the GE product is a processed product that is not made of living material, or whether the product is capable of being cultivated and propagated.⁶⁶ In other words, the type of regulation and process the product goes through varies when different GE plants are used.⁶⁷ Other countries are noticing that their consumers should have a right to know what is in

⁵⁴ *See id.*

⁵⁵ *Id.*

⁵⁶ *The European Regulatory System: Genetic Engineering, Plants, and Food, supra* note 35.

⁵⁷ *Id.*

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² *Id.*

⁶³ *Id.* (Traceability is an unbroken record of documentation or an unbroken chain of measurements and associated uncertainties).

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ *Id.* (Propagated: the plant or animal is bred by natural processes from the parent stock; Cultivate: prepare and use land for crops or gardening.)

⁶⁷ *Id.*

their foods and have enforced regulations on GMO products.⁶⁸ These countries have taken the initiative to either regulate GMOs or ban them completely from production.⁶⁹

IV. REGULATION AGENCIES WITHIN THE UNITED STATES

In the 1980s there was a document created called the “Coordinated Framework for Regulation of Biotechnology.”⁷⁰ This document discussed all domestic genetically modified organisms and genetically engineered issues, and created the framework for regulating these topics.⁷¹ Three federal government agencies are currently in charge of regulating GMOs and GEs: The United States Department of Agriculture (“USDA”), which regulates the GE crops and GMO plants under the Plant Protection Act; the Food and Drug Administration (“FDA”), which regulates the GMOs in foods, drugs and biological products under the Food, Drug and Cosmetics Act; and the Environmental Protection Agency (“EPA”), which regulates the use of GMO pesticides and microorganisms.⁷²

In the early 1990s, the FDA determined that there was not a material difference in GMO foods and conventional foods, and therefore, no approval process exists for foods that contain GMOs within the United States.⁷³ The regulations set forth by these agencies merely regulate how GE crops and GMOs are produced.⁷⁴

A. United States Department of Agriculture

The USDA’s primary responsibility in GMO regulations is to approve the testing of genetically engineered plants and the

⁶⁸ See *Two Thirds of EU States Reject GMO Crops, File Cultivation Opt-Out Requests*, *supra* note 34.

⁶⁹ *Id.*

⁷⁰ Acosta, *supra* note 8.

⁷¹ *Id.*

⁷² *Id.*

⁷³ Gregory N. Mandel, Article, *Toward Rational Regulation of Genetically Modified Food*, 4 SANTA CLARA JOURNAL OF INTERNATIONAL LAW 21 (Jan. 1, 2006), Available at: <http://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=1015&context=scujil>. (Material Difference: the crop or product is rated as equivalent or is of equal value in terms of non-GMO and non-GE crops).

⁷⁴ Acosta, *supra* note 8.

commercialization of agriculture crops that contain GMOs.⁷⁵ The primary authority comes from the Plant Protection Act (“PPA”), which is regulated by the Animal and Plant Health Inspection Service (“APHIS”).⁷⁶ The PPA grants authority to the Secretary of Agriculture to restrict or prohibit the movement in interstate commerce, entry, importation, or exploration of any plant or product if necessary to prevent the introduction of a noxious weed or plant pest within the United States.⁷⁷ The APHIS gives authorization of GMO plant use in different ways: notification procedure, permitting process, or determining non-regulated status.⁷⁸

1. Notification Procedure

The notification procedure is available to any plant that is not classified as a “noxious weed, or weeds”.⁷⁹ Certain criteria of the notification procedure state that “the plant must be a species that APHIS has determined may be safely introduced, the genetic material must be stably integrated, [and] the expression of the genetic material must not result in plant disease.”⁸⁰ When a notification is sent to APHIS, the agency will respond within a certain amount of time with approval or denial.⁸¹ If denied, the applicant may reapply for a permit.⁸²

2. Permit Procedure

The permit procedure requires an applicant to submit information regarding: the donor and recipient organisms, the way the organism is made, the purpose of the regulated article, the intended destination, use, and distribution.⁸³ If the permit is granted then “it is subject to conditions designed to ensure both that the regulated article remains contained and that APHIS can maintain regulatory oversight.”⁸⁴

⁷⁵ Mandel, *supra* note 73.

⁷⁶ Acosta, *supra* note 8.

⁷⁷ *Id.*

⁷⁸ *Id.*

⁷⁹ *Id.*

⁸⁰ *Id.*

⁸¹ *Id.*

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *Id.*

3. Determination of Non-regulated Status

Those plants that do not pose a risk may be eligible for determination of non-regulated status.⁸⁵ A petition must include detailed biological information on the article, published and unpublished scientific studies, data from tests, and any other information to assist in the process of determining whether or not the plant is considered harmful.⁸⁶ Upon receiving the petition from the applicant, APHIS will put public notice in the federal register and will allow up to sixty days for public comment.⁸⁷ After this process, APHIS has 180 days to approve or deny the application.⁸⁸

B. Food and Drug Administration

In 1992, the FDA made a policy statement addressing the regulations of GMO foods and noted that most cases where GMOs are used, they will be treated and given the same procedure as conventionally bred plants.⁸⁹ This means that it is unlikely that the FDA will regulate GMO foods because the food will be treated as “naturally grown” crops.⁹⁰ FDA approval would be required prior to the product being marketed only if the GMO product is significantly different in its function, composition, or structure from the substances that are already established currently in non-GMO foods.⁹¹

The FDA’s primary statutory authority is the Federal Food, Drug, and Cosmetic Act (FFDCA), which authorizes the agency to regulate . . . adulterated food, defined as food that contains poisonous . . . food additives, which include any substance that may become a component or otherwise affect the characteristics of any food.⁹² This agency prohibits the sale of these foods. The FFDCA requires food additives which are any substances added to food, to be approved “safe for use before they can be marketed.”⁹³

⁸⁵ Acosta, *supra* note 8.

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² *Id.*

⁹³ *Id.*

C. Environmental Protection Agency

The EPA is the agency that regulates pesticides and microorganisms developed through GE.⁹⁴ The Federal Insecticide, Fungicide, and Rodenticide Act (“FIFRA”) was developed by the EPA to regulate the manufacturing, sale and use of pesticides.⁹⁵ Under the regulations, the pesticide must not cause any unreasonable adverse effects on the safety of the environment, and the safety of food consumption.⁹⁶ The EPA requires that all pesticides be registered prior to being distributed commercially.⁹⁷ The applicant must give information regarding the testing done, identify the product, labeling of the product, residues and any other information pertaining to the safety of the environment.⁹⁸

V. STATES TAKING A STANCE FOR LEGISLATION REQUIREMENT OF LABELING GMO PRODUCTS

Several states have tried, but failed, to pass legislation that would require food labeling of any GMO products sold in stores.⁹⁹ Many of the Senate bills referred to this as the “Right to Know” legislation.¹⁰⁰ Currently, Vermont, Maine, and Connecticut are the only states in the United States that require labeling of GMO foods.¹⁰¹ These states have seen an increase in recent polls indicating that a majority of citizens want to know if there is GMO content in their foods.¹⁰² In addition,

⁹⁴ Acosta, *supra* note 8.

⁹⁵ *Id.*

⁹⁶ *Id.*

⁹⁷ *Id.*

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ See generally *Food Labeling: Genetically Engineered Food*, S. R. 1381 (2014), http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB1381 (States who have drafted legislation or who have passed legislation to require GMO products to be labeled have referred to their legislation as a “right to know” bill meaning all consumers who purchase products have a right to know what they are purchasing. California legislatures wrote a similar bill that would have required GMO products to be labeled and stated that Californian’s had a right to know what they were purchasing and what was in the product that they would consume. This source is for California but most State’s legislation had the same goal, allowing consumers to have a “Right to Know”).

¹⁰¹ *GMO Foods: What You Need to Know. Why is there so much fuss over Genetically Modified Ingredients?*, *supra* note 2.

¹⁰² See Mark Bittman, *GMO Poll Results (and More)*, THE NEW YORK TIMES (Feb. 24, 2011), <http://bittman.blogs.nytimes.com/2011/02/24/gmo-poll-results-and-more>.

about half of those who stated they would want to know also said they would not purchase genetically modified foods.¹⁰³

In 2014, California legislatures wrote Senate Bill 1381 which would have required labeling of GMO foods in grocery stores.¹⁰⁴ The purpose behind the bill was to allow consumers to make the decision of what types of foods they bought and to make them aware of whether the food was produced with genetic engineering, so they are able to make an informed decision.¹⁰⁵ Unfortunately, the bill did not pass through the Senate.¹⁰⁶ However, there are a few counties in California that have successfully banned the use of GMO crops, including: Humboldt, Trinity, Santa Cruz, Marin, Mendocino, and just recently, Sonoma County.¹⁰⁷ With the most recent election on November 08, 2016, Sonoma County voters approved to prohibit the use of GE crops.¹⁰⁸ In recent years, California has seen an increase in approval rate from its residents wanting to ban the use of GE crops and GMO products.¹⁰⁹ This comes shortly after the “Right-to-Know” legislation that had recently failed senate approval.¹¹⁰ These initiatives illustrate that California residents, along with citizens of other states, would like to see a change in the legislation that regulate the growth of GMO products.¹¹¹

VI. GROWING CONCERNS ABOUT HEALTH EFFECTS

Although GMOs are not categorically banned from the United States’ food supply, recent scientific studies have demonstrated that they have the potential to introduce toxins, new allergens (especially among children), and cause alterations to the nutrients in foods.¹¹² The new toxins primarily arise from the increased use of herbicides and

¹⁰³ *See id.*

¹⁰⁴ *Food Labeling: Genetically Engineered Food*, *supra* note 100.

¹⁰⁵ *Id.* at 2.

¹⁰⁶ *See generally id.* (The bill failed to pass in May 2014).

¹⁰⁷ *See Sonoma County Bans GMO Crops*, ECOWATCH, (Nov. 10, 2016), <http://www.ecowatch.com/sonoma-county-ban-gmos-2088044719.html>. (The election was held two days prior to this report on November 8, 2016).

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ *See id.*

¹¹¹ *See id.*

¹¹² *GMO Foods: What You Need to Know. Why is there so much fuss over Genetically Modified Ingredients?*, *supra* note 2.

more recently the use of older herbicides.¹¹³ Several years ago, older herbicides were taken off of the market and replaced with the new formulas because the older herbicides used more toxic chemicals that were more harmful for human consumption and the environment.¹¹⁴

Since 1992, the use of herbicides in agriculture has skyrocketed.¹¹⁵ As farmers increase their use of GE crops, they also increase their use of herbicides.¹¹⁶ This is because GMOs are bred to be more tolerant to herbicides.¹¹⁷ However, as a result of increased exposure to herbicides, weeds have become more resistant.¹¹⁸ In fact, researchers have contributed the prevalence of the “super weed,” a particularly resistant strain of weed, to GE crops.¹¹⁹

Generally, to kill “super weeds,” farmers use Roundup, which is sold generically as glyphosate.¹²⁰ Today, corn, soybeans, and other GMO crops are genetically engineered to be resistant to glyphosate.¹²¹ However, as the weeds evolve to become more resistant to glyphosate, farmers are starting to use older combinations of toxic herbicides.¹²² Scientists and researchers have become extremely alarmed by the increased use of herbicides in agriculture because of the potential impact they may have on the human body.¹²³

Glyphosate was discovered in the 1950s but had no real pharmacological use.¹²⁴ A chemist at Monsanto later discovered glyphosate could be used as an effective herbicide and Monsanto began marketing Roundup as an herbicide.¹²⁵ This herbicide went on

¹¹³ Georgina Gustin, *Resistant Weeds Leave Farmers Desperate*, ST. LOUIS POST-DISPATCH (Jul. 17, 2011), http://www.stltoday.com/business/local/article_f01139be-ace0-502b-944a-0c534b70511c.html.

¹¹⁴ KI McElrath, *Corporate Power Run Amok? Monsanto*, THE TRIAL LAWYER 47, 48 (Summer 2016)

¹¹⁵ *GMO Foods: What You Need to Know. Why is there so much fuss over Genetically Modified Ingredients?*, *supra* note 2.

¹¹⁶ *Id.*

¹¹⁷ Gustin, *supra* note 113.

¹¹⁸ *Id.*; *Glyphosate*, *supra* note 31

¹¹⁹ *Glyphosate*, *supra* note 31.

¹²⁰ Gustin, *supra* note 113.

¹²¹ *GMO Foods: What You Need to Know. Why is there so much fuss over Genetically Modified Ingredients?*, *supra* note 2.

¹²² Gustin, *supra* note 113.

¹²³ *See* McElrath, *supra* note 114 at 48.

¹²⁴ *Id.*; *Glyphosate*, *supra* note 31.

¹²⁵ McElrath, *supra* note 114 at 48.

the market in 1974.¹²⁶ Initially, Roundup was only to be used on non-agricultural products, but it was eventually approved for all agriculture use.¹²⁷ The major compound in the formulation of Roundup is a carbon-based compound containing phosphorus.¹²⁸ The compounds in glyphosate have been used as insecticides, and have also been used to make other toxins such as nerve gas.¹²⁹ If glyphosate is consumed it can be fatal to humans.¹³⁰ According to Lewis' Dictionary of Toxicology, the compounds found in glyphosate are among the deadliest poisons ever developed.¹³¹

Plants primarily absorb Roundup through their leaves with small amounts by the root system.¹³² Once in the plant system, Roundup works to stop the production of weeds.¹³³ As a result of glyphosate's effectiveness as an herbicide, Monsanto developed a number of genetically modified crops to tolerate glyphosate.¹³⁴

The increased use of glyphosate potentially affects consumer health due to the residue from the chemicals that end up on the food as well as within the food when the product is absorbed.¹³⁵ A large group of scientists, doctors, and other health professionals have reported studies demonstrating correlations between the exposure to the herbicide and to increased risks of non-Hodgkin lymphoma, reproductive issues, and other birth defects.¹³⁶

Although these concerns have been raised, the EPA still does not require any safety assessments for GE crops.¹³⁷ In the United States, "all uses are eligible for registration on the basis of finding that glyphosate does not pose unreasonable risks or adverse effects to humans or the environment."¹³⁸

There is increased scientific evidence that shows a direct connection between glyphosate and a range of health issues, which include non-

¹²⁶ *Id.*

¹²⁷ *Id.*

¹²⁸ McElrath, *supra* note 114 at 48.

¹²⁹ *Id.*

¹³⁰ *Id.*

¹³¹ *Id.*

¹³² *Id.*

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ *GMO Foods: What You Need to Know. Why is there so much fuss over Genetically Modified Ingredients?*, *supra* note 2.

¹³⁷ McElrath, *supra* note 114 at 49.

¹³⁸ *Glyphosate*, *supra* note 31.

Hodgkin lymphoma.¹³⁹ In March 2015, the International Agency for Research on Cancer (“IARC”), a branch of the World Health Organization, published a report on glyphosate, the primary ingredient in a most commonly used herbicide.¹⁴⁰ The IARC classified glyphosate as “probably carcinogenic,” and was supported by a thousand studies.¹⁴¹ IARC also reported a “strong” evidence for genotoxicity.¹⁴² This indicates that the glyphosate substance can cause cellular damage and mutations at the DNA level.¹⁴³ This is alarming because genetic mutations and cellular damage to DNA may result in the formation of cancerous tumors.¹⁴⁴ IARC’s findings are based on laboratory tests and real world situations.¹⁴⁵

It is suspected that the largest producer of a popular widely used herbicide, Monsanto, has been aware of these health risks for approximately thirty years.¹⁴⁶ Monsanto continues to publicly insist that the product is harmless to humans.¹⁴⁷ Monsanto has rejected the report put out by IARC in March 2015 stating that the report was erroneous.¹⁴⁸ The reason as to why the health risks are just making their way out is because the effects of glyphosate are gradual and do not affect everyone nor are they immediately apparent.¹⁴⁹

This situation is similar to the discovery of the effects of asbestos and tobacco on humans.¹⁵⁰ Several years ago, it was believed that asbestos was safe to use for industrial purposes and that tobacco had no harmful effects to humans.¹⁵¹ Scientific evidence has proven otherwise, as these products cause serious health effects at the cellular level.¹⁵² The reason it took so many years for scientific evidence to show these health effects is because the damage did not occur immediately.¹⁵³ The victims who were exposed to these products did

¹³⁹ McElrath, *supra* note 114 at 49.

¹⁴⁰ McElrath, *supra* note 114 at 47.

¹⁴¹ *Id.*

¹⁴² *Id.*

¹⁴³ *Id.*

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

¹⁴⁶ *Id.* at 48.

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

¹⁵¹ *See id.*

¹⁵² *Id.*

¹⁵³ *Id.*

not show symptoms for several years and when the symptoms did show, it was too late to do anything about it.¹⁵⁴ Now, there is scientific evidence showing that, like asbestos and tobacco, exposure to glyphosate may cause damage that occurs at the cellular level.¹⁵⁵

Two Swedish studies published in the May 2002 edition of *Leukemia and Lymphoma*, showed an increased correlation between non-Hodgkin lymphoma and herbicides.¹⁵⁶ Prior to this study, another paper published in *Cancer Research* showed a fifty percent increase in non-Hodgkin lymphoma over the last fifteen years.¹⁵⁷ Researchers had discovered that a compound of glyphosate was a contributing factor to the increase in the cases of non-Hodgkin lymphoma.¹⁵⁸ A report published in the journal *Entropy* in 2013 found that the residue from glyphosate remained on the produce long after harvest and packing, which adds to the effects of the toxic substances.¹⁵⁹ This report demonstrated that glyphosate had an insidious negative impact on the human body in which inflammation caused by the chemicals damaged the cellular systems, which manifested slowly over time.¹⁶⁰

Another paper published a year after in the *International Journal of Environmental Research and Public Health* showed more scientific evidence that there was a connection, over three decades, between a “striking increase” of non-Hodgkin lymphoma among agriculture workers and exposure to different chemicals used in herbicides, including glyphosate.¹⁶¹ “The meta-analysis from this study also found solid evidence of a connection between glyphosate and a specific type of non-Hodgkin lymphoma, known as B-cell lymphoma, a form of cancer that attacks immune cells.”¹⁶² Several other studies released in different countries showed the same evidence of the connection between non-Hodgkin lymphoma and herbicides.¹⁶³ Several of these studies have been published since 2013.¹⁶⁴

¹⁵⁴ *Id.*

¹⁵⁵ See McElrath, *supra* note 114 at 48.

¹⁵⁶ *Id.* at 49.

¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

¹⁵⁹ *Id.* at 48.

¹⁶⁰ *Id.*

¹⁶¹ *Id.* at 49.

¹⁶² *Id.*

¹⁶³ *Id.*

¹⁶⁴ *Id.*

In April 2016, the EPA released a report stating that glyphosate was not likely to be carcinogenic.¹⁶⁵ The studies that the EPA reviewed found that there was no evidence that was convincing to show a connection between glyphosate and human health concerns.¹⁶⁶ However, in May 2016 the EPA, after publishing this report with thirteen members of the review committee's approval, removed the April 2016 report from the EPA website stating that "it had been published 'inadvertently,' and its review of the product had yet to be completed."¹⁶⁷ It has been speculated by several journals that the EPA used only the "scientific research" that Monsanto used in their reports.¹⁶⁸

In 2015, two farm workers who had developed cancer filed lawsuits against Monsanto.¹⁶⁹ Enrique Rubio, who filed the first lawsuit, worked in different states as a field worker and used Roundup in the fields.¹⁷⁰ In 1995, Enrique Rubio was diagnosed with bone cancer, and believes it stemmed from exposure to Monsanto's Roundup weed killer sprayed on several vegetable crops in the fields where he worked.¹⁷¹ On the same day that this lawsuit was filed, another lawsuit by Judi Fitzgerald was filed stating the same allegations as Enrique Rubio.¹⁷² She was diagnosed with Leukemia in 2012.¹⁷³ Both lawsuits claim that the company falsely labeled the product and assured the public that the product was safe for use and harmless to humans and the environment.¹⁷⁴ Both lawsuits presented scientific evidence from IARC regarding the possible human carcinogen used in the products main ingredient glyphosate.¹⁷⁵ It is suspected that several lawsuits will be presented in the next several years concerning these same issues.¹⁷⁶

¹⁶⁵ Thom Hartman & The Daily Take Team, *The EPA's Ties to Monsanto Could be Disastrous for the US*, THE TRIAL LAWYER, (Summer 2016).

¹⁶⁶ McElrath, *supra* note 114.

¹⁶⁷ Hartman & The Daily Take Team, *supra* note 165.

¹⁶⁸ McElrath, *supra* note 114.

¹⁶⁹ Lorraine Chow, *Monsanto Sued by Farm Workers Claiming Roundup Caused their Cancers*, ECOWATCH (Sep. 30, 2015), <http://www.ecowatch.com/monsanto-sued-by-farm-workers-claiming-roundup-caused-their-cancers-1882104874.html>.

¹⁷⁰ *Id.*

¹⁷¹ *Id.*

¹⁷² *Id.*

¹⁷³ *Id.*

¹⁷⁴ *Id.*

¹⁷⁵ *Id.*

¹⁷⁶ *Id.*

In 2015, California was the first state in the United States that required warning labels on agricultural products.¹⁷⁷ Most recently on January 27, 2017, in a case brought by Monsanto suing the EPA's office of Environmental Health Hazard Assessment in California, the Fresno County Superior Court Judge Kristi Kapetan has tentatively ruled that California is permitted to label Roundup as a carcinogen.¹⁷⁸ California will be the first State that will require labeling on Roundup as a probable carcinogen as evidenced by the study published by IARC.¹⁷⁹ Once the ruling is made, California legislatures will move forward with the warnings.¹⁸⁰ "Once a chemical is added to a list of probable carcinogens, the manufacturer has one year before it must attach the warning label."¹⁸¹ California will list glyphosate under Proposition 65.¹⁸² This would be a large step in providing consumer awareness of the dangers of this product and an increased use of it on GMO crops.¹⁸³

This issue has raised significant concerns among citizens, including parents, whom have little to no control over what their children are served in schools.¹⁸⁴ Since scientific research has been published regarding the increased use of herbicides on GE crops, several organizations have been formed, including Moms Across America, to take initiative to remove GMO foods from their children's schools.¹⁸⁵

VII. TAKING A STEP TOWARDS IMPROVING SCHOOLS NUTRITION

¹⁷⁷ Sontaya Rose and Scott Smith, *California Clears Hurdle for Cancer Warning Label on Roundup*, ABC 30 (Jan. 27, 2017), <http://abc30.com/news/california-clears-hurdle-for-cancer-warning-label-on-roundup/1724702/>.

¹⁷⁸ Robert Rodriguez, *Fresno Judge Rejects Monsanto's Bid to Block State from Listing Chemical as Cancer Causing*, THE FRESNO BEE (Jan. 27, 2017 at 2:48 PM), <http://www.fresnobee.com/news/business/agriculture/article129228309.htm:l>.

¹⁷⁹ Rose and Smith, *supra* note 177.

¹⁸⁰ *Id.*

¹⁸¹ *Id.*

¹⁸² Rodriguez, *supra* note 178. (California's proposition 65 from American Cancer Society: "also called the Safe Drinking Water and Toxic Enforcement Act, was enacted in 1986. It is intended to help Californians make informed decisions about protecting themselves from chemicals known to cause cancer, birth defects, or other reproductive harm").

¹⁸³ *See id.*

¹⁸⁴ Chandler and Crescenzo, *supra* note 15.

¹⁸⁵ *Id.*

In recent years, America has been combatting an obesity epidemic among not only adults, but particularly among children.¹⁸⁶ The percentage of overweight or “at risk” of becoming overweight children in 2004 was thirty-three percent.¹⁸⁷ Research has shown that these children who are obese or overweight at a young age develop complications with their health at a young age or as they get older.¹⁸⁸ These health concerns include type two diabetes, sleep disorders, poor immune function, skin problems, and high blood pressure.¹⁸⁹ Long-term health risks also include high cholesterol, stroke, heart disease, and osteoarthritis.¹⁹⁰ If the percentage of children who are obese or overweight continues to grow then America will have an expensive health care costs that could be prevented.¹⁹¹ With these shocking statistics, the legislature saw the need for change in school meals and nutrition programs.¹⁹²

In 2010, congress passed legislation called “The Healthy, Hunger-Free Kids Act,” also known as “The Kids Act,” which allows more funding for school meals and nutrition programs in schools to which in turn allows children to have more access to healthier foods choices.¹⁹³ The goal of The Kids Act was to remove all competitive foods, such as pizza, fries, hamburgers, etc., that were frequently sold in cafeterias, snack bars, and vending machines that included unhealthy snacks and foods that contained a high amount of fat.¹⁹⁴ These foods include burgers and pizza, carbonated drinks, ice cream, chips, and other unhealthy treats.¹⁹⁵ A large portion of children’s calorie intake is at school, so cafeterias are a setting to help teach eating habits.¹⁹⁶ Schools are the ideal setting to promote programs that teach children how to have and maintain a healthy life style.¹⁹⁷ Since this legislation was enacted, several school districts throughout the nation have made

¹⁸⁶ See Kaplin, *supra* note 11 at 347.

¹⁸⁷ Kaplin, *supra* note 11 at 353.

¹⁸⁸ *Id.* at 353-354.

¹⁸⁹ *Id.*

¹⁹⁰ *Id.* at 355.

¹⁹¹ *Id.*

¹⁹² *Id.*

¹⁹³ *Id.* at 351-352.

¹⁹⁴ *Id.* at 369.

¹⁹⁵ *Id.*

¹⁹⁶ *Id.* at 356.

¹⁹⁷ *Id.*

changes in their school lunch menus and options in their snacks.¹⁹⁸ They have also removed soda machines and junk food vending machines from their campuses to allow for healthier, nutritional options.¹⁹⁹

In addition to the Kids Act, several states have adopted additional programs to help improve their school's nutrition programs.²⁰⁰ In California, the California Department of Education implemented the "Fresh Fruit and Vegetable Program" ("FFVP") which will reimburse schools who offer students a free fruit and vegetable snack during school days.²⁰¹ The FFVP is a program that was created by the USDA to reimburse school districts at the federal level.²⁰² At a state level, the California Department of Education ("CDE") administers the funds from the FFVP to select schools that have opted to join this program.²⁰³ The federal assistance program is a yearlong grant for these schools that have implemented the program.²⁰⁴ The purpose of the program is to allow schools to provide more free fresh fruit or vegetable snacks during the day to students as a supplement to the School Breakfast Program as well as the National School Lunch Program.²⁰⁵ This allows these schools to teach students about better eating and nutritional habits.²⁰⁶ California has been participating in this program since 2008 with only twenty-four schools, which has now grown to 403 school sites with \$12.7 million in funding for the 2016-2017 school year.²⁰⁷

This has been a step that the United States has taken towards changing schools' nutritional programs. The next step towards a healthier lifestyle and future for the younger generation is to regulate the option of having GMO products in school nutritional programs.

VIII. RECOMMENDATION

¹⁹⁸ *See id.*

¹⁹⁹ Kaplin, *supra* note 11 at 370.

²⁰⁰ *See id.*

²⁰¹ *California Fresh Fruit and Vegetable Program*, CALIFORNIA DEPARTMENT OF EDUCATION, <http://www.cde.ca.gov/ls/nu/sn/caffvp.asp> (last visited Jul. 13, 2016).

²⁰² *Id.*

²⁰³ *Id.*

²⁰⁴ *Id.*

²⁰⁵ *Id.*

²⁰⁶ *Id.*

²⁰⁷ *Id.*

A. The Need for Legislation to Ban GMO Foods in School Cafeterias

Schools in America are serving children meals that contain GMOs and parents are becoming more concerned now that they have become more informed about GMOs.²⁰⁸ The United States has taken the stance that genetically modified foods are deemed safe since there are no “material differences” in the make of GMOs and conventional foods, although, other countries seem to have a different view.²⁰⁹

With the exception of three, several states in the United States have failed to pass legislation making it a requirement to label GMO foods.²¹⁰ Public opinion polls have demonstrated that a majority of United States citizens want to see more labeling of GMO foods in their stores and half of those have said they would not purchase GMO foods if they knew that the products they purchased contained GMOs.²¹¹ There are concerns not only among people in the United States but across the world about GMO foods and something needs to be done to protect the younger population in this country who do not have much choice of the food they consume.²¹²

A group of mothers in California, concerned about what foods were being served to their children, formed an organization called Moms Across America.²¹³ One of the Co-Founders, Zen Honeycutt, started noticing that her son’s allergies were becoming worse and some other odd behaviors were developing such as increased allergies to foods, and acting differently at school and at home.²¹⁴ After conducting some research, she realized that this could be a result of her son being served genetically modified meals in school.²¹⁵

Moms Across America supports and promotes all proposals that involve improving their children’s health and food options in schools.²¹⁶ They were a large supporter of California’s proposition 37 which would have required labeling of GMOs in California had it

²⁰⁸ Chandler and Crescenzo, *supra* note 15.

²⁰⁹ Acosta, *supra* note 8.

²¹⁰ *GMO Foods: What You Need to Know. Why is there so much fuss over Genetically Modified Ingredients?*, *supra* note 2.

²¹¹ Bittman, *supra* note 102.

²¹² *See GMO Foods: What You Need to Know. Why is there so much fuss over Genetically Modified Ingredients?*, *supra* note 2.

²¹³ Chandler and Crescenzo, *supra* note 15.

²¹⁴ *Id.*

²¹⁵ *Id.*

²¹⁶ Chandler and Crescenzo, *supra* note 15.

passed.²¹⁷ The organization has visited their school districts to discuss the rising concerns about the meals being served in school districts and to talk about the possibility of removing GMO products from school meals.²¹⁸ The concerns raised by some of the school districts supervisors revolved around the cost behind banning the use of GMO foods in the districts.²¹⁹

One option that school districts can incorporate in banning the use of GMOs in school meals is to prepare the meals themselves in the cafeteria rather than using packaged meals.²²⁰ If meals were cooked on campuses this would reduce the amount of some products that contain GMOs in them and this would be a step to eliminating GMOs in school meals.²²¹

Moms Across America has also given school districts the option of contracting with a company called Choicelunches which would provide school districts with healthy, non-GMO options for their meals.²²² Choicelunches would be a healthier option and do not have meals that contain GMO products, but it does come at an expense.²²³ However, if school districts chose to make their own meals rather than purchasing pre-made meals it would cost \$1.50 less than going with the Choicelunches option.²²⁴ These expenses could be implemented with the same ideas as the FFVP in which the federal government helps subsidize programs such as Choicelunches.²²⁵

Another recommendation would be for the school districts and the Federal Government to make an initiative to subsidize schools that opt

²¹⁷ *Id.*

²¹⁸ *Id.*

²¹⁹ *Id.*

²²⁰ *Id.*

²²¹ *Id.*

²²² *Id.*

²²³ *Id.*

²²⁴ *Id.*

²²⁵ See generally California Fresh Fruit and Vegetable Program, CALIFORNIA DEPARTMENT OF EDUCATION, <http://www.cde.ca.gov/ls/nu/sn/caffvp.asp> (last visited Jul. 13, 2016) (Choicelunches would be implemented with the same concept as FFVP. Here, the “Kid’s Act,” a federal legislation, subsidizes States that join in the legislation and the States, like the FFVP program in California, and subsidizes school districts that choose to implement the program and provide healthier food options. In addition to healthier food choices, federal legislation, like the “Kid’s Act,” would implement the Choicelunches program and subsidize school districts for opting to use the program).

to remove GMO foods from school lunches.²²⁶ For example, the “Kids Act” has subsidized funding to school meal and nutrition programs for schools that have served more nutritious meals.²²⁷ This would be the same concept, when a school district has opted to remove GMO foods from school, they would be subsidized.²²⁸ This would be a difficult policy to incorporate but in the long run, it saves the younger generation from future health concerns that are currently being raised by scientific evidence and prevent them from being exposed further to possible carcinogens.²²⁹

This policy recommendation may be difficult to incorporate because of the strong support behind the use of GE crops in America.²³⁰ Although other countries have made the decision to label GMO products or prohibit the use of them, America is still a strong supporter of the idea that GE crops are safe and GMO products are safe to consume.²³¹

The other difficulty in incorporating this new policy is the cost that would come along with it.²³² If costs are the issue, what the Federal Government can consider is to incorporate the ban of GMO use in schools into the already existing Kids Act, so it would not be necessarily an extra cost because it is another subsidy, it would solely be adding another requirement to the Act.²³³ It may require that the Government supplement another dollar or less into the subsidy because of the costs of organic foods but the dollar raise is nothing

²²⁶ See Part VII. of this comment in 201.

²²⁷ Kaplin, *supra* note 11 at 367.

²²⁸ See Part VII. of this comment.

²²⁹ See Part VI. of this comment.

²³⁰ See Part IV. of this comment.

²³¹ See part IV. of this comment in 69.

²³² Chandler and Crescenzo, *supra* note 9. (The cost of Choicelunches would be \$1.50 more than if the schools made the choice to prepare their own meals on campus. Choicelunches delivers organic, non-GMO foods and therefore they cost more than a lot of foods that are grown and prepared with GMO products. If this was incorporated into the “Kid’s Act” it may cost a bit more money than what they are now subsidizing because the current act only requires that school’s provide healthier food options).

²³³ See generally Kaplin, *supra* note 11 at 351. (This recommendation would be implemented with the same concept as the Healthy, Hunger-Free Kids Act. Here, the “Kid’s Act,” a federal legislation, subsidizes States that join in the legislation and subsidizes school districts that choose to implement the program and provide healthier food options. In addition to healthier food choices, federal legislation, like the “Kid’s Act,” would remove all GMO products from their food options and subsidize school districts for opting to use the program).

compared to the health care costs that may come in the future if the research done on GMOs effects shows to be costly.²³⁴ The money that would be invested in finding a cure in the future for the highly probable carcinogenic aspect of GMOs would be greater than the extra dollar subsidized for providing organic foods to schools.

The benefits of my recommendation would help reduce the amount of GMO consumption that there is in America.²³⁵ This would reduce the possibility of increased cancer risks in America that may occur due to the insidious effects of GMO consumption.²³⁶ Children would be the largest beneficiary of this policy because they do not have a choice in what types of foods they eat now and families may lose control of what their children consume while at school.²³⁷ This would ensure that we reduce the possible risks in the future of cancer and would also ensure that children are getting the best nutrition possible. This policy not only benefits the younger generation, but also benefits the Government from having to pay for increased health care costs if there is an increased rise in cancer in the future from the consumption of GMO foods.

IX. CONCLUSION

About forty percent of United States crops contain GMOs, making the U.S. the leading country that produces GMOs daily.²³⁸ Several other countries have made the choice to require labeling of these products and several countries have gone as far as banning GMOs

²³⁴ See generally *id.* (This recommendation would be implemented with the same concept as the Healthy, Hunger-Free Kids Act. Here, the “Kid’s Act,” a federal legislation, subsidizes States that join in the legislation and subsidizes school districts that choose to implement the program and provide healthier food options. In addition to healthier food choices, federal legislation, like the “Kid’s Act,” would remove all GMO products from their food options and subsidize school districts for opting to use the program).

²³⁵ See generally *id.* (This recommendation would be implemented with the same concept as the Healthy, Hunger-Free Kids Act. Here, the “Kid’s Act,” a federal legislation, subsidizes States that join in the legislation and subsidizes school districts that choose to implement the program and provide healthier food options. In addition to healthier food choices, federal legislation, like the “Kid’s Act,” would remove all GMO products from their food options and subsidize school districts for opting to use the program).

²³⁶ See Part VI of this comment.

²³⁷ See Part VI of this comment.

²³⁸ See Part II of this comment in 24.

from their crops.²³⁹ Public polls conducted in the United States show that a majority of the population would like to have labeling of GMO products so they know what they are purchasing, and they can make an informed decision on what they are buying.²⁴⁰ Many people around the world, including citizens in the United States, are becoming more aware that GMO foods are becoming an increasing issue and consumers are demanding for more regulations.

Throughout the twentieth century, as research had progressed, evidence gradually started to show that tobacco and asbestos were carcinogenic but before this finding, several humans were exposed to these deadly toxins and it was too late for several people to prevent the risk of cancer.²⁴¹ The recent concerns that have been raised by IARC, which have deemed GMO products “probably carcinogenic” due to increased use of herbicides, show that strict regulations should be put in place to protect consumers from future health risks of cancer.²⁴² GMOs have been used for nearly thirty years and research is now providing further evidence to the dangers of the increased use of herbicides and human consumption of these products.²⁴³ Since health risks have become more evident in recent years, the United States agencies which regulate GMO’s should address the matter of creating heavier regulations for their use or our legislatures should enact legislation banning GMO products from school districts.²⁴⁴

Our younger population has no say in what they can eat while in school and many families cannot afford to make their children lunches giving them no choice but to allow their children eat what the schools are serving.²⁴⁵ There are concerns about future health risks with GMO foods and this research is becoming more evident.²⁴⁶ If our nation is not going to require labeling of GMO foods then at least give our children a chance to consume foods that do not contain GMOs and reduce the possibility of later suffering from the irreversible consequences from consuming these products.

²³⁹ See Part III of this comment.

²⁴⁰ See Part VIII of this comment in 102.

²⁴¹ See Part VI of this comment in 155.

²⁴² See Part VI of this comment in 141.

²⁴³ See Part VI of this comment.

²⁴⁴ See Part VI of this comment.

²⁴⁵ See Part VIII of this comment.

²⁴⁶ See Part VI of this comment in 136.

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