



# BEYOND PESTICIDES

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Statement of  
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In Support of  
**SB778**

Health - General - Genetically Engineered Food - Labeling Requirements  
before the  
Education, Health, and Environmental Affairs Committee, Maryland Senate  
Annapolis Maryland  
March 11, 2014

Honorable Chair and members of the Committee, thank you for this opportunity to offer testimony concerning this important piece of legislation. I am Jay Feldman, Executive Director of Beyond Pesticides, a national, grassroots, membership organization that represents community-based organizations, bridging farmer and consumer interests to improve protections from pesticides and promote alternative pest management strategies that reduce or eliminate a reliance on toxic pesticides. Our membership includes residents of Maryland and spans the 50 states and groups around the world.

We are submitting this testimony in support of SB778 – Health - General - Genetically Engineered Food - Labeling Requirements.

As you are aware, this important legislation requires that certain foods must be labeled if more than .9% by weight of the food contains genetically engineered (GE) ingredients. This bill would not affect farmers, restaurants, bake sales, or cafeterias. The label would appear on the front or back of the processed food package, or on the shelf in the case of produce.

We believe that this legislation is long overdue. Residents of Maryland should have the right to know whether or not their food contains GE ingredients. This is especially true as concerns about the health and environmental impacts of GE food continue to grow in Maryland. By adopting this legislation Maryland would join the growing group of states and consumer groups that are demanding valuable information for consumers so they can make educated choices on what food is best for their family.

## GE Ingredients are Fundamentally Different

Consumers want GE ingredients labeled because they understand GE crops are fundamentally different than their traditionally bred counterparts. Despite this understanding, consumers do not have access to the necessary information to know if their food contains GE ingredients.

As a general rule, traditional crop breeding develops new plant varieties by the process of selection, and seeks to achieve expression of genetic material which is already present within a species. The product of traditional crop breeding emphasizes certain beneficial characteristics that have been present for most likely millennia within the genetic potential of the species.

To the contrary, genetic engineering works primarily through insertion of genetic material or manipulation of existing genetic sequencing. A gene “gun,” a bacterial “truck,” or a chemical or electrical treatment inserts the genetic material into the host plant cell and then, with the help of genetic elements in the construct, this genetic material inserts itself into the chromosomes of the host plant. This insertion and manipulation process does not occur in nature and is nothing like the traditional crop breeding practiced by farmers over the centuries.

Genetic-engineering permits foreign genetic material to be inserted from unprecedented sources. For example, it is now possible to insert genetic material from species, families and even kingdoms which could not previously be sources of genetic material for a particular species,<sup>1</sup> and even to insert custom-designed genes that do not exist in nature. As a result genetic engineering creates synthetic life forms, something which could not be done by traditional crop breeding.<sup>2</sup>

The growth of GE crop varieties creates new environmental and human health concerns, most of which are poorly understood and do not undergo appropriate testing before ending up in the mouths of consumers. Beyond giving consumers better information about the food they are buying for themselves and their families, this

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<sup>1</sup> Bassin, Rice. 2003, November. Bt-Corn: What it is and How it Works. *University of Kentucky*. <http://www2.ca.uky.edu/entomology/entfacts/entfactpdf/ef130.pdf>

<sup>2</sup> Hansen, Michael. 2000, January. Genetic Engineering is not an Extension of Conventional Plant Breeding. *Consumers Union*. <http://consumersunion.org/wp-content/uploads/2013/02/Wide-Crosses.pdf>

legislation would give researchers the ability to track GE food consumption. This would allow scientists to better understand the effects of consuming GE foods.

### **The Growth of GE crops has led to Resistance and Increased Pesticide Use**

While GE labeling would establish a better system with which to track, study, and identify GE food issues, it is also necessary to give consumers and growers a choice in whether they wish to support this environmentally damaging enterprise.

#### *Herbicide-Resistance*

Herbicide tolerant crops are designed to tolerate specific broad-spectrum herbicides, which kill the surrounding weeds, but leave the cultivated crop intact. These crops, commonly called “Roundup Ready,” have become ubiquitous in conventional American agriculture with 93% of soybeans, 82% of cotton, and 85% of corn planted engineered to be glyphosate resistant.<sup>3</sup> As the planting of GE crop varieties have grown herbicide resistant weeds have grown with them.

Pesticide resistance, the ability of an organism to withstand a poison, is a predictable consequence of repeated pesticide use. How quickly pesticide resistance develops depends on: the frequency of use, the mechanisms of resistance, the genetics of the resistance mechanism, the size of the gene pool and how quickly the organisms reproduce.

A study published by Washington State University’s research professor Charles Benbrook, PhD,<sup>4</sup> found that heavy reliance on the herbicide Roundup, whose active ingredient is glyphosate, has placed weed populations under progressively intense and unprecedented selection pressure, triggering a perfect storm for the emergence of glyphosate-resistant weeds. According to the study, the emergence and spread of glyphosate-resistant weeds has led to an increased use of herbicides on GE crops.

This finding of increased herbicide use was confirmed by a recent U.S. Department of Agriculture (USDA) report<sup>5</sup> that found herbicide use on GE corn increased from around

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<sup>3</sup> 2013, July. USDA Finds More Acres Planted In GE Crops. *Farm Futures*. <http://farmfutures.com/story-usda-finds-more-acres-planted-ge-crops-0-100408>

<sup>4</sup> Benbrook, Charles. 2012, September. Impacts of genetically engineered crops on pesticide use in the U.S. -- the first sixteen years. *Environmental Sciences Europe*. 24:24 <http://www.enveurope.com/content/24/1/24/abstract>

<sup>5</sup> 2014, February. Genetically Engineered Crops in the United States. *USDA*. [http://www.ers.usda.gov/publications/err-economic-research-report/err162.aspx#.Uxi08\\_IdVc0](http://www.ers.usda.gov/publications/err-economic-research-report/err162.aspx#.Uxi08_IdVc0)

1.5 pounds per planted acre in 2001 to more than 2.0 pounds per planted acre in 2010. Herbicide use on non-GE corn has remained relatively level during that same time frame. Beyond using more pesticides, weed resistance has forced farmers to be granted emergency exemptions to use untested herbicides on now glyphosate-resistant weeds.<sup>6</sup>

Increased herbicide use in turn increases the health and environmental risks associated with these chemicals. Glyphosate-formulated herbicides have been linked to numerous health problems including cancer, particularly non-Hodgkin's lymphoma,<sup>7</sup> ADHD,<sup>8</sup> rhinitis,<sup>9</sup> and hormone disruption.<sup>10</sup> Short term health effects include lung congestion and increased breathing rates.<sup>11</sup> Chronic exposures at levels above Maximum Contaminant Levels (MCL) are likely to produce kidney damage and reproductive effects.

Increased herbicide use also threatens pollinator habitats<sup>12</sup> and water sources. Detection of glyphosate in rain and stream samples is on the rise,<sup>13</sup> which is potentially damaging to the aquatic species already facing challenging environmental conditions through the Chesapeake Bay watershed.

Even more frightening, instead of taking the threat of increased pesticide use seriously, USDA is moving to deregulate new GE varieties of herbicide resistant crops. Recently, USDA released for public input its Draft Environmental Impact Statement (DEIS),<sup>14</sup>

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<sup>6</sup> 2012, November. Fluridone; Pesticide Tolerances for Emergency Exemptions. EPA. <https://www.federalregister.gov/articles/2012/11/07/2012-27066/fluridone-pesticide-tolerances-for-emergency-exemptions>

<sup>7</sup> Hardell, L., & Eriksson, M. 1999. A Case-Control Study of Non-Hodgkin Lymphoma and Exposure to Pesticides. *Cancer*, 85(6), 1353–1360. March 11, 2014

<sup>8</sup> Garry, Vincet. 2002. Birth defects, season of conception, and sex of children born to pesticide applicators living in the Red River Valley of Minnesota, USA. *Environ Health Perspect.* 110 (Suppl 3): 441–449

<sup>9</sup> Slager, RE. 2009. Rhinitis associated with pesticide exposure among commercial pesticide applicators in the Agricultural Health Study.

<sup>10</sup> . Gasnier, C., et al. 2008. Glyphosate-based herbicides are toxic and endocrine disruptors in human cell lines. *Toxicology*, doi:10.1016/j.tox.2009.06.006.

<sup>11</sup> Northwest Coalition for Alternatives to Pesticides (NCAP). 1998. Herbicide Factsheet: Glyphosate (Roundup). *Journal of Pesticide Reform*. 18(3):4

<sup>12</sup> Caldwell, Wendy. 2014, January. 2013-14 Monarch Overwintering Population Numbers Released. *Monarch Joint Venture*. <http://monarchjointventure.org/news-events/news/2013-14-monarch-overwintering-population-numbers-released>

<sup>13</sup> Chang, Feng-Chih. 2011. Occurrence and Fate of the Herbicide Glyphosate and its Degradate Aminomethylphosphonic Acid in the Atmosphere. *Environmental Toxicology and Chemistry*, Vol. 30, No. 3

<sup>14</sup> 2013. Dow AgroSciences Petitions (09-233-01p, 09-349-01p, and 11-234-01p) for Determinations of Nonregulated Status for 2,4-D-Resistant Corn and Soybean Varieties. USDA. [http://www.aphis.usda.gov/brs/aphisdocs/24d\\_deis.pdf](http://www.aphis.usda.gov/brs/aphisdocs/24d_deis.pdf)

which calls for the deregulation of GE corn and soybeans engineered to be tolerant to the herbicide 2,4-D. Much like glyphosate, these new varieties of GE corn and soybeans are set to usher in dramatic increases in 2,4-D, a fact noted in USDA's own National Environmental Policy Act alternatives evaluation.

### *Insecticide Incorporated*

Existing GE crops are not limited to herbicide-resistance strains. Insecticide-incorporated crops, those that are genetically engineered to kill insects, have also been introduced into the environment and consumer goods. Resistance to these strains of GE crops has already become an issue. Insecticide-resistant pests, such as the Western corn rootworm,<sup>15</sup> will lead to similar problems faced by herbicide tolerant GE crop varieties. As a result of this inevitable fallout, farmers are stockpiling alternative insecticides. According to a report by the *Wall Street Journal*, insecticide sales soared in 2013 as target insects have developed resistance to GE crops. Pesticide manufacturers American Vanguard, FMC Corp, and Syngenta have all reported higher sales in 2012 and 2013 than in previous years. Syngenta alone reported doubling sales in 2012. Similarly, American Vanguard reported soil insecticide revenues rose by 50% in 2012.<sup>16</sup>

Insect incorporated crops also pose risks to pollinators. Adults and larvae of honey bees are inevitably exposed to transgenic material via pollen consumption of GE-crops, which might be another confounding factor for bee health. Although minor evidence showed adverse effects of Bt-crops on honey bees, the risk assessment of combined effects of Bt-crops and pesticides are completely lacking.<sup>17</sup>

GE crops are grown with increasing amounts of pesticides that are harmful to human and environmental health. Marylanders should have a right to know what kind of agricultural system their food was grown in and whether or not they choose to support that system.

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<sup>15</sup> Spencer, Joe. 2013, August. Severe Corn Rootworm Injury to Bt Hybrids in First-Year Corn Confirmed. *The Bulletin*. <http://bulletin.ipm.illinois.edu/?p=1629>

<sup>16</sup> Berry, Ian. Pesticides Make a Comeback. *Wall Street Journal*. <http://online.wsj.com/news/articles/SB10001424127887323463704578496923254944066?mg=reno64-wsj&url=http%3A%2F%2Fonline.wsj.com%2Farticle%2FSB10001424127887323463704578496923254944066.html>

<sup>17</sup> Zhu, Wanyi. 2014, January. Four Common Pesticides, Their Mixtures and a Formulation Solvent in the Hive Environment Have High Oral Toxicity to Honey Bee Larvae. *PLOS one*. <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0077547#pone.0077547-Babendreier2>

## **GE Labeling will not Raise Food Costs**

Support of this legislation will not raise food costs for consumers, it will only promote access to much-needed information. While opponents of GE labeling claim that this legislation would lead to increases in food prices, several studies indicate this claim to be spurious. A 2012 study,<sup>18</sup> prepared by Joanna M. Shepherd of Emory University School of Law, found that "food prices [are] likely to remain unchanged for consumers," and that "The relabeling expenses are a onetime expense rather than a permanent increase in costs." Other researchers have noted that labeling changes are trivial and that food manufacturers voluntarily change their labels constantly.<sup>19</sup>

## **The States are Best Suited to Provide Consumer Choice and Protection**

Federal legislation has been introduced several times to label GE ingredients. Such legislation, like the *Genetically Engineered Food Right-to-Know Act*, H.R. 1699 and S. 809, has is consistently stalled. This lack of legislative progress continues to harm consumers and their ability to make knowledgeable decisions.

In reaction to this lack of interest on a federal level, states have stepped up to the plate to inform and protect consumers. Multiple states have taken up this issue and both Connecticut and Maine have passed legislation that will go into effect when similar legislation is passed by other states in the New England region. Maryland is not the first state to take on GE labeling and would join a growing movement of state governments that are focused on creating strong consumer right-to-know priorities and protections.

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<sup>18</sup> Shepherd, Joanna M. 2012. Economic Assessment: Proposed California Right To Know Genetically Engineered Food Act (Prop 37) Likely To Cause No Change In Food Price, Minor Litigation Costs, And Negligible, Administrative Costs. <http://www.anh-usa.org/wp-content/uploads/2012/08/GE-Food-Act-Costs-Assessment.pdf>

<sup>19</sup> Lipsky, Michael. 2013, October. Why GMO Labeling Won't Increase Food Prices. *Grist*. [http://grist.org/food/would-gmo-labeling-increase-food-prices/?utm\\_source=syndication&utm\\_medium=rss&utm\\_campaign=feed\\_living](http://grist.org/food/would-gmo-labeling-increase-food-prices/?utm_source=syndication&utm_medium=rss&utm_campaign=feed_living)

## Conclusion

Consumers in Maryland and across this country genuinely care about their right to know what goes into the food they eat. A recent New York Times poll shows national support for GE labeling reaching 93%,<sup>20</sup> a number consistent with past polls showing broad support that cuts across race, gender, socio-economic class and party affiliation. Consumers are concerned with the environmental and human health impacts that are associated with the cultivation of GE crops. They care about the food they eat. It is up to the states to give consumers the information they need to make informed choices for their families. By passing this legislation Maryland would put consumers first and give them the power to decide.

Thank you for the opportunity to submit testimony on SB778. We appreciate your commitment to protecting and improving health and the environment for the residents of the state of Maryland.

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<sup>20</sup> Kopicki, Allison. 2013, July 27. Strong Support for Labeling Modified Foods. The New York Times. <http://www.nytimes.com/2013/07/28/science/strong-support-for-labeling-modified-foods.html? r=0>