HB

92

<TARGET><BILL>HB 92</BILL><SUBJECT>HB
92</SUBJECT><COMM>HRES29</COMM></TARGET>

ALASKA STATE LEGISLATURE

REPRESENTATIVE GERAN TARR

HB92

"GMO Labeling"

Sponsor Statement

This bill would require labeling of genetically modified food products sold in Alaska. Genetically modified organisms are plants or animals modified to include the genetic material from a non-related species. For example, Atlantic salmon can be modified with ocean pout and Chinook salmon genes to enlarge the species' natural size and speed up the growth pattern. Alaskans across the state have already vocally opposed GM salmon, dubbed Frankenfish. Other examples include apples being genetically modified to slow browning, with no beneficial health impacts, and corn crops modified with *Bacillus thuringiensis* bacteria to resist herbicides and pesticides. We need to know more about other food products that we purchase, eat, and feed to our families.

Alaskans hold a fundamental belief that they have a right to know what is in their food. Second, many residents have environmental concerns about GM crops, such as increased pesticide use and pesticide resistant weeds. Third, Alaskans recognize the risks of losing genetic diversity in food crops. Finally, Alaskans recognize potential health concerns associated with consumption of GMO food products. While more research needs to be done on health issues, the loss of crop diversity and increased pesticide usage are well documented and cause for concern. Yet, almost all U.S. grown corn, soy, sugar beets, and canola are genetically modified and included as ingredients in our everyday foods without our knowledge or consent.

There is a growing global movement to demand labeling GMOs and allow consumers the opportunity to choose whether they want to consume GM products. The United States and Canada are the only two industrialized nations that do not require labeling. Within the U.S., a number of Northeast states, such as Connecticut and Maine, have already signed legislation

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regarding GMO labeling requirements. The U.S. Food and Drug Administration (FDA) does not require GMO safety studies and in fact overrode concerns expressed by FDA scientists.

I ask for your consideration and support for GMO Labeling so that Alaskans can be fully informed about their food supply and make informed choices respectively.

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Fiscal Note

State of Alaska
2015 Legislative Session

Bill Version: HB 92
Fiscal Note Number:
() Publish Date:

Identifier: HB092-DEC-FSS-03-06-15
Title: LABEL GENETICALLY MODIFIED FOOD
Sponsor: TARR
Requester: House Resources Committee

Department: Department of Environmental Conservation
Appropriation: Environmental Health
Allocation: Food Safety & Sanitation
OMB Component Number: 2343

Expenditures/Revenues

Note. Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2016 Appropriation Requested	Included in Governor's FY2016 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2016**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**
Personal Services	***		***	***	***	***	***
Travel							
Services							
Commodities							
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	***	**0.0**	***	***	***	***	***

Fund Source (Operating Only)

None							
Total	***	**0.0**	***	***	***	***	***

Positions

Full-time							
Part-time							
Temporary							

Change in Revenues							

Estimated SUPPLEMENTAL (FY2015) cost: 0.0 *(separate supplemental appropriation required)*
(discuss reasons and fund source(s) in analysis section)

Estimated CAPITAL (FY2016) cost: 0.0 *(separate capital appropriation required)*
(discuss reasons and fund source(s) in analysis section)

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? Yes
If yes, by what date are the regulations to be adopted, amended or repealed? 07/01/17

Why this fiscal note differs from previous version:

Not applicable, initial version.

Prepared By: Elaine Busse Floyd, Director — Phone: (907)269-7644
Division: Environmental Health — Date: 03/06/2015 12:00 PM
Approved By: Alice Edwards, Deputy Commissioner — Date: 03/06/15
Agency: Department of Environmental Conservation

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2015 LEGISLATIVE SESSION

BILL NO. HB 92

Analysis

Analysis/Assumptions:

This proposed legislation amends AS 17.20 to include the labeling requirement of genetically modified food. The bill creates additional labeling and supplier verification recordkeeping requirements for processed food offered for retail sale, or requires that those who offer raw/unpeeled fruit or processed products for retail sale obtain statements regarding use of genetic engineering in order to avoid labeling requirements.

Because this bill includes most food sold at retail (not just activities that require a permit to operate a food establishment under DEC regulations), the scope of DEC's regulated community will expand requiring additional resources.

As written, the fiscal impact to the Department cannot be determined at this time due to the immense scope of regulated entities that would be impacted and the resources that the Department would need in order to become prepared to conduct outreach and inspection activities. Potentially hundreds, if not thousands of facilities in Alaska that are not currently regulated by the Department would be subject to the labeling requirements.

With an effective date of 1/1/16, Alaska would become the first state to implement a GMO labeling law in the country (Vermont's law is effective 7/1/16). Significant resources would be required in order to hire and train staff, educate affected food establishments, develop regulations and procedures, and conduct inspections and enforcement actions.

ALASKA STATE LEGISLATURE

REPRESENTATIVE GERAN TARR

HB92

"GMO Labeling"

Sectional Analysis

Section 1 of the bill requires labeling of food wholly or partially produced with genetic engineering. The section also contains certain exceptions to the labeling requirement, including genetically modified fish and fish products, which already have a labeling requirement, animals which only ingested or were injected with genetically engineered food or drugs, and food not knowingly or intentionally produced with genetically modified ingredients. Also exempt from labeling requirements are alcoholic beverages, food prepared and intended for immediate consumption, and medical food. The section then defines some of the terms used.

Section 2 of the bill adds a section to the ways in which food is considered misbranded, stating that failure to comply with GMO labeling would be considered misbranding.

Section 3 exempts retail sellers from compliance with labeling requirements unless the retailer produces or manufactures the food or markets the food under its own brand.

Section 4 adds definitions for genetically modified fish and fish product, as well as definitions for processed food and raw agricultural commodity.

Section 5 repeals previous provisions of the food misbranding statute.

Section 6 provides for an effective date of January 1, 2016.

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20 QUESTIONS ON GENETICALLY MODIFIED (GM) FOODS

These questions and answers have been prepared by WHO in response to questions and concerns by a number of WHO Member State Governments with regard to the nature and safety of genetically modified food.

Q1. **What are genetically modified (GM) organisms and GM foods?**

Genetically modified organisms (GMOs) can be defined as organisms in which the genetic material (DNA) has been altered in a way that does not occur naturally. The technology is often called "modern biotechnology" or "gene technology", sometimes also "recombinant DNA technology" or "genetic engineering". It allows selected individual genes to be transferred from one organism into another, also between non-related species.

Such methods are used to create GM plants – which are then used to grow GM food crops.

Q2. **Why are GM foods produced?**

GM foods are developed – and marketed – because there is some perceived advantage either to the producer or consumer of these foods. This is meant to translate into a product with a lower price, greater benefit (in terms of durability or nutritional value) or both. Initially GM seed developers wanted their products to be accepted by producers so have concentrated on innovations that farmers (and the food industry more generally) would appreciate.

The initial objective for developing plants based on GM organisms was to improve crop protection. The GM crops currently on the market are mainly aimed at an increased level of crop protection through the introduction of resistance against plant diseases caused by insects or viruses or through increased tolerance towards herbicides.

Insect resistance is achieved by incorporating into the food plant the gene for toxin production from the bacterium *Bacillus thuringiensis* (BT). This toxin is currently used as a conventional insecticide in agriculture and is safe for human consumption. GM crops that permanently produce this toxin have been shown to require lower quantities of insecticides in specific situations, e.g. where pest pressure is high.

Virus resistance is achieved through the introduction of a gene from certain viruses which cause disease in plants. Virus resistance makes plants less susceptible to diseases caused by such viruses, resulting in higher crop yields.

Herbicide tolerance is achieved through the introduction of a gene from a bacterium conveying resistance to some herbicides. In situations where weed pressure is high, the use of such crops has resulted in a reduction in the quantity of the herbicides used.

Q3. **Are GM foods assessed differently from traditional foods?**

Generally consumers consider that traditional foods (that have often been eaten for thousands of years) are safe When new foods are developed by natural methods, some of the existing characteristics of foods can be altered, either in a positive or a negative way National food authorities may be called upon to examine traditional foods, but this is not always the case. Indeed, new plants developed through traditional breeding techniques may not be evaluated rigorously using risk assessment techniques.

With GM foods most national authorities consider that specific assessments are necessary Specific systems have been set up for the rigorous evaluation of GM organisms and GM foods relative to both human health and the environment. Similar evaluations are generally not performed for traditional foods. Hence there is a significant difference in the evaluation process prior to marketing for these two groups of food.

One of the objectives of the WHO Food Safety Programme is to assist national authorities in the identification of foods that should be subject to risk assessment, including GM foods, and to recommend the correct assessments.

Q4. **How are the potential risks to human health determined?**

The safety assessment of GM foods generally investigates: (a) direct health effects (toxicity), (b) tendencies to provoke allergic reaction (allergenicity); (c) specific components thought to have nutritional or toxic properties; (d) the stability of the inserted gene; (e) nutritional effects associated with genetic modification; and (f) any unintended effects which could result from the gene insertion.

Q5. **What are the main issues of concern for human health?**

While theoretical discussions have covered a broad range of aspects, the three main issues debated are tendencies to provoke allergic reaction (allergenicity), gene transfer and outcrossing.

Allergenicity. **As a matter of principle, the transfer of genes from commonly allergenic foods is discouraged unless it can be demonstrated that the protein product of the transferred gene is not allergenic. While traditionally developed foods are not generally tested for allergenicity, protocols for tests for GM foods have been evaluated by the Food and Agriculture Organization of the United Nations (FAO) and WHO. No allergic effects have been found relative to GM foods currently on the market.**

Gene transfer. **Gene transfer from GM foods to cells of the body or to bacteria in the gastrointestinal tract would cause concern if the transferred genetic material adversely affects human health. This would be particularly relevant if antibiotic resistance genes, used in creating GMOs, were to be transferred. Although the probability of transfer is low, the use of technology without antibiotic resistance genes has been encouraged by a recent FAO/WHO expert panel.**

Outcrossing. **The movement of genes from GM plants into conventional crops or related species in the wild (referred to as "outcrossing"), as well as the mixing of crops derived**

from conventional seeds with those grown using GM crops, may have an indirect effect on food safety and food security. This risk is real, as was shown when traces of a maize type which was only approved for feed use appeared in maize products for human consumption in the United States of America. Several countries have adopted strategies to reduce mixing, including a clear separation of the fields within which GM crops and conventional crops are grown

Feasibility and methods for post-marketing monitoring of GM food products, for the continued surveillance of the safety of GM food products, are under discussion.

Q6. **How is a risk assessment for the environment performed?**

Environmental risk assessments cover both the GMO concerned and the potential receiving environment. The assessment process includes evaluation of the characteristics of the GMO and its effect and stability in the environment, combined with ecological characteristics of the environment in which the introduction will take place. The assessment also includes unintended effects which could result from the insertion of the new gene.

Q7. **What are the issues of concern for the environment?**

Issues of concern include: the capability of the GMO to escape and potentially introduce the engineered genes into wild populations; the persistence of the gene after the GMO has been harvested; the susceptibility of non-target organisms (e.g. insects which are not pests) to the gene product; the stability of the gene; the reduction in the spectrum of other plants including loss of biodiversity; and increased use of chemicals in agriculture. The environmental safety aspects of GM crops vary considerably according to local conditions.

Current investigations focus on: the potentially detrimental effect on beneficial insects or a faster induction of resistant insects; the potential generation of new plant pathogens; the potential detrimental consequences for plant biodiversity and wildlife, and a decreased use of the important practice of crop rotation in certain local situations; and the movement of herbicide resistance genes to other plants.

Q8. **Are GM foods safe?**

Different GM organisms include different genes inserted in different ways. This means that individual GM foods and their safety should be assessed on a case-by-case basis and that it is not possible to make general statements on the safety of all GM foods.

GM foods currently available on the international market have passed risk assessments and are not likely to present risks for human health. In addition, 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. Continuous use of risk assessments based on the Codex principles and, where appropriate, including post market monitoring, should form the basis for evaluating the safety of GM foods.

Q9. **How are GM foods regulated nationally?**

The way governments have regulated GM foods varies. In some countries GM foods are not yet regulated. Countries which have legislation in place focus primarily on assessment of risks for consumer health. Countries which have provisions for GM foods usually also regulate GMOs in general, taking into account health and environmental

risks, as well as control- and trade-related issues (such as potential testing and labelling regimes). In view of the dynamics of the debate on GM foods, legislation is likely to continue to evolve.

Q10. **What kind of GM foods are on the market internationally?**

All GM crops available on the international market today have been designed using one of three basic traits: resistance to insect damage; resistance to viral infections; and tolerance towards certain herbicides. All the genes used to modify crops are derived from microorganisms.

Crop	*Trait*	*Areas/countries with approval*
Maize	Insect resistance	Argentina, Canada, South Africa, United States, EU
	Herbicide tolerance	Argentina, Canada, United States, EU
Soybean	Herbicide tolerance	Argentina, Canada, South Africa, United States, EU (for processing only)
Oilseed rape	Herbicide tolerance	Canada, United States
Chicory	Herbicide tolerance	EU (for breeding purposes only)
Squash	Virus resistance	Canada, United States
Potato	Insect resistance/herbicide tolerance	Canada, United States

Q11. **What happens when GM foods are traded internationally?**

No specific international regulatory systems are currently in place. However, several international organizations are involved in developing protocols for GMOs.

The Codex Alimentarius Commission (Codex) is the joint FAO/WHO body responsible for compiling the standards, codes of practice, guidelines and recommendations that constitute the Codex Alimentarius: the international food code. Codex is developing principles for the human health risk analysis of GM foods. The premise of these principles dictates a premarket assessment, performed on a case-by-case basis and including an evaluation of both direct effects (from the inserted gene) and unintended effects (that may arise as a consequence of insertion of the new gene). The principles are at an advanced stage of development and are expected to be adopted in July 2003. Codex principles do not have a binding effect on national legislation, but are referred to specifically in the Sanitary and Phytosanitary Agreement of the World Trade Organization (SPS Agreement), and can be used as a reference in case of trade disputes.

The Cartagena Protocol on Biosafety (CPB), an environmental treaty legally binding for its Parties, regulates transboundary movements of living modified organisms (LMOs). GM foods are within the scope of the Protocol only if they contain LMOs that are capable of transferring or replicating genetic material. The cornerstone of the CPB is a requirement that exporters seek consent from importers before the first shipment of

LMOs intended for release into the environment. The Protocol will enter into force 90 days after the 50th country has ratified it, which may be in early 2003 in view of the accelerated depositions registered since June 2002

Q12. **Have GM products on the international market passed a risk assessment?**

The GM products that are currently on the international market have all passed risk assessments conducted by national authorities. These different assessments in general follow the same basic principles including an assessment of environmental and human health risk. These assessments are thorough they have not indicated any risk to human health

Q13. **Why has there been concern about GM foods among some politicians, public interest groups and consumers, especially in Europe?**

Since the first introduction on the market in the mid-1990s of a major GM food (herbicide-resistant soybeans), there has been increasing concern about such food among politicians, activists and consumers, especially in Europe. Several factors are involved.

In the late 1980s – early 1990s, the results of decades of molecular research reached the public domain. Until that time, consumers were generally not very aware of the potential of this research. In the case of food, consumers started to wonder about safety because they perceive that modern biotechnology is leading to the creation of new species.

Consumers frequently ask, "what is in it for me?". Where medicines are concerned, many consumers more readily accept biotechnology as beneficial for their health (e.g. medicines with improved treatment potential). In the case of the first GM foods introduced onto the European market, the products were of no apparent direct benefit to consumers (not cheaper, no increased shelf-life, no better taste). The potential for GM seeds to result in bigger yields per cultivated area should lead to lower prices. However, public attention has focused on the risk side of the risk-benefit equation.

Consumer confidence in the safety of food supplies in Europe has decreased significantly as a result of a number of food scares that took place in the second half of the 1990s that are unrelated to GM foods. This has also had an impact on discussions about the acceptability of GM foods. Consumers have questioned the validity of risk assessments, both with regard to consumer health and environmental risks, focusing in particular on long-term effects. Other topics for debate by consumer organizations have included allergenicity and antimicrobial resistance. Consumer concerns have triggered a discussion on the desirability of labelling GM foods, allowing an informed choice. At the same time, it has proved difficult to detect traces of GMOs in foods: this means that very low concentrations often cannot be detected.

Q14. **How has this concern affected the marketing of GM foods in the European Union?**

The public concerns about GM food and GMOs in general have had a significant impact on the marketing of GM products in the European Union (EU). In fact, they have resulted in the so-called moratorium on approval of GM products to be placed on the market. Marketing of GM food and GMOs in general are the subject of extensive legislation. Community legislation has been in place since the early 1990s.

The procedure for approval of the release of GMOs into the environment is rather complex and basically requires agreement between the Member States and the European Commission. Between 1991 and 1998, the marketing of 18 GMOs was authorized in the EU by a Commission decision.

As of October 1998, no further authorizations have been granted and there are currently 12 applications pending. Some Member States have invoked a safeguard clause to temporarily ban the placing on the market in their country of GM maize and oilseed rape products. There are currently nine ongoing cases. Eight of these have been examined by the Scientific Committee on Plants, which in all cases deemed that the information submitted by Member States did not justify their bans.

During the 1990s, the regulatory framework was further extended and refined in response to the legitimate concerns of citizens, consumer organizations and economic operators (described under *Question 13*). A revised directive will come into force in October 2002. It will update and strengthen the existing rules concerning the process of risk assessment, risk management and decision-making with regard to the release of GMOs into the environment. The new directive also foresees mandatory monitoring of long-term effects associated with the interaction between GMOs and the environment.

Labelling in the EU is mandatory for products derived from modern biotechnology or products containing GM organisms. Legislation also addresses the problem of accidental contamination of conventional food by GM material. It introduces a 1% minimum threshold for DNA or protein resulting from genetic modification, below which labelling is not required.

In 2001, the European Commission adopted two new legislative proposals on GMOs concerning traceability, reinforcing current labelling rules and streamlining the authorization procedure for GMOs in food and feed and for their deliberate release into the environment.

The European Commission is of the opinion that these new proposals, building on existing legislation, aim to address the concerns of Member States and to build consumer confidence in the authorization of GM products. The Commission expects that adoption of these proposals will pave the way for resuming the authorization of new GM products in the EU.

Q15. What is the state of public debate on GM foods in other regions of the world?

The release of GMOs into the environment and the marketing of GM foods have resulted in a public debate in many parts of the world. This debate is likely to continue, probably in the broader context of other uses of biotechnology (e.g. in human medicine) and their consequences for human societies. Even though the issues under debate are usually very similar (costs and benefits, safety issues), the outcome of the debate differs from country to country. On issues such as labelling and traceability of GM foods as a way to address consumer concerns, there is no consensus to date. This has become apparent during discussions within the Codex Alimentarius Commission over the past few years. Despite the lack of consensus on these topics, significant progress has been made on the harmonization of views concerning risk assessment. The Codex Alimentarius Commission is about to adopt principles on premarket risk assessment, and the provisions of the Cartegena Protocol on Biosafety also reveal a growing understanding at the international level.

Most recently, the humanitarian crisis in southern Africa has drawn attention to the use of GM food as food aid in emergency situations. A number of governments in the region raised concerns relating to environmental and food safety fears. Although workable solutions have been found for distribution of milled grain in some countries, others nave restricted the use of GM food aid and obtained commodities which do not contain GMOs.

Q16. **Are people's reactions related to the different attitudes to food in various regions of the world?**

Depending on the region of the world, people often have different attitudes to food. In addition to nutritional value, food often has societal and historical connotations, and in some instances may have religious importance. Technological modification of food and food production can evoke a negative response among consumers, especially in the absence of good communication on risk assessment efforts and cost/benefit evaluations.

Q17. **Are there implications for the rights of farmers to own their crops?**

Yes, intellectual property rights are likely to be an element in the debate on GM foods, with an impact on the rights of farmers. Intellectual property rights (IPRs), especially patenting obligations of the TRIPS Agreement (an agreement under the World Trade Organization concerning trade-related aspects of intellectual property rights) have been discussed in the light of their consequences on the further availability of a diversity of crops. In the context of the related subject of the use of gene technology in medicine, WHO has reviewed the conflict between IPRs and an equal access to genetic resources and the sharing of benefits. The review has considered potential problems of monopolization and doubts about new patent regulations in the field of genetic sequences in human medicine. Such considerations are likely to also affect the debate on GM foods.

Q18. **Why are certain groups concerned about the growing influence of the chemical industry on agriculture?**

Certain groups are concerned about what they consider to be an undesirable level of control of seed markets by a few chemical companies. Sustainable agriculture and biodiversity benefit most from the use of a rich variety of crops, both in terms of good crop protection practices as well as from the perspective of society at large and the values attached to food. These groups fear that as a result of the interest of the chemical industry in seed markets, the range of varieties used by farmers may be reduced mainly to GM crops. This would impact on the food basket of a society as well as in the long run on crop protection (for example, with the development of resistance against insect pests and tolerance of certain herbicides). The exclusive use of herbicide-tolerant GM crops would also make the farmer dependent on these chemicals. These groups fear a dominant position of the chemical industry in agricultural development, a trend which they do not consider to be sustainable.

Q19. **What further developments can be expected in the area of GMOs?**

Future GM organisms are likely to include plants with improved disease or drought resistance, crops with increased nutrient levels, fish species with enhanced growth characteristics and plants or animals producing pharmaceutically important proteins such as vaccines.

At the international level, the response to new developments can be found in the expert consultations organized by FAO and WHO in 2000 and 2001, and the subsequent work of the Codex ad hoc Task Force on Foods Derived from Biotechnology. This work has resulted in an improved and harmonized framework for the risk assessment of GM foods in general. Specific questions, such as the evaluation of allergenicity of GM foods or the safety of foods derived from GM microorganisms, have been covered and an expert consultation organized by FAO and WHO will focus on foods derived from GM animals in 2003.

Q20. **What is WHO doing to improve the evaluation of GM foods?**

WHO will take an active role in relation to GM foods, primarily for two reasons. (1) on the grounds that public health could benefit enormously from the potential of biotechnology, for example, from an increase in the nutrient content of foods, decreased allergenicity and more efficient food production; and (2) based on the need to examine the potential negative effects on human health of the consumption of food produced through genetic modification, also at the global level. It is clear that modern technologies must be **thoroughly evaluated if they are to constitute a true improvement in the way food is produced. Such evaluations must be holistic and all-inclusive, and cannot stop at the previously separated, non-coherent systems of evaluation focusing solely on human health or environmental effects in isolation.**

Work is therefore under way in WHO to present a broader view of the evaluation of GM foods in order to enable the consideration of other important factors. This more holistic evaluation of GM organisms and GM products will consider not only safety but also food security, social and ethical aspects, access and capacity building. International work in this new direction presupposes the involvement of other key international organizations in this area. As a first step, the WHO Executive Board will discuss the content of a WHO report covering this subject in January 2003. The report is being developed in collaboration with other key organizations, notably FAO and the United Nations Environment Programme (UNEP). It is hoped that this report could form the basis for a future initiative towards a more systematic, coordinated, multi-organizational and international evaluation of certain GM foods.

March 9, 2015

Dear Representative Tarr:

I am writing as a grandparent/concerned citizen regarding HB92 and the labeling of GMO foods in Alaska. I really would like to see this bill passed since I believe we have a right to know exactly what is in our foods. The health of our families both present and future and the health of America depend on it. Since GMO foods were introduced it seems people's digestive issues have risen dramatically, so you really have to wonder when these companies say GMO's are safe, but unwilling to label the product, what are they really hiding from the public.

Currently right now the big corporations like Monsanto, Dow chemicals, Koch Brothers, oil companies (I could go on) have no interest in the health of America, but how much money they can make without considering the damage it is currently doing to our country/planet.

My husband and I fully support this bill and would like to see it passed so we know exactly what ingredients are in the foods that are currently being eaten by us the American public.

Together, we can succeed in defending justice, democracy, and our right to know.

Sincerely,

Diana L. Stevens

EVERYTHING YOU NEED TO KNOW ABOUT GMO LAWS [OR THE LACK THEREOF]

Are genetically modified foods, better known as GMOs, safe to eat?
Although there is no definitive answer to this question yet, American consumers eat genetically engineered foods all the time. However, the maze of labeling laws makes choosing whether or not they want to eat them a totally different story.

GMOS BY THE NUMBERS:

8.72 BILLION
Total number of acres cultivated with GMO crops since 1996

17.3 MILLION
Number of farmers worldwide who grow GM crops

AND GET THIS...

THE MAJORITY OF
CORN [88%]
SOYBEANS [93%]
CANOLA [90%]
COTTON [94%]
GROWN IN THE U.S. IS GENETICALLY MODIFIED

GMOS AROUND THE WORLD

THE YEAR **1997**
The European Union (EU) first mandated labeling of food that used GMO crops as ingredients.

64 NATIONS
Since then, 64 developed and developing nations have mandated GMO labeling.

>.9% REQUIRED

The EU now requires labeling unless GM ingredients account for less than 0.9% of the total product.

1%

China, Brazil and a number of other smaller nations use a threshold of 1% GMO content.

No nations currently label animal products (meat, milk, eggs, cheese) that come from livestock fed with GMO products.

Many U.S. trading partners have labeling laws, and U.S. exporters already label these food items containing GMOs when sold overseas.

WHAT DO THE PEOPLE THINK?

Americans overwhelmingly support GM food labeling, according to studies conducted by:

96%	93%	95%	94%	93%	93%
MSNBC	Thomson Reuters Pulse™ Healthcare Survey	Consumers Union	Washington Post	New York Times	ABC News (answered that they'd support

WHAT ABOUT AMERICA?

24 Number of U.S states that currently have GMO labeling legislation pending

3 Number of U.S states that have passed GMO labeling measures

0 Number of U.S states with active GMO labeling laws

29 Number of U.S. ballot measures that have been defeated by Winner & Mandabach Campaigns, the firm hired by the NO TO LABELING lobby in California and Washington.

1% There is only a 1% chance of the Genetically Engineered Food Right-to-Know Act successfully passing (U.S GMO labeling bill).

STATES THAT HAVE PASSED LABELING MEASURES:

VERMONT

Only passed the House, no vote yet in the Senate

Even if it was to pass the senate, this law would not go into effect for another 2 years

The measure has been "watered down" due to lawsuit threats from seed and chemical company Monsanto

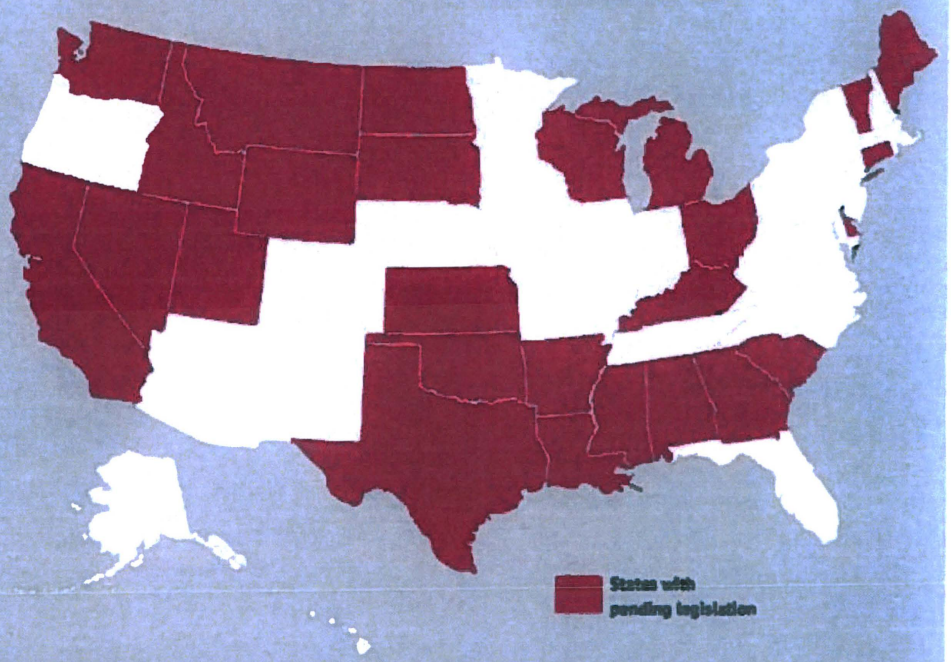
CONNECTICUT & MAINE

Laws require manufacturers to disclose genetically modified ingredients

However, these laws include provisions stipulating that they will not go into effect until 4 other states, one of which must be a bordering state, pass similar laws

These states also face similar lawsuit threats from corporations that produce GM seed/food

STATES WITH PENDING GMO LABELING LEGISLATION:



KEY BATTLES IN THE GMO LABELING FIGHT

CALIFORNIA–PROP 37

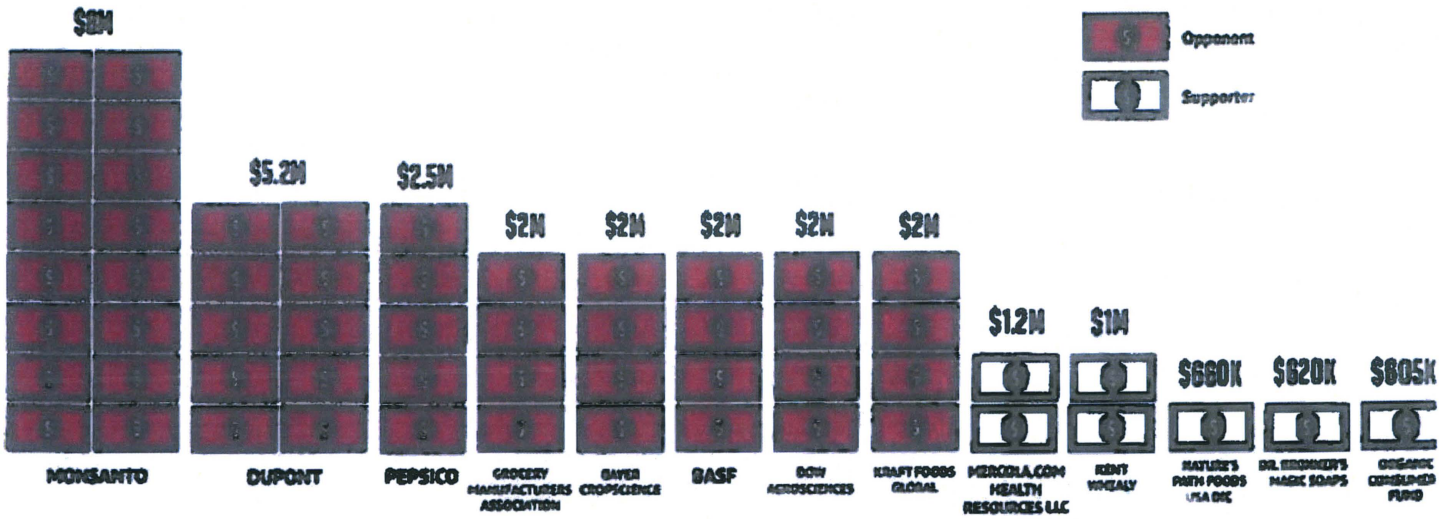
<3%

Would have prohibited GMO food from being labeled as "natural"

Despite initial widespread support, the initiative lost by a margin of less than 3% (November 2012)

Labeling opposition outspent supporters by a margin of $45 million to $6 7 million

PROP 37 SPENDING



WASHINGTON INITIATIVE 522 (I-522)

$$$ $

JULY 1 2015

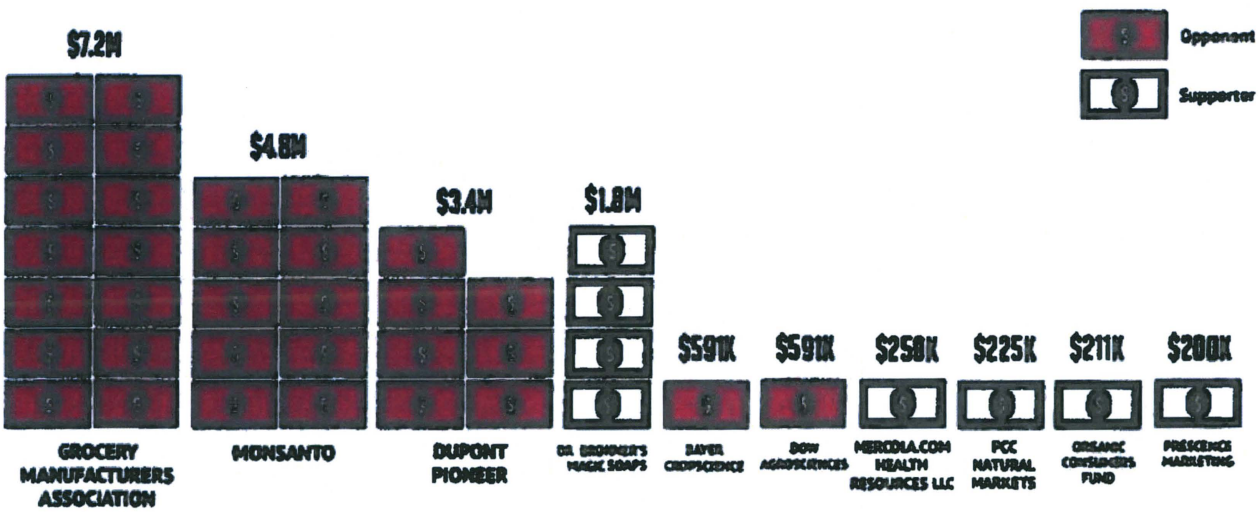
Nearly identical to Prop 37

Opponents of I 522 are outspending supporters by 3 to 1 ($17.2 million to $5.3 million)

If passed in November 2013, the law will take effect July 1, 2015

FINANCIAL SUPPORTERS & OPPONENTS OF GMO LABELING:

I-522 SPENDING



BY KELSEY BLACKWELL & ELISA BOSLEY

PUZZLING plates

WHY ARE WE MORE ALLERGIC TO OUR FOOD?

Before you plan your child's birthday party, do you ask whether any of the guests have a food allergy? That query is a modern must with good reason: One in 17 children now has some form of food reaction, says Robyn O'Brien, founder of the AllergyKids Foundation and author of *The Unhealthy Truth* (Harmony, 2009). An eye-popping statistic: Hospitalizations for severe food reactions rose sevenfold in just the past ten years, according to the European Academy of Allergy and Clinical Immunology.

It's not just kids, either. Although the number of adults living with food sensitivities is not currently tracked, "practically everyone has some kind of food issue," says Charles Cattano, MD, gastroenterologist and chief of medicine at Anne Arundel Medical Center in Annapolis, MD. Gluten alone affects an estimated 18 million Americans, and untold more people react to soy, nuts, dairy, and other common allergens. The question is: Why? Here are three possible answers.

Too cautious?

For years, the American Academy of Pediatrics (AAP) recommended that when introducing solid foods to babies, parents avoid the "big eight" allergens—milk, eggs, peanuts, tree nuts, fish, shellfish, soy, and wheat—for at least the first year. After that, the AAP suggested, parents should introduce these foods one at time, paying close attention for any adverse reactions.

But in 2008, having tracked more than a decade of rising reactions in kids, the AAP did a U-turn, advising parents to introduce allergenic foods as early as 5 months. Most recently, a 2013 paper in *The Journal of Allergy and Clinical Immunology* states that starting allergenic foods at 4 to 6 months *reduces* the risk of developing a food allergy. Consult your physician for guidance.

Too clean?

The most research-backed theory to explain the food-allergies increase is the hygiene hypothesis, proposed in 1989. It asserts that our lifestyle has become too sanitized and that because we're not exposing young children to enough germs, their immune systems aren't trained to tell the difference between harmless and harmful agents. "This really holds up when you look around the world and see that allergies are very uncommon in underdeveloped countries," says Robert Wood, MD, chief of pediatric allergy and immunology at Johns Hopkins Children's Center in Baltimore.

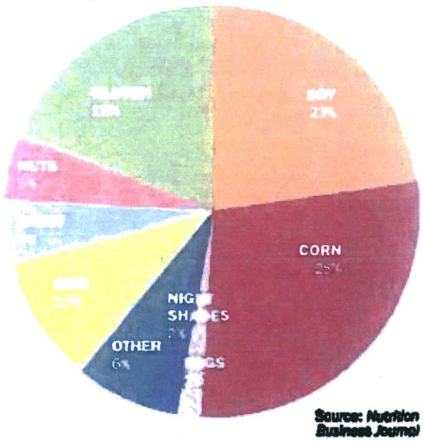
Corrupted food supply?

Other experts argue that the food itself is a concern. "If you're going to address the issue from this Purell angle, you must also look at how foods are produced," O'Brien says. "The fact is we're pouring chlorine on the animals we eat. What is that doing to our immune systems? We just don't know."

Another unknown: genetically modified (GM) foods, which have been artificially injected with bacteria, viruses, and genes to promote specific traits, such as resistance to pests and herbicides. Because these foods are so pervasive, it's practically impossible to conduct human trials on their effects. Although European animal studies have linked eating GM foods to allergenicity, this research has largely been dismissed in the United States because of concerns about study design, reporting, or analysis.

Still, it's hard to ignore the fact that the dramatic increase in food allergies, which began in the 1990s, coincides with commercial GM-crop introduction in 1996. "Are we allergic to the food, or are we allergic to what we've done to it?" O'Brien asks. The most common GM crops—corn, soy, canola, and sugar beets—are found in most packaged foods. And despite growing public awareness, GM ingredients remain unlabeled in the United States.

What allergenic food do you believe will be the *next* big concern?



Source: Nutrition Business Journal

WHAT YOU CAN DO

Elimination diet. If you suspect you or your child may have a food allergy, try an allergen food–free diet for at least two weeks and track differences in symptoms or mood. To learn how, go to deliciousliving.com and search for "elimination diet."

Buy organic. By definition, USDA Organic-certified foods are free of GMOs. Also look for products bearing the Non-GMO Project Verified label.

Consider vitamin D. Although most data is preliminary, a 2013 study of 5,276 1-year-olds established an association between vitamin D insufficiency and food allergies. If you and your kids get limited sun exposure, ask your doctor about taking vitamin D supplements.

BY DAVE CLARKE

the organic movement

THE 2014 FORECAST LOOKS HEALTHY!

Here are some facts and figures for you to chew on about the state of the organic movement and where it's headed as we welcome 2014:

97

The percentage of organic-buying families who bought organic fruits and veggies in the previous six months

3

The number of trade agreements the US has with other countries and regions—Canada, the European Union (EU), and Japan—to facilitate the exchange of organic products between their health-conscious consumers.

Total sales of organic products in the US projected for 2015 (up from $57.5 billion in 2010).

$104.7 billion

162

The number of countries practicing organic farming.

The percentage of organic-buying families who purchased organic breads, grains, dairy, or packaged foods in the preceding six months.

85+

81

The percentage of US families who buy organic at least sometimes.

SELECTED SOURCES "10 Top Trends in 2013 in the Natural and Organic Space," Sterling Rice Group, www.srg.com, 2013 ● "Growth Patterns in the US Organic Industry," United States Department of Agriculture, www.ers.usda.gov, 10/24/13 ● "New Study Examines Local, Organic Food Trends" by [illegible] From Field to Fork, http://[illegible] 8/5/13 ● "Organic Food & Organic Beverages Market—Global Industry Analysis, Size, Share Growth, Trends and Forecast, 2013-2019," www.researchandmarkets.com [illegible] ● "Organic Food Market—Global Industry Size, Share, Trends, Analysis, And Forecasts 2012-2018," www.transparencymarketresearch.com ● "Organic Food Trends Profile" by Marsha Laux, Agricultural Marketing Resource Center, www.agmrc.org 11/13

CENTER FOR FOOD SAFETY

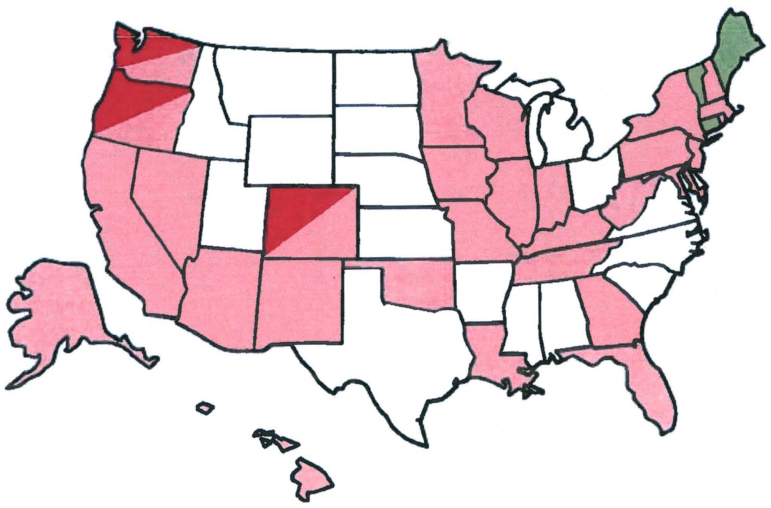
JUNE 2014 FACT SHEET

GE FOOD LABELING: STATES TAKE ACTION

IN 2011, CENTER FOR FOOD SAFETY submitted a formal legal petition to the Food and Drug Administration (FDA) on behalf of over 650 companies and organizations demanding that FDA require the mandatory labeling of genetically engineered (GE) foods. Since it was filed, 55 members of Congress and over 1.4 million people have submitted comments in support of the petition; yet, FDA has failed to take action to require the labeling of GE foods. Because of this, U.S. States have taken the lead in protecting the public's right to know what is in their food. In 2013, Connecticut and Maine passed GE labeling laws. In total, 54 bills were introduced across 26 states, and a Washington State ballot initiative narrowly lost, 51-49%. And the momentum is only growing.

Already in 2014, 35 new GE food labeling bills were introduced in 20 states, with an Oregon ballot initiative also on target for November 2014. Vermont also passed a GE labeling law set to go into effect in 2016. In the two-year period, over 70 bills and ballot initiatives were introduced across 30 states (see map below).

The international marketplace has long agreed that the labeling of GE foods is proper. Global food policy research conducted by CFS confirms that 64 countries, including the member nations of the European Union and countries as diverse as Russia, China, Brazil, Australia, Turkey, and South Africa, require standards of mandatory GE food labeling.



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For more information visit www.centerforfoodsafety.org

THE TOP REASONS TO SUPPORT STATE GE FOOD LABELING LEGISLATION

Consumers have a right to know what they feed their families. Unlabeled GE foods are misleading, and States have a duty to prevent consumer deception by requiring that factual information be disclosed in order to protect their citizenry from such deception. More fundamentally, U.S. courts have recognized a "right-to-know" rooted in the individual rights guaranteed by the U.S. Constitution and by common law

States have the legal authority to require labeling to ensure customer understanding. Particularly in the absence of any Federal leadership, States can and should enact legislation requiring GE labeling on behalf of their citizenry State labeling laws are well supported legally because they are rationally related to numerous state interests, including but not limited to: protecting consumers from misleading products and protecting public health, the environment, and the economy.

FDA's current labeling policy is unlawfully inconsistent. FDA already requires the labeling of nearly 4,000 ingredients, additives, and processes. Food labels do not depict a "skull and crossbones," as some may complain, nor are labels required only for foods that have been proven dangerous. In the U.S., we do not label dangerous foods; we take them off the market. In reality, labels provide information to consumers. For instance, whether or not orange juice is from concentrate or whether food has been irradiated are currently communicated to consumers via labels required by FDA.

Voluntary labeling is completely inadequate. Voluntary labeling is not a substitute for mandatory disclosure. It's been more than 13 years since FDA approved voluntary GE labeling, and exactly zero companies have voluntarily disclosed that their foods were produced through genetic engineering. Markets only work when consumers have the information needed to make informed choices

Over 90% of Americans support labeling of GE foods. Polls consistently show that over 90% of Americans believe GE foods should be labeled. A recent illustrative poll by the Mellman Group found that not only did over 90% of respondents support labeling, but nearly all Democrats (93% favor, 2% oppose), Independents (90% favor, 5% oppose) and Republicans (89% favor, 5% oppose) favor labeling.

Labeling GE foods will not increase costs to consumers or food manufacturers. According to a recent study by independent food-marketing expert Kai Robertson, changes to a food manufacturer's product labels have not been found to affect the prices paid by shoppers.

This is largely because food producers regularly, and even weekly, make changes to the labels of their products for marketing or regulatory reasons—without increasing their costs

STATE LEGISLATIVE STATUS AS OF JUNE 10, 2014

STATE	# BILLS
Georgia	1
Hawaii	1
Illinois	2
Iowa	2
Louisiana	1
Massachusetts	4
Missouri	1
New Hampshire	1
New Jersey	2
New York	5
Oklahoma	1
Pennsylvania	2
Rhode Island	4

STATE	BALLOT
Colorado	✓
Oregon	✓

TOTAL STATES	TOTAL LEG.
15	29

WHAT YOU CAN DO

- Call your state representatives to support labeling in your state.
- Tell Congress to support GE food labeling at http://bit.ly/MyRightToKnow.

EXECUTIVE SUMMARY

Genetically modified (GM) crops are promoted on the basis of a range of far-reaching claims from the GM crop industry and its supporters. They say that GM crops:

- Are an extension of natural breeding and do not pose different risks from naturally bred crops
- Are safe to eat and can be more nutritious than naturally bred crops
- Are strictly regulated for safety
- Increase crop yields
- Reduce pesticide use
- Benefit farmers and make their lives easier
- Bring economic benefits
- Benefit the environment
- Can help solve problems caused by climate change
- Reduce energy use
- Will help feed the world.

However, a large and growing body of scientific and other authoritative evidence shows that these claims are not true. On the contrary, evidence presented in this report indicates that GM crops:

- **Are laboratory-made, using technology that is totally different from natural breeding methods, and pose different risks from non-GM crops**
- **Can be toxic, allergenic or less nutritious than their natural counterparts**
- **Are not adequately regulated to ensure safety**
- **Do not increase yield potential**
- **Do not reduce pesticide use but increase it**
- **Create serious problems for farmers, including herbicide-tolerant "superweeds", compromised soil quality, and increased disease susceptibility in crops**
- **Have mixed economic effects**
- **Harm soil quality, disrupt ecosystems, and reduce biodiversity**
- **Do not offer effective solutions to climate change**
- **Are as energy-hungry as any other chemically-farmed crops**
- **Cannot solve the problem of world hunger but distract from its real causes – poverty, lack of access to food and, increasingly, lack of access to land to grow it on.**

Based on the evidence presented in this report, there is no need to take risks with GM crops when effective, readily available, and sustainable solutions to the problems that GM technology is claimed to address already exist. Conventional plant breeding, in some cases helped by safe modern technologies like gene mapping and marker assisted selection, continues to outperform GM in producing high-yield, drought-tolerant, and pest- and disease-resistant crops that can meet our present and future food needs.

GMO MYTHS AND TRUTHS

An evidence-based examination of the claims made for the safety and efficacy of genetically modified crops

Michael Antoniou
Claire Robinson
John Fagan

June 2012

GMO Myths and Truths

An evidence-based examination of the claims made for the safety and efficacy of genetically modified crops

Version 1.3

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June 2012

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Michael Antoniou, PhD is reader in molecular genetics and head, Gene Expression and Therapy Group, King's College London School of Medicine, London, UK. He has 28 years' experience in the use of genetic engineering technology investigating gene organisation and control, with over 40 peer reviewed publications of original work, and holds inventor status on a number of gene expression biotechnology patents. Dr Antoniou has a large network of collaborators in industry and academia who are making use of his discoveries in gene control mechanisms for the production of research, diagnostic and therapeutic products and safe and efficacious human somatic gene therapy for inherited and acquired genetic disorders.

Claire Robinson, MPhil, is research director at Earth Open Source. She has a background in investigative reporting and the communication of topics relating to public health, science and policy, and the environment. She is an editor at GMWatch (www.gmwatch.org), a public information service on issues relating to genetic modification, and was formerly managing editor at SpinProfiles (now Powerbase.org).

John Fagan, PhD is a leading authority on sustainability in the food system, biosafety, and GMO testing. He is founder and chief scientific officer of one of the world's first GMO testing and certification companies, through which he has pioneered the development of innovative tools to verify and advance food purity, safety and sustainability. He co-founded Earth Open Source, which uses open source collaboration to advance sustainable food production. Earlier, he conducted cancer research at the US National Institutes of Health. He holds a PhD in biochemistry and molecular and cell biology from Cornell University.

Earth Open Source

Earth Open Source is a not-for-profit organization dedicated to assuring the sustainability, security, and safety of the global food system. It supports agroecological, farmer-based systems that conserve soil, water, and energy and that produce healthy and nutritious food free from unnecessary toxins. It challenges the use of pesticides, artificial fertilizer and genetically modified organisms (GMOs) on the grounds of the scientifically proven hazards that they pose to health and the environment and because of the negative social and economic impacts of these technologies. Earth Open Source holds that our crop seeds and food system are common goods that belong in the hands of farmers and citizens, not of the GMO and chemical industry.

Earth Open Source has established three lines of action, each of which fulfils a specific aspect of its mission:

- Science and policy platform
- Scientific research
- Sustainable rural development.

Science and policy

Because the quality of our food supply is intimately connected with political and regulatory decisions, for example, on pesticides and GMOs, Earth Open Source functions as a science and policy platform to provide input to decision-makers on issues relating to the safety, security and sustainability of our food system.

Earth Open Source has published and co-published several reports that have had impact internationally:

- Roundup and birth defects: Is the public being kept in the dark?
- GM Soy: Sustainable? Responsible?
- Conflicts on the menu: A decade of industry influence at the European Food Safety Authority (EFSA)
- Europe's pesticide and food safety regulators – Who do they work for?

Scientific research and sustainable rural development

Earth Open Source has laboratory and field research projects under way on several continents. Farmer-led agricultural development projects are ongoing in Asia. Details will be released as these projects come to fruition.

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Full study available for download at: http://www.nongmoproject.org/learn-more/gmo-myths-and-truths/

UF UNIVERSITY of FLORIDA
IFAS Extension

FE934

A Synopsis of US Consumer Perception of Genetically Modified (Biotech) Crops[1]

Edward A. Evans and Fredy H. Ballen[2]

Introduction

Over the last few decades, the use of modern tools of molecular biology has made it possible to discover, isolate, and introduce several important agricultural traits (useful to both farmers and consumers) in cultivated crops. Such improvements are usually accomplished by the technique known as genetic engineering. Genetic engineering (GE), also known as genetic modification (GM), is the process by which an organism's genome (the entirety of an organism's hereditary information) is deliberately modified by inserting, altering, and/or isolating a specific segment of DNA that contains a gene or genes of interest, with the aim of introducing a new trait or suppressing an undesirable one. Crops obtained by using GE techniques are also commonly known as Genetically Modified (GM) crops, or biotech crops. The main advantage of the application of this technique is that it greatly shortens the time of crop development and improves the certainty of the outcome, compared with conventional crop development methods such as crop breeding.

To date, there are more than 30 commercial GM crops grown on almost 160 million hectares of land in 29 countries. Moreover, it is expected that by 2015, there will be more than 120 GM crops (Stein and Rodriguez-Cerezo 2010; James 2008). ...

Credits: ipsnews.net

Despite the fact that GM crops are widely grown, public opinion is mixed. While the European Union (EU) is very critical of GM crops, most of the other countries are either indifferent or favor GM and related products (products derived from GM ingredients) (Stein and Rodriguez-Cerezo 2010). Genetic modification crop research continues to be important...

1. This is EDIS document FE934, a publication of the Food and Resource Economics Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL. Published June 2013. Please visit the EDIS website at http://edis.ifas.ufl.edu.

2. Edward A. Evans, assistant professor, Food and Resource Economics Department, University of Florida, Tropical Research and Education Center, Homestead, FL, and Fredy H. Ballen, economic analysis coordinator II, University of Florida, Tropical Research and Education Center, Homestead, FL.

Classification of GM Research ...

World Situation

Commercial cultivation of GM crops began in 1996 and has been expanding ever since. Between 2001 and 2011, the global GM crop area increased at an annual rate of 20.41 percent, from 52.6 million hectares (MH) to 160 million hectares, representing about 8.65 percent of the total global crop area of 1.84 billion hectares that year (FAOSTAT 2013). In 2011, about 29 countries cultivated biotech crops, with the United States being the leading world producer of GM crops, with the cultivation of 69 MH, or about 43.1 percent of the global GM production area, followed by Brazil (30.3 MH, 18.93%); Argentina (23.7 MH, 14.81%); India (10.6 MH, 6.62%); and Canada (10.4 MH, 6.50%) (ISAAA 2011). Together, these five countries account for 90 percent of the total area under GM cultivation (**Figure 1**).

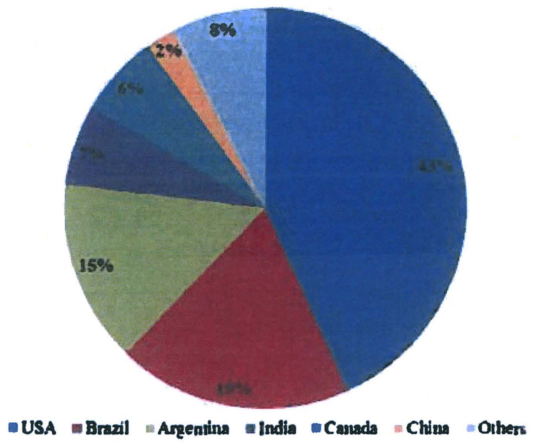

Figure 1. GM crops: Global area, by country, 2011 (%). Source: ISAAA (2011).

In terms of area cultivated, the main GM crops are soybean, maize, cotton, and canola, respectively. Historically, soybean has been the dominant biotech crop cultivated; its harvested area has grown at an annual rate of 12.6 percent, from 33.3 MH in 2001 to 75.4 MH in 2011. Biotech maize follows in importance, growing at an annual rate of 42 percent, from 9.8 MH in 2001 to 51 MH in 2011. Next is biotech cotton, growing at an annual rate of 26.3 percent, from 6.8 MH in 2001 to 24.7 MH in 2011. Finally, GM canola has expanded at an annual rate of 20.4 percent, from 2.7 MH in 2001 to 8.2 MH in 2011 (**Figure 2**). Other important GM crops include sugar beet, alfalfa, papaya, squash, poplar, tomato, sweet pepper, and potato, which together account for about 0.7 MH (1%) of the total area under GM crop cultivation (ISAAA 2011).

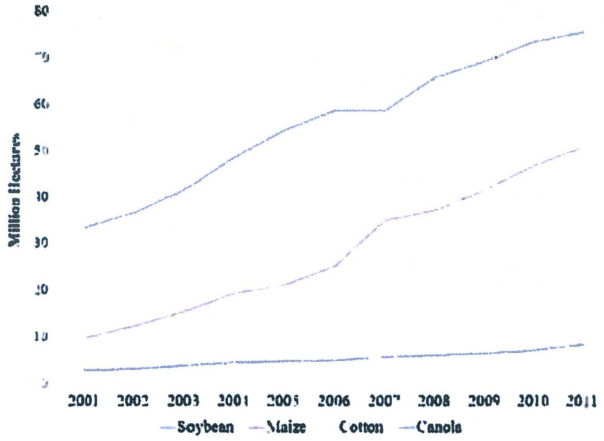

Figure 2 GM crops: Global area, by crop, 2001–2011 (million hectares [MH]). Source: ISAAA (various years).

When considered from an adoption rate perspective, biotech cotton is the global leading crop, followed by soybean, maize, and canola. As illustrated in **Figure 3**, in 2011, biotech cotton (24.7 MH) accounted for 82 percent of the global area of harvested cotton, followed by biotech maize (32%), biotech canola (26%), and biotech soybean (25%), respectively (ISAAA 2011).

...

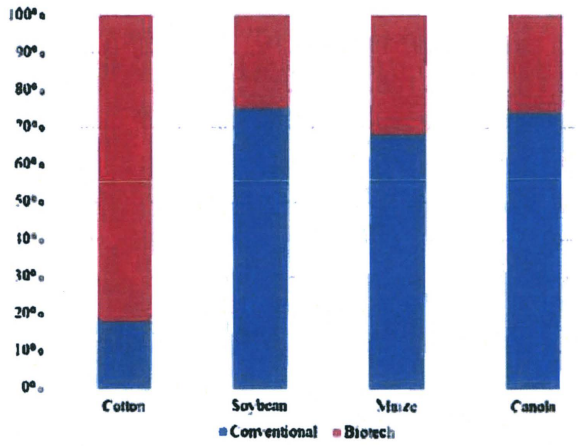

Figure 3 GM crops: Global adoption ratae, by crop, 2011 (%).. Source: ISAAA (2011).

...

Notwithstanding, biotech-derived food is considered a controversial issue, prompting government agencies of some developed countries, including some of the EU state members, Japan, Australia, Brazil, Russia, and China, to

implement legislation mandating the labeling f GM food products (Justlabelit.org 2012). ...

US Situation

Brief Overview of US GM Food Production, Trade, and Regulatory Framework

Before discussing consumer attitudes toward biotech products, it is important to provide a general overview about the current US GM food production, trade, and regulatory framework for biotech products. The United States is the largest world producer of GM crops. In 2011, the United States accounted for about 43.1 percent of the global biotech crop cultivated area (69 MH). Biotech crops grown in the United States include corn, soybean, cotton, canola, sugar beet, alfalfa, papaya, and squash (ISAAA 2011).

...

A 2006 study (Heslop 2006) found that that about 60–70 percent of processed foods sold by supermarkets in North America contain some ingredients derived from GM crops, primarily corn, soy, and canola. This percentage is likely to be much higher in the United States because of the higher adoption rate of biotech varieties of corn and soybean grown there. For crop year 2012, it was reported that about 88 percent of all the corn and 93 percent of all the soybeans grown in the United States came from biotech varieties. (USDA/ERS 2012).

Many US consumers are unaware of the GM ingredient content in processed foods because federal regulations do not require disclosure of this information....

...

US Consumer Attitudes toward Biotech Food

An insight into US consumer attitude toward GM food commodities can be gleaned from a survey conducted by Hallman et al. (2003). Among other things, the authors found that most Americans were not fully aware of GM foods ... [and] almost 50 percent were unaware that food products made with GM-derived ingredients are currently on supermarket shelves.

...

Conclusions

... With more than 30 commercial GM crops grown on almost 160 million hectares in 29 countries and the expectation that there will be around 120 GM crops by 2015, it is clear that agro-biotechnology is growing.

...

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What is GMO?

Agricultural Crops That Have a Risk of Being GMO

GMOs, or "genetically modified organisms," are plants or animals created through the gene splicing techniques of biotechnology (also called genetic engineering, or GE). This experimental technology merges DNA from different species, creating unstable combinations of plant, animal, bacterial and viral genes that cannot occur in nature or in traditional crossbreeding.

For consumers, it can be difficult to stay up-to-date on food ingredients that are at-risk of being genetically modified, as the list of at-risk agricultural ingredients is frequently changing. As part of the Non-GMO Project's commitment to informed consumer choice, we work diligently to maintain an accurate list of risk ingredients.

Agricultural products are segmented into two groups: (1) those that are high-risk of being GMO because they are currently in commercial production, and (2) those that have a monitored risk because suspected or known incidents of contamination have occurred and/or the crops have genetically modified relatives in commercial production with which cross-pollination (and consequently contamination) is possible. For more information on the Non-GMO Project's testing and verification of risk ingredients and processed foods, please see the Non-GMO Project Standard.

High-Risk Crops (in commercial production; ingredients derived from these must be tested every time prior to use in Non-GMO Project Verified products (as of December 2011):

- **Alfalfa** (first planting 2011)
- **Canola** (approx. 90% of U.S. crop)
- **Corn** (approx. 88% of U.S. crop in 2011)
- **Cotton** (approx. 90% of U.S. crop in 2011)
- **Papaya** (most of Hawaiian crop; approximately 988 acres)
- **Soy** (approx. 94% of U.S. crop in 2011)
- **Sugar Beets** (approx. 95% of U.S. crop in 2010)
- **Zucchini and Yellow Summer Squash** (approx. 25,000 acres)

Listed in Appendix B of the *Non-GMO Project Standard* are a number of high-risk inputs, including those derived from GMO microorganisms, the above crops or animals fed these crops or their derivatives.

Monitored Crops (those for which suspected or known incidents of contamination have occurred, and those crops which have genetically modified relatives in commercial production with which cross-pollination is possible; we test regularly to assess risk, and move to "High-Risk" category for ongoing testing if we see contamination):

- **Beta vulgaris** (e.g., chard, table beets)
- **Brassica napa** (e.g., rutabaga, Siberian kale)
- **Brassica rapa** (e.g., bok choy, mizuna, Chinese cabbage, turnip, rapini, tatsoi)
- **Cucurbita** (acorn squash, delicata squash, patty pan)
- **Flax**
- **Rice**
- **Wheat**

Common Ingredients Derived from GMO Risk Crops
Amino Acids, Aspartame, Ascorbic Acid, Sodium Ascorbate, Vitamin C, Citric Acid, Sodium Citrate, Ethanol, Flavorings ("natural" and "artificial"), High-Fructose Corn Syrup, Hydrolyzed Vegetable Protein, Lactic Acid, Maltodextrins, Molasses, Monosodium Glutamate, Sucrose, Textured Vegetable Protein (TVP), Xanthan Gum, Vitamins, Yeast Products.

You may also be wondering about…

- **Tomatoes:** In 1994, genetically modified Flavr Savr tomatoes became the first commercially produced GMOs. They were brought out of production just a few years later, in 1997, due to problems with flavor and ability to hold up in shipping. There are no genetically engineered tomatoes in commercial production, and tomatoes are considered "low-risk" by the Non-GMO Project Standard.
- **Potatoes:** Genetically modified NewLeaf potatoes were introduced by Monsanto in 1996. Due to consumer rejection by several fast-food chains and chip makers, the product was never successful and was discontinued in the spring of 2001. There are no genetically engineered potatoes in commercial production, and potatoes are considered "low-risk" by the Non-GMO Project Standard.
- **Salmon:** A company called AquaBounty is currently petitioning the FDA to approve its genetically engineered variety of salmon, which has met with fierce consumer resistance. Find out more here.
- **Pigs:** A genetically engineered variety of pig, called Enviropig was developed by scientists at the University of Guelph, with research starting in 1995 and government approval sought beginning in 2009. In 2012 the University announced an end to the Enviropig program, and the pigs themselves were euthanized in June 2012.

Rep. Geran Tarr

From: michael raffaeli <m_raffaeli@yahoo.com>
Sent: Friday, March 27, 2015 9:49 AM
To: Rep. Geran Tarr
Subject: HB 92

Dear Representative Tarr,

I wanted to let you know that I support your efforts in getting GMO labeling on the docket in Alaska. I came to Alaska because it allows me to live a healthy lifestyle with clean air, clean water, and I want the choice of what food I want to eat and to know where it comes from and how it was produced. I applaud your efforts with the introduction of HB 92. I know I am too late to provide support for the hearing of the bill in the Resources Committee (I was out dog mushing for the last 27 days), but please include this note in your records if you need to show support again. Thank you for your public service.

Smiles, Michael Raffaeli

Rep. Geran Tarr

From: James Barrett <rainforestjames@gmail.com>
Sent: Friday, March 27, 2015 12:30 PM
To: Rep. Benjamin Nageak; Rep. David Talerico; Rep. Mike Hawker; Rep. Bob Herron; Rep. Craig Johnson; Rep. Kurt Olson; Rep. Andy Josephson; Rep. Paul Seaton; Rep. Geran Tarr
Subject: HB92 Written Testimony
Attachments: HB92JamesBarrettTestimony.pdf

Members of the House Resources Committee,

Attached is my written personal testimony regarding HB92. I apologize that I cannot make it to testify in person today. Please take the time to read it and feel free to ask me any questions concerning the matter.

Thank you,

James Barrett
Rainforest Farms, LLC
907-957-4751

James Barrett
HB 92 Written Testimony
March 27th, 2015

Members of the House Resources Committee,

Thank you for your time and hard work this session. There are many pressing issues that Alaska faces at this time, among them, are important bills such the one before us, HB-92.

I am in full support of this House Bill 92. My reasons for my support are drawn from personal health experience and also so that future generations can be better informed about their health.

5 years ago, I suffered from severe migraines and was diagnosed with having ocular migraines. 2 years ago, my migraines got so bad that I had eventually resigned from my position as a Microcomputer Specialist at the Legislative Affairs Agency due to my inability to perform work duties.

After seeing several doctors and trying to figure the root cause of my migraines, I had eventually found myself resorting to what is called an elimination diet. The elimination diet basically uses the idea of eliminating all foods that may be adversed to ones health.

Some of the many things I had eliminated from my diet completely are meat, dairy, gluten, soy, salt (not sea salt), alcohol, cigarettes, refined sugar, canola oil, cheese, MSG, corn syrup, and much more. The difficulty in eliminating these types of food are not only based on the attachment to taste and comfort but also a neurological dependency created by the toxic foods themselves. This was not easy, but I needed to go back to work and doctors were no longer an option.

I also removed GMO foods from my diet. This was the hardest food to remove, not because of the attachment to the flavor of the food, but because it was very difficult to know what was a GMO food or not.

I have been practicing a strict vegan diet for that past 2 years, this includes the elimination of GMO food. My diet is based on the well being of my biological internal flora. Recent studies have shown that the neo-nicotinoids found in GMO foods severely harm and destroy the friendly gut bacteria in ones' body, thus starting a long list of adverse health effects. For me, reintroducing the healthy bacteria meant that GMO food could no longer be allowed. This was the key to my new found health.

After eliminating GMO food from my diet, all of my illnesses have gone away. It has been 2 years since I have seen a doctor. Even more surprising, I haven't experienced one bit of illness in the same amount of time.

The toughest part of the elimination diet, was discerning the GMO from the non-GMO. I believe that we must start labeling our food and we can start right here with this bill. As I raise my daughter how to take control of her own health, I want to teach her how to be aware of the food that she puts into her body. With the labeling of GMO foods, my daughter, as well as other growing children in Alaska, will have an easier way to control their health.

I ask that the committee please move HB92 forward for the sake of Alaskans' and well being.

I am a full time Juneau resident and am available to answer any questions that you may have.

Thank you,

James Barrett
Juneau, Alaska

WRITTEN TESTIMONY

Name: Donna Rae Faulkner

Representing: myself - and the health of all Alaskans

Bill No./Subject HB 92

Committee: House Resources Committee

Date of Hearing: 3/27/15

Hello - we farm in Homer — our business is Oceanside Farms and we produce vegetables using organic methods. We do not use synthetic chemicals or sprays and we do not use GMO's.

We really believe that all GMO food be labeled. It is the consumers right to know. We share the videos/DVDs ~~of~~ that help educate people about GMO's + their dangerous potential (GMO-OMG + Genetic Roulette, in particular) We believe that GMOs are not necessary + clearly pose a danger to human health. More long term research is needed - but we clearly do not believe that GMOs are worth the risks. Our food supply & its quality, is of core importance. Healthy, quality, safe food should be everyone's right. We appreciate Rep Sarah Tarr's comments and fully support HB 92.

Thank You!

WRITTEN TESTIMONY

Name: DON MCNAMARA

Representing: OCEAN SIDE FARMS

Bill No./Subject HB 92

Committee: House Resources

Date of Hearing: 3 27 15

NO GMO'S IN ALASKA

PLEASE LABEL

WRITTEN TESTIMONY

Name: Anne Wieland

Representing: self

Bill No./Subject HB92

Committee: House Resources

Date of Hearing: 3-27-15

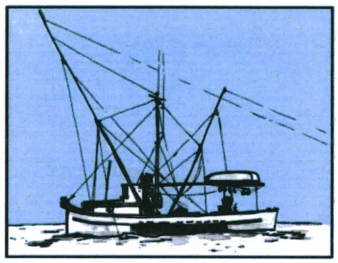
Dear Committee Members,

I strongly support HB92. I want to know what is in my food. People in many dozens of other countries where GMO labeling is required already have the choice whether or not to purchase food (containing GMO and cotton clothing). Why not us?

I personally want to know if we ever get GMO Salmon so we who care about our wonderful wild salmon can avoid the Frankenfish like the plague.

Thank you,

Anne Wieland - Homer



Alaska Trollers Association
130 Seward #205
Juneau, AK 99801
(907)586-9400 phone
(907) 586-4473 fax
ata@gci.net

March 26, 2015

Representative Benjamin Nageak, Chairman
House Resources
Alaska State Legislature
Juneau, AK 99811

RE: HB 92 Labeling of Genetically Engineered Foods

Dear Representative Nageak and Committee Members:

The Alaska Trollers Association (ATA) supports HB 92, which would require the clear labeling of genetically engineered (GE) food products. We believe that HB 92 reflects the wishes and a concern of the vast majority of Alaskan's who wish to make informed choices about the foods they eat.

ATA represents the interests of commercial hook and line salmon fishermen who operate in state and federal waters; our members are committed to delivering wholesome, high quality seafood to market.

Numerous public opinion surveys have been conducted in the U.S. and reveal that up to 95% of respondents favor the labeling of GE seafood; about half consistently say they would not choose to eat GE seafood if given a choice. But how can we tell which is which if it's not labeled?

Genetically engineered foods have been around for about 20 years; by 2012, FDA estimated that 93% of the soybeans and 88% of the corn planted in the US was modified. Very few of those products are labeled. In 1992, FDA established a policy that would allow approved GE foods, like soy and corn, to be sold without labeling, because those foods are not viewed as "materially" different from non-GE varieties. FDA considers "material" differences as those that can be recognized by the human senses, like taste and smell. So, the use of genetic engineering meets FDA's limited threshold for "materiality" the same, because the genetic and molecular changes can't be seen. Since 2009, FDA has endorsed this same labeling policy for GE animals. In the GE pipeline for approval are several species of plants and fish, mosquitos, pigs, goats, cattle, and more.

The Alaska Legislature has responded to the call for consumer information through labeling since 2005, with the passage of several bills specific to the labeling of farmed and/or GE salmon. One of the first bill's (SB 25[1]) sponsors, Representative Gary Stevens (R-Kodiak), noted, *"[t]his bill helps highlight Alaska seafood as distinct from genetically modified seafood, doing away with any vagueness that may exist to the consumer when purchasing seafood..."* His co-sponsor Senator Kim Elton (D-Juneau) was, *"... encouraged by the bipartisan support this bill received. It is a sign that, when it comes to seafood,*

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1 http://www.legis.state.ak.us/basis/get_bill_text.asp?hsid=SB0025Z&session=24

Alaskans stand up for informed consumers and friends and neighbors working in the wild fish industry." Fortunately, questions with regard to transparency about our food supply consistently transcend party affiliation here in Alaska.

Fishermen are particularly alarmed by the cavalier approach the nation has taken on the issue of genetically engineered foodstuffs. Once you allow a food to be modified, it becomes different and the level of risk changes, period. FDA's own scientists made that point during the 1990s debate on the agency's policy on GE plants. And while the scientific community is not yet done analyzing the risks of genetically engineered foods, it is well known that there are professional disagreements regarding its safety. At minimum, questions regarding toxicity and allergens do not appear to have been thoroughly vetted and resolved.

While the GE foods may ultimately prove safe and wholesome, there is no doubt that they are unlike the foods that most of us grew up on. It is a processed food at its most basic level, and should be labeled accordingly, particularly when no independent science exists to prove that it is safe. Such a label is not misleading, nor is it in any way false, it is simply telling the consumer the truth about a type of food that until just a couple decades ago was inconceivable.

Labeling of GE foods boils down to one of the most fundamental of human needs and rights –access to wholesome foods and information about how they are produced. The buying public must be allowed to make an informed choice and labeling will afford them that option. It is our hope that Alaska and the other 48 states will help make labeling available for consumers, particularly if the federal agencies continue to decline to do so.

Thank you for considering ATA's point of view on this matter.

Best regards,

Dale Kelley

Dale Kelley
Executive Director

Why GMOs Threaten Food Security in Alaska & What Can Be Done

Representative Geran Tarr

March 27, 2015

What is a GMO?

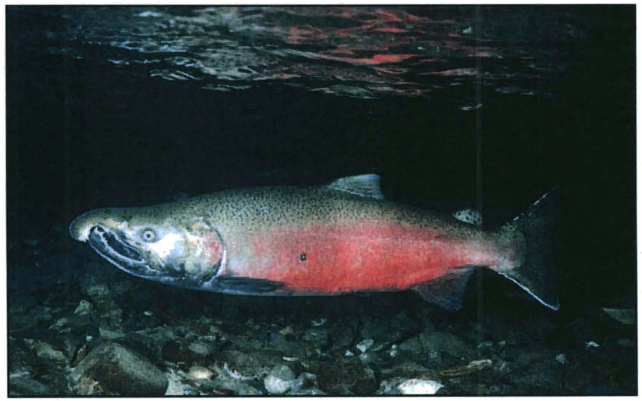
- Genetically modified organisms are plants or animals created using the genetic material from unrelated species

- Genetic modification involves the mutation, insertion, or deletion of genes.

- Differs from traditional breeding because of using unrelated species

GM Salmon

- Genetically modified using fast growing Atlantic salmon and DNA from two other species of fish
  - Ocean pout (an eel like fish)
  - Chinook salmon (King)



How a GMO Works

- Pesticide Producer
  - Engineered to produce their own pesticide in the form of *Bacillus thurengiensis* (Bt)
- "Roundup-Ready"
  - Engineered to be resistant to herbicides ("Roundup-Ready" crops)

How Common are GMOs

- United States is the world leader in genetically engineered crop production, with 165 million acres, or nearly half of global production.

- In the United States, approximately 85% of all processed foods contain GMOs

Most Widely Used GMO Crops

- **Canola** (approx. 90% of U.S. crop)
- **Corn** (approx. 88% of U.S. crop in 2011)
- **Cotton** (approx. 90% of U.S. crop in 2011)
- **Soy** (approx. 94% of U.S. crop in 2011)
- **Alfalfa** (first planting 2011)
- **Papaya** (most of Hawaiian crop; approximately 988 acres)
- **Sugar Beets** (approx. 95% of U.S. crop in 2010)
- **Zucchini and Yellow Summer Squash** (approx. 25,000 acres)
- **Apples** (approval announced February 13, 2015)

Examples of GMOs

- Roundup ready corn, soy, alfalfa, cotton

- Now second generation crops are being created to include multiple traits
  - Genuity® Bollgard II® with Roundup Ready® Flex Cotton:

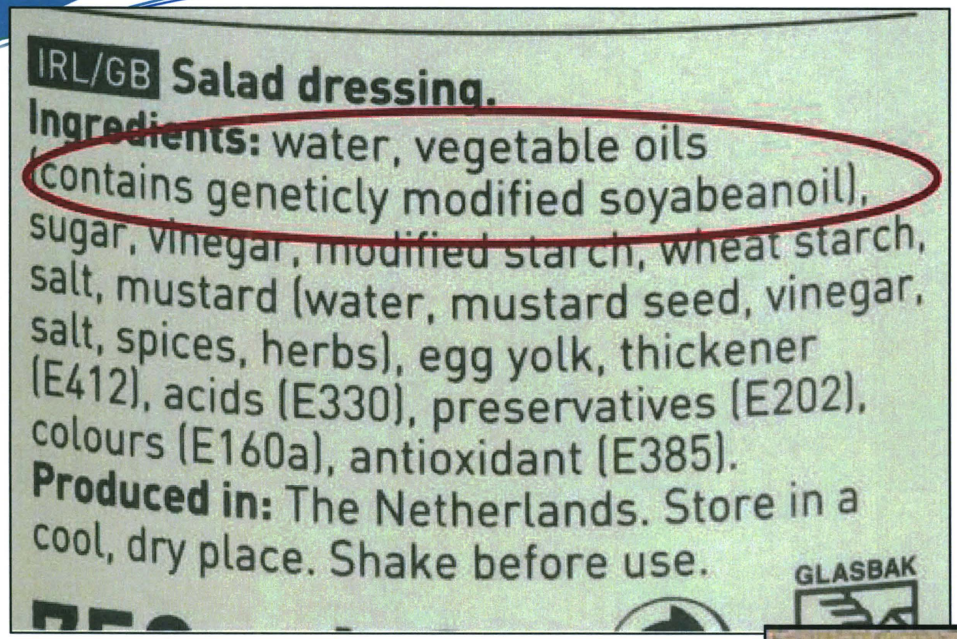
    Both traits are packaged into the cotton seed to provide growers with convenience and maximum flexibility to manage their spray schedule, as well as worm control.

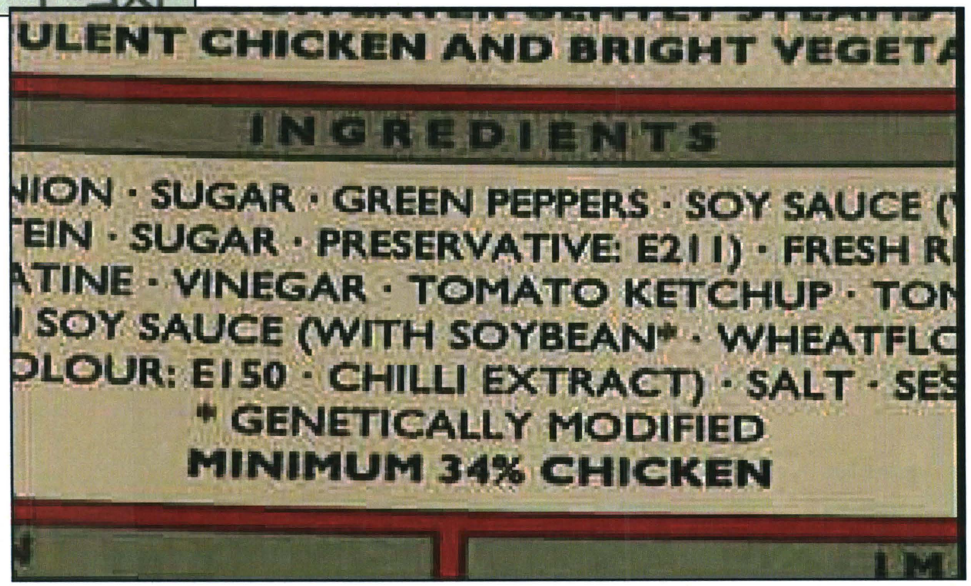
Efforts to Take Back Our Foods

- Many countries are eliminating the use of GMOs
- Japan, Italy, Hungary – just a few of the countries banning GMO crops
  - This summer Japan, where labeling is required, suspended their imports of US wheat
- More than 65 countries require labeling of GM food products
  - Same products sold in US are sold in Europe with labels

Efforts to Require Labeling of GMOs

- Citizens understand we have a right to know what is in our food
  - Laws passed in Vermont, Maine, & Connecticut
  - Citizen initiatives in California, Washington, & Oregon


IRL/GB Salad dressing.
Ingredients: water, vegetable oils
(contains geneticly modified soyabeanoil),
sugar, vinegar, modified starch, wheat starch,
salt, mustard (water, mustard seed, vinegar,
salt, spices, herbs), egg yolk, thickener
(E412), acids (E330), preservatives (E202),
colours (E160a), antioxidant (E385).
Produced in: The Netherlands. Store in a
cool, dry place. Shake before use.
GLASBAK


ULENT CHICKEN AND BRIGHT VEGETA
INGREDIENTS
NION · SUGAR · GREEN PEPPERS · SOY SAUCE (
TEIN · SUGAR · PRESERVATIVE: E211) · FRESH R
ATINE · VINEGAR · TOMATO KETCHUP · TON
I SOY SAUCE (WITH SOYBEAN* · WHEATFLO
OLOUR: E150 · CHILLI EXTRACT) · SALT · SES
* GENETICALLY MODIFIED
MINIMUM 34% CHICKEN

How to Avoid GMO foods

- Buy organic
- Look for labels

Food Availability

The New York Times http://nyti.ms/1FEm75F

The Opinion Pages | CONTRIBUTING OP-ED WRITER

Stop Making Us Guinea Pigs

MARCH 25, 2015

Mark Bittman

The issues surrounding G.M.O.s — genetically modified organisms — have never been simple. They became more complicated last week when the International Agency for Research on Cancer declared that glyphosate, the active ingredient in the widely used herbicide Roundup, probably causes cancer in humans. Two insecticides, malathion and diazinon, were also classified as "probable" carcinogens by the agency, a respected arm of the World Health Organization.

Roundup, made by Monsanto for both home and commercial use, is crucial in the production of genetically engineered corn and soybean crops, so it was notable that the verdict on its dangers came nearly simultaneously with an announcement by the Food and Drug Administration that new breeds of genetically engineered potato and apple are safe to eat. Which they probably are, as are the genetically engineered papayas we've been eating for some time. In fact, to date there's little credible evidence that any food grown with genetic engineering techniques is dangerous to human health — unless, like much corn and soybeans, it's turned into junk food. But, really, let's be fair.

Fair, too, is a guess that few people are surprised that an herbicide in widespread use is probably toxic at high doses or with prolonged exposure, circumstances that may be common among farmers and farmworkers. Nor is it surprising that it took so long — Roundup has been used since the 1970s — to discover its likely carcinogenic properties. There is a sad history of us acting as guinea pigs for the novel chemicals that industry develops. For this we have all too often paid with our damaged health.

Rarely is that damage instantaneous, but it's safe to say that novel biotechnologies broadly deployed may well have unexpected consequences. Yet unlike Europeans, Canadians, Australians and others, we don't subscribe to the precautionary principle, which maintains that it's better to prevent damage than

repair it.

We ask not whether a given chemical might cause cancer but whether we're certain that it does. Since it's unethical to test the effects of new chemicals and food additives on humans, we rely on the indirect expedient of extensive and expensive animal testing. But the job of the F.D.A. should be to guarantee a reasonable expectation of protection from danger, not to wait until people become sick before taking products off the market. (You might have thought that government's job was to make sure products were safe before they were marketed. You'd have been wrong — Rezulin or phthalates, anyone?)

Even now, when it's clear that more research must be done to determine to what degree glyphosate may be carcinogenic, it's not clear whose responsibility it is to conduct that research. The public health agencies of other countries? Independent researchers who just happen to be interested in the causes of non-Hodgkin's lymphoma, the cancer with which glyphosate is associated, according to the I.A.R.C.?

Or — here's an idea — how about Monsanto, which has made billions of dollars selling glyphosate and the associated seed technology. (The company produces crop seeds that are resistant to glyphosate, which can thus be freely sprayed onto fields, in theory killing all plants but the crop. This scheme isn't working as well as it once did for weed control, because many weeds have become glyphosate-tolerant. But that's another story.)

Now that the safety of glyphosate is clearly in question, perhaps it's time to mandate that the corporation — not the taxpaying public — bear the brunt of determining whether it should still be sold. Since the Environmental Protection Agency doesn't have the resources to test, let Monsanto pay for the necessary, and independent, research.

While we're at it, let's finally start labeling products made with genetically engineered food. Right now, the only way we can be sure to avoid them is to buy organic food. If G.M.O.s were largely beneficial to eaters, manufacturers would proudly boast of products containing them. The fact is that they have not. To date, G.M.O.s and other forms of biotech have done nothing but enrich their manufacturers and promote a system of agriculture that's neither sustainable nor for the most part beneficial.

We don't need better, smarter chemicals along with crops that can tolerate them; we need fewer chemicals. And it's been adequately demonstrated that crop rotation, the use of organic fertilizers, interplanting of varieties of crops, and other

ecologically informed techniques commonly grouped together under the term "agroecology" can effectively reduce the use of chemicals.

Meanwhile, how about getting glyphosate off the market until Monsanto can prove that it's safe to use? There's no reason to put the general population, and particularly the farming population, at risk for the sake of industry profits.

Correction: March 27, 2015

Mark Bittman's column on Wednesday incorrectly described thalidomide as a product the government failed to ensure was safe before it went to market. The drug, which was linked to birth defects in other countries in the 1950s and '60s, was never approved for use in the United States as a sedative. (The F.D.A. has approved its use to treat multiple myeloma and a complication of leprosy.)

Frank Bruni is off today.

A version of this op-ed appears in print on March 25, 2015, on page A27 of the New York edition with the headline: Stop Making Us Guinea Pigs.
