



POLICY BRIEF

Citizens' Guide to Initiative 522: To require GMO labeling on certain food products

Todd Myers
Director, Center for Environment

October 2013

Key Findings

1. *The labels required by Initiative 522 would tell consumers nothing about what is actually in the food and focus only on how it was produced.*
2. *The label would not require information about what element of the crop was changed and provide no information to help consumers understand specifically what a “genetically modified” food contains.*
3. *Seeing a GMO label, consumers may choose another product without knowing why, responding only to the general rule that if something has a warning label, it should be avoided.*
4. *Research demonstrates that biotechnology corn and other insect-resistant crops actually reduce the amount of pesticide used on those crops.*
5. *Biotechnology crops hold the key to solving some of the world’s most serious health problems, including preventing blindness for hundreds of thousands of children in developing countries.*
6. *Environmentally, it is likely that biotechnology crops are beneficial, allowing farmers to produce higher yields while using fewer resources, like chemical pesticides, irrigation and other inputs. The ability of farmers to do more with less led to the popularity of biotechnology crops among farmers, contributed to lower global food prices and helped reduce world hunger.*



POLICY BRIEF

Citizens' Guide to Initiative 522: To require GMO labeling on certain food products

Todd Myers
Director, Center for Environment

October 2013

4	<i>Introduction</i>
4	<i>What Initiative 522 Does</i>
5	<i>How would Initiative 522 Labels Help Consumers?</i>
6	<i>GMOs, Health, the Environment and Scare Tactics</i>
9	<i>Reducing Environmental Impact and Lowering Food Costs</i>
11	<i>Conclusion</i>

Citizens' Guide to Initiative 522: To require GMO labeling on certain food products

by Todd Myers
Director, Center for Environment

Introduction

With its strong affinity for organic food, Washington state has become the second political battleground in the United States in the debate about biotechnology used to enhance food crops, commonly called GMOs, for Genetically Modified Organisms. After a similar ballot measure failed in California last year, opponents of GMOs have proposed Initiative 522 in Washington. If passed, the measure would require some food “produced using genetic engineering,” be labeled.

Advocates of Initiative 522 argue consumers have a right to know what is in their food. Opponents of labeling argue the Initiative is poorly written, is inconsistent and contains numerous exceptions and would provide consumers with misleading information.

This study reviews the issues raised by the Initiative, examines the details of the initiative, the science of growing food crops, the costs and the impacts on society of reducing the use of biotechnology crops.

What Initiative 522 Does

Advocates of Initiative 522 argue for the measure as a simple case of providing consumers with information they need to make decisions about the food they eat. In a guest editorial in *The Seattle Times*, the advocates argue:

“For more than 20 years we have all benefited from labels on food sold in grocery stores that furnish nutritional information, country of origin and a list of ingredients. These labels have provided useful information to shoppers without increasing grocery prices or harming farmers, food processors or grocery stores. I-522 will have the exact same results.”¹

¹Instead of presenting scientific support for their proposal, advocates simply argue that each consumer should have the ability to know which foods are created using biotechnology so consumers can make the decision for themselves.

The text of the Initiative, however, focuses heavily on the purported health and environmental risks of GMOs, without citing supporting scientific evidence. For example, the intent section of the Initiative claims biotechnology is “an imprecise

1 Stout, Andrew and Luke Esser, “Guest: Vote yes on I-522 to require labeling GMO food,” *The Seattle Times*, September 21, 2013, http://seattletimes.com/html/opinion/2021864082_andrewstoutlukeesseropedgmofoodlabelingi522yes22.xml.html (Accessed October 2, 2013)

process and often causes unintended consequences.”² It argues “genetically engineered crops have caused hundreds of millions of pounds of additional herbicides to be applied to the nation’s farmland.”³ And it warns of the “potential health effects of consuming foods produced through genetic engineering.”⁴ Although advocates of the Initiative have avoided debating these claims or making them in public, they are at the core of their effort to impose new labeling regulations.

The Initiative defines “genetically engineered” as any organism that has been “changed through the application of” a variety of techniques that do not “occur by natural multiplication or natural recombination.”⁵

It is important to note that Initiative 522 is not directed against the ingredients themselves but against the process by which the organism was created. By emphasizing the process of production rather than what is actually included in the food, the label that would be required by the Initiative is different than traditional food labels. Traditional labels do not identify how food was produced, what machines or techniques were used. Instead, traditional labels tell consumers what is actually in the food. The labels required by Initiative 522, however, would tell consumers nothing about what is actually in the food, focusing only on how it was produced.

Finally, the Initiative identifies what foods would be labeled and which ones would be exempt. Initiative 522 would require labeling of seeds, any “raw agricultural commodity” and “processed food.”⁶ Exempted from labeling would be food certified “organic,” which are prohibited from containing biotechnology crops, food for “immediate human consumption,” food “provided in any restaurant or other food service establishment,” and “medical food.”⁷

Thus, foods required to be labeled as “genetically modified” in the store could be combined by a restaurant into a meal and served to consumers without having to be labeled.

How would Initiative 522 Labels Help Consumers?

The topic of genetic modification is scientifically complicated and Initiative 522 would only require that foods created using biotechnology indicate they are “genetically engineered.” As noted above, the label only identifies the process, not the ingredients, involved in creating the food. Since the label would not require information about what element of the crop was changed, the label would provide no information to help consumers understand specifically what a “genetically modified” food contains.

Instead of providing useful information, the labels in Initiative 522 make use of heuristics, loose mental rules people use to make decisions when they have little

2 Washington State Secretary of State, Initiative 522 Text, http://sos.wa.gov/_assets/elections/initiatives/FinalText_285.pdf (Accessed October 2, 2013)

3 Ibid.

4 Ibid.

5 Ibid.

6 Ibid.

7 Ibid.

information. For example, if you ask someone if the crime rate is going up, he may try to think if someone he knows who has been a recent victim of crime. This is known as the availability heuristic, where people judge the answer to a question based on whether they can think of an example. Like many mental short cuts, the practice can be misleading since one example, or failing to think of an example, may run counter to the overall trend and lead a person to a false conclusion.

Similarly, the purpose of requiring a warning label about GMO food is intended to take advantage of heuristic techniques, by encouraging people to use a short-hand judgment about an issue on which they have little other information. Seeing a GMO label, consumers may choose other products without knowing why, responding only to the general rule that if something has a warning label, it should be avoided.

One of the arguments made by advocates of Initiative 522 is that labeling is simple. In one of the first pro-Initiative 522 ads, one advocate claims, “It’s simple, and it won’t cost you a dime.”⁸ The argument is based on the proposed simplicity of the label. That simplicity, however, would also undermine the ability of GMO labels to convey useful information to consumers.

Without more information about what aspect of the food product was changed through biotechnology, consumers would have to resort to often misleading mental short-cuts when making decisions about the foods they buy.

GMOs, Health, the Environment and Scare Tactics

“It’s the same people who brought us Agent Orange, DDT and PCBs, and they’re saying now, ‘Trust us with your food.’ And people are saying, ‘No, we want to know what’s in it.’”⁹

Those are the words of Trudy Bialic of PCC Markets in Seattle, expressing her concern that biotechnology crops would harm human health in the same way as other known toxins. Although advocates of Initiative 522 talk mostly about the consumers’ right to know, concern about the health and environmental impacts of GMOs is what lies behind the Initiative itself. Obviously, executives at PCC Markets have a financial interest in reducing access to cheaper forms of food offered by competitors, but her words are echoed by others who fear biotechnology crops.

Sorting out these claims, however, is difficult for those unfamiliar with the process of biotechnology. As noted above, the complexity of the science and impact of GMOs leads people to substitute shorthand heuristics for specific scientific knowledge. It is useful to understand the reason GMOs are created and the concerns of opponents.

Genetic modification itself is the process of inserting a string of DNA from another, sometimes similar, plant to provide the host plant with a particular desired attribute, like drought resistance. Unlike selective breeding, which changes many

8 Lewis Kamb, “Truth Needle: In GMO ads, both sides make mostly false claims about I-522 costs,” *The Seattle Times*, October 1, 2013, http://seattletimes.com/html/localnews/2021941144_gmotruthneedlexml.html (Accessed October 2, 2013)

9 Melissa Allison, “PCC joins push for new law requiring GMO labeling,” *The Seattle Times*, October 1, 2012, http://seattletimes.com/html/localnews/2019309149_pccgmo01.html (Accessed October 3, 2013)

elements of DNA, some of which are known and others which are not, using genetic modification specifically targets only the desired change.

For example, some crops are modified to be resistant to herbicide, allowing farmers to use that herbicide without fear of damaging the main crop. Other biotechnology crops are modified to include *Bacillus thuringiensis*, a pesticide, in the crop to resist pest damage, resulting in less insecticide use. Other crops, including those being developed by the Gates Foundation, are designed to require less water, use less chemical fertilizer and create higher crop yields, which lowers the cost of food.

In some cases, the genetic modification applies not to the fruit of the plant, but its leaves, such as in the case with herbicide-resistant crops, or other parts of the plant to improve survivability without affecting the part of the plant that is consumed by humans.

Many of these desirable attributes have been bred into plants by farmers for many years. The question is whether two identical crops, one bred using older selective breeding techniques and one specifically modified using biotechnology, are different. Sometimes the line between GMO and organic is unclear.

For example, *Bacillus thuringiensis* (Bt) is included in some genetically modified crops as a pesticide. It is also used on organic crops and is considered natural, since it “is a natural occurring, soil-borne bacteria that has been used since the 1950s for natural insect control.”¹⁰ Some people believe there is a difference between Bt contained in the plant as opposed to sprayed on the plants, but there is no evidence that this is the case.

Corn with Bt included is the source of one of the most common claims about the health impact of GMOs. Interestingly, while the Yes on 522 campaign web page has information about potential economic and environmental impacts of GMOs, it contains no information about the purported health effects of GMOs. This silence is remarkable, since the very purpose of Initiative 522 is to label food so, in the words of the advocates, “shoppers should have the right to know what’s in the food they and their families eat.”¹¹ The campaign’s web page and fliers, however, say nothing on that very issue, providing no information about why labeling “genetically modified” food would affect human health.

Despite that silence, anti-GMO activists often repeat claims about the health impacts of genetically modified food.

One of the most common claim is that Bt corn causes allergic reactions.¹² Scientific research supporting this claim, however, does not exist. The Centers for Disease Control investigated an instance where Bt corn was claimed to cause an

10 Eric Vinje, “*Bacillus thuringiensis* Products,” Planet Natural, <http://blog.planetnatural.com/bacillus-thuringiensis/> (Accessed October 3, 2013)

11 Yes on 522, “Frequently Asked Questions,” <http://yeson522.com/wp-content/uploads/2013/08/faq1.pdf> (Accessed October 3, 2013)

12 For example, Livestrong has a page on GMOs and Allergies, expressing concern about Bt and allergies, <http://www.livestrong.com/article/230667-gmo-allergy-concerns/>

allergic reaction. Its report found “none of the CDC-submitted samples reacted in a manner consistent with an allergic response.”¹³

Other scientific bodies agree with those results. The World Health Organization concluded, “no effects on human health have been shown as a result of the consumption of such foods by the general population in the countries where they have been approved.”¹⁴

The European Union’s Chief Science Advisor Anne Glover was even more stark last year when she said,

“There is no substantiated case of any adverse impact on human health, animal health or environmental health, so that’s pretty robust evidence, and I would be confident in saying that there is no more risk in eating GMO food than eating conventionally farmed food.”¹⁵

The National Academy of Sciences and the American Medical Association have reached similar conclusions.¹⁶

Ironically, GMOs could provide a solution to a major source of allergic concern: gluten. Many people cannot eat bread or similar common foods because they are gluten intolerant. Washington State University is currently developing a strain of wheat to reduce the effect of gluten on people with celiac disease. Dr. Sachin Rustgi PhD, says the goal is to “reduce the toxic in the wheat grains to reduce the gluten” in the wheat. Dr. Rustgi noted that the modification involves selecting traits from one type of wheat to include in another. Early results have been successful, and Dr. Rustgi notes it has already “reduced the toxicity by 75 percent and we are working to reach 90 to 100 percent.”¹⁷

There are also claims that biotechnology crops have a harmful effect on the environment. Most of the claims by GMO opponents center on the claim that herbicide-resistant crops encourage the overuse of those herbicides. Opponents argue that because herbicide-resistant crops are not affected by those herbicides, farmers are free to increase their use against weeds without concern that food crops will be harmed.

For example, the Yes on 522 campaign argues, “adoption of GE [genetically engineered] crops by U.S. farmers has increased herbicide use over the past 9 years.”¹⁸ They cite a study by Washington State University Professor Richard Benbrook,

13 Centers for Disease Control, “Investigation of Human Health Effects Associated with Potential Exposure to Genetically Modified Corn,” June 11, 2001, <http://www.cdc.gov/nceh/ehhe/Cry9cReport/pdfs/cry9creport.pdf> (Accessed October 3, 2013)

14 World Health Organization, “WHO answers questions on genetically modified foods,” <http://www.who.int/mediacentre/news/notes/np5/en/index.html> (Accessed October 3, 2013)

15 Jeremy Fleming, “No risk with GMO food, says EU chief scientific advisor,” July 24, 2012, <http://www.euractiv.com/innovation-enterprise/commission-science-supremo-endor-news-514072> (Accessed October 3, 2013)

16 Berezow, Alex, “Who Is Waging the Anti-Science Crusade Against GMOs?,” June 25, 2012, <http://www.realclearscience.com/blog/2012/06/the-anti-science-crusade-against-gmos.html> (Accessed October 3, 2012)

17 Rustgi, Dr. Sachin, interview with the author, October 3, 2012

18 Yes on 522, “The Environmental Impacts of GE Crops,” <http://yeson522.com/environment/> (Accessed October 3, 2013)

which they claim “found U.S. farmers are using more hazardous pesticides due largely to heavy adoption of GE crop technologies that are sparking a rise of ‘superweeds.’”¹⁹ Benbrook’s study actually focuses on herbicides, not pesticides as the Yes on 522 campaign mistakenly claims, but their interpretation of the study is incorrect as well.

Benbrook himself, however, says this is not unique to GMOs, but is true with all herbicides. When he released his study, in response to our question about its findings, Benbrook noted that relying too heavily on one approach – GMO crops or other techniques – is dangerous. He wrote:

*The key for all farmers — GM and not-GM — is diversifying weed management systems in all dimensions. Diversity of tactics — crop rotation, cover crops, cultivation, herbicides — as well as diversity within tactics — rotation of herbicide families of chemistry, and never rely nearly so heavily on any one active ingredient.*²⁰

The problem is not the particular technology – GMOs, pesticides or herbicides, or organic techniques – but in the way they are used. Farmers have consistently adjusted to resistant pests and weeds and are already doing the same. To argue that GMOs are different would require farmers to spend more on GMOs seeds and to increase spending on chemical herbicides and pesticides without making any adjustment, despite the fact that they have a financial incentive to do so. As Dr. Benbrook notes, diversification is sound management and is required no matter what type of crops farmers grow.

Reducing Environmental Impact and Lowering Food Costs - The Benefits of Biotechnology Crops

On the other side, those opposed to Initiative 522 point out that genetically modified crops offer a number of benefits to the environment and to farmers and consumers. Farmers choose them for a variety of reasons, mostly related to increased crop yields and reduced loss from pests, which in turn lowers food costs for consumers. Those economic benefits have led many farmers to turn to biotechnology crops. The United States Department of Agriculture (USDA) reports²¹:

- Based on USDA survey data, biotechnology soybeans went from 17 percent of U.S. soybean acreage in 1997 to 68 percent in 2001 and 93 percent in 2013
- Plantings of biotechnology cotton expanded from about 10 percent of U.S. acreage in 1997 to 56 percent in 2001 and 82 percent in 2013
- Plantings of Bt corn grew from about eight percent of U.S. corn acreage in 1997 to 26 percent in 1999, then fell to 19 percent in 2000 and 2001, before climbing to 29 percent in 2003 and 76 percent in 2013

¹⁹ Ibid.

²⁰ Benbrook, Dr. Richard, e-mail to the author, October 4, 2012

²¹ U.S. Department of Agriculture, “Trends in Genetically Modified Crops,” <http://cc.bingj.com/cache.aspx?q=recent+trends+in+gmo+adoption&d=4774596056582562&mkt=en-US&setlang=en-US&w=uaQuELgvH7Z7PHijypOaKrN7KRZc7LG#.Uk3WsEDn-Uk> (Accessed October 3, 2012)

The reason for these upward trends is simple – genetically modified crops allow farmers to create higher yields using fewer resources. One study found that adoption of biotechnology crops increased yield by “45% for corn, 12.4% for soybeans, 25% for canola, and 65% for cotton.”²² The increase in food crop yields contributes to a fall in world food prices.

Washington State University is working on a strain of wheat that will resist attack from pests. The strain would focus the pesticide, “introducing it into the wheat roots so wheat can protect itself.”²³ By reducing or eliminating the threat from pests, farmers can harvest a larger percentage of their crop, reducing the amount of water, fertilizer and other inputs for the size of the crop.

As a result of the improved use of resources, biotechnology crops also have a number of environmental benefits. There are several examples.

Research demonstrates that Bt corn and other insect-resistant crops actually reduce the amount of pesticide used on those crops. According to the USDA, as the percentage of Bt corn planted increased, the amount of pesticide per acre used by farmers declined.²⁴ The reduction was dramatic, falling to one-fifth the previous level between 1997 and 2008, a drop in chemical use of about 80%.

Others note that biotechnology crops are a key ingredient in fighting climate change and helping mitigate the potential impacts of drought. Dr. Steve Sexton notes that while environmentalists express concern about GMOs, “The accumulated evidence from fourteen years of experience with genetically engineered (GE) crops suggests, however, that environmentalists should perhaps champion the technology as a way to mitigate a risk that most agree is more likely and potentially more damaging: global climate change.”²⁵

Third, because biotechnology crops can reduce the total number of pests, there is a “halo” effect that protects other non-GMO crops nearby. In Hawaii, for example, genetically modified papaya saved an industry that was at risk of total loss from the ringspot virus. The presence of genetically modified papaya, known as Rainbow papaya, reduced the spread of the virus, an effect that helped organic growers. One grower commented, “Actually it (Rainbow papaya) helps the organic guys,” he said. “... It keeps the virus pressure down on the surrounding areas.”²⁶ Not only did the Rainbow papaya save the Hawaiian papaya industry, it helped protect organic papaya from a naturally-occurring virus that otherwise would have wiped them out.

Finally, biotechnology crops hold the key to solving some of the world’s most serious health problems. The most dramatic case is Golden Rice, so named because it has been genetically changed to include Vitamin A, a natural food element that is essential to human health.

22 Sexton, Steve and David Zilberman, “Agricultural Biotechnology Can Help Mitigate Climate Change,” Giannini Foundation of Agricultural Economics, Nov/Dec 2010, <http://giannini.ucop.edu/are-update/14/2/agricultural-biotechnolog/> (Accessed October 3, 2013)

23 Rustgi, Dr. Sachin, interview with the author, October 3, 2013

24 Sexton and Zilberman

25 Ibid.

26 Tom Callis, “Papaya — a GMO success story,” *West Hawaii Today*, June 10, 2013, <http://westhawaii.com/sections/news/local-news/papaya-%E2%80%94-gmo-success-story.html> (Accessed October 3, 2013)

Approximately 500,000 poor children worldwide become blind every year due to Vitamin A deficiency. In response, Golden Rice has been offered for free to poor farmers to reduce the rate of blindness in poor children. Despite that, Greenpeace and other anti-GMO activists have blocked research and the planting of vitamin-rich Golden Rice, with Greenpeace activists going so far as tearing Golden Rice plants out of the ground.²⁷ Such actions are spawned and encouraged by fear of GMOs and political opposition to their use.

In fact, longtime anti-GMO campaigner Mark Lynas, who had himself ripped up biotechnology crops, apologized this year for his previous actions and beliefs, saying “I am also sorry that I helped to start the anti-GM movement back in the mid-1990s, and that I thereby assisted in demonising an important technological option which can be used to benefit the environment.”²⁸ He now says that his attacks on GMOs undermined life-saving efforts like Golden Rice.

Efforts to reduce the use of biotechnology crops or eliminate them altogether, risk harming people who would otherwise benefit. By encouraging a switch away from biotechnology crops to crops with lower yields and increased pest loss, public policy risks increasing the amount of chemical pesticides, water use, fertilizer use and other harmful effects on the environment.

Conclusion

Advocates of requiring the labeling of biotechnology crops argue that such labeling will help consumers make informed decisions about what is in their food. The science, however, does not match the claimed purpose of the mandatory labeling.

Labeling advocates argue that labeling is simple, but the ambiguity of the required label does not provide useful information to consumers, leaving them to be influenced by fear and to make guesses about the meaning of that information. The Yes on 522 campaign itself fails to identify any potential health problems from genetically modified food that would justify changing public policy to require a label.

Some argue there is no harm in providing additional information, even if it is of little value. Advocates of Initiative 522 and of GMO labeling, however, are not in favor of more information. They only favor giving consumers selected information. If the label were required to include information about the increased environmental impact of non-GMO foods, they would likely be opposed. One cannot advocate requiring some information but object to consumers receiving other information.

Environmentally, it is likely that biotechnology crops are beneficial, allowing farmers to produce higher yields while using fewer resources, like chemical pesticides, irrigation and other inputs. The ability of farmers to do more with less

27 Bjorn Lomborg, “Bjorn Lomborg: Trashing rice, killing children,” *Canada National Post*, August 13, 2013, <http://fullcomment.nationalpost.com/2013/08/29/bjorn-lomborg-trashing-rice-killing-children/> (Accessed October 3, 2013)

28 Lynas, Mark, “Lecture to Oxford Farming Conference, 3 January 2013,” <http://www.marklynas.org/2013/01/lecture-to-oxford-farming-conference-3-january-2013/#sthash.VLRbBJIO.dpuf> (Accessed October 3, 2013)

led to the popularity of biotechnology crops among farmers, contributed to lower global food prices and helped reduce world hunger.

Ultimately, on election day, voters should ask themselves whether Initiative 522 will achieve the goals they want by providing useful information, reducing risks to human health or minimizing effects on the environment. How they answer will determine whether Washington will follow the lead of voters in California and reject labeling, or become the first state in the nation to require such labels.

Washington Policy Center is a non-partisan, independent research organization in Washington state. Nothing here should be construed as an attempt to aid or hinder the passage of any legislation before any legislative body.

Published by
Washington Policy Center
© 2013

washingtonpolicy.org
206-937-9691

Todd Myers is director of WPC's Center for Environment. He is one of the nation's leading experts on free-market environmental policy. His analysis and commentary have appeared in FOX News, BBC, Slate, *The Seattle Times*, among others and is also the author of "*Eco-Fads: How the Rise of Trendy Environmentalism is Harming the Environment*." He was recognized by The Wall Street Journal when they designated him as an Expert for energy and the environment for their Online Journals. Todd formerly served as Communications Director for the Washington State Department of Natural Resources. He holds a Master's Degree from the University of Washington.

