

January 28, 2005

Dr. Dale Sullivan
NDSU English Department

Dear Dr. Sullivan,

Enclosed is the publish issues research paper assigned in the web-based English 320 class.

This research paper is a result of visiting several websites and libraries. I have obtained a number of good information from various books and articles. I have researched both sides to the problem and have stated my firm belief in the solution provided.

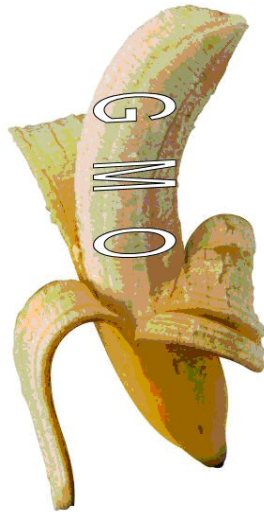
This paper's topic is labeling genetically modified products. It is my intent to explain the problems with not labeling genetically modified products and to hopefully provide a feasible solution to the problem.

Sincerely,

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Enclosure

**“A Little Information Goes a Long Way”
Labeling Genetically Modified Food Products**



**By
Chanda Johnson**

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Introduction

The purpose of this paper is to research the idea of labeling genetically modified food products. I will define the problem being researched and the criteria involved with the problem. I will propose a solution to the stated problem and explain why the proposed solution will work. Finally, I will conclude by recapping the problem and solution and sell my idea of why my solution is feasible.

To begin, one must understand a little bit about genetic engineering. Genetic engineering is defined as "...the process of taking DNA from one organism and inserting it into another." (Torr, 14) The organism derived by this process is typically referred to as a GMO (genetically modified organism).

Genetic engineering is quickly becoming a way of life in the agricultural industry. Genetically modified crops account for approximately 69 million acres worldwide. Many farmers are choosing to plant genetically altered crops because of the following reasons: increase in growth rate, the products are more nutritional, many of the crops are insect and weed repellent, and pesticide/ herbicide use is not necessary. Clearly, when one focuses on all of the benefits of farming genetically engineered crops why wouldn't you? This brings to mind a statement made by Tim Seifert a 'new-age' farmer in central Illinois "Roundup Ready has made a lot of bad farmers good farmers." This statement is clearly referring to the ease of farming genetically engineered crops.

With the increasing yields obtained from these new-age crops it is not uncommon to see the products of these super crops on the shelves of our local supermarkets. The majority of grocery shoppers throughout the United States may be unaware of what they are putting into their shopping carts, or their mouths. Surprisingly, many of the products

being purchased contain genetically altered ingredients. With this in mind, it brings me to the idea of labeling these genetically altered products.

Problem

The problem faced today is whether or not the GMO contained product should be labeled as genetically modified. Not labeling genetically modified food products could potentially threaten the consumer's decision to purchase a product, thus hurting the future of the producers and economy. Some of the concerns with not labeling genetically modified products are the harmful effects, the consumer's moral rights being violated, and the threat to the biotechnological producers.

Criteria

To the consumer's surprise, the effects of genetically modified food products are unknown. The effect of these new food products is the biggest concern regarding GMO's. Research has shown that the genetic mutations in crops may cause undesired production of toxins and allergens. According to my research, back in 1992 the FDA made testing of all transgenic foods that had genes from eggs, milk, shellfish, beans, wheat, and nuts mandatory. The reason being is that "foods in these groups make up about 90 percent of all known food allergies." (Cobb, 39)

Even though foods in the above groups are being tested, there are still many food groups being left out of the equation. According to Bill Lambrecht "...the FDA does not differentiate between food derived from genetic modification and food from conventional means. Thus, it does not require additional testing for potential allergens that coalitions of consumers, scientist, and environmentalists have requested." (Lambrecht, 46) Genetic

engineering of crops has not been around long enough to know specifically what products will cause adverse reactions.

Like all other research, making a conclusion regarding what is harmful could take years, even decades. To put this idea into perspective, how long did it take for research to show that smoking causes cancer? It only took millions of people to become ill and die before they decided that smoking was one of the leading causes of cancer.

Another example occurred in the 1980's. Tryptophan, which is a dietary supplement, was sold in many stores across the world. It was created by the use of genetically engineered bacteria. It became a product that many people consumed regularly for a variety of reasons, with depression and anxiety being widely popular. According to my research, thousands of people using this product in Japan suffered from neurological problems. More specifically about 1500 people became permanently disabled and 37 people eventually died after consuming this product. In 1989 the FDA recalled the product as it was proven to cause EMS (Eosinophilia-Myalgia Syndrome), which is a potentially life-threatening condition. This product had been on the market for 15 years before anyone had the slightest clue about what the adverse effects were. This situation goes to show that even though a product may seem safe, it could have the potential to be dangerous.

The consumer's moral right is another concern with not labeling genetically modified products. The consumer has a right to know what they are purchasing. Even though labeling the product as genetically modified may sway the consumer to another direction, it's still the consumer's decision. I have found in 1998 9% of all potatoes, 32% of all corn (which accounts for 16 MILLION acres), and 38% of all soybeans (which

accounts for a whopping 25 MILLION acres) derived from transgenic plants. This means that these crops have been altered genetically in some way. I have also found that 70% of all US packaged foods contain genetically engineered ingredients, and many processed foods that contain any soy or a corn product (fig 1.1), which is around 60%, have been genetically altered.

What does all of this information mean? Well, I'm sure that if one went out and surveyed a number of people of the general public, they would find that the majority out there have no idea that their food is being altered in any way. I was sure unaware of it until I started my research.

Currently the FDA enforces no regulation to label foods as genetically modified. The only way to assure the consumer that they are not getting a genetically altered food product is to tell them to only buy foods with the "Organic" label. Organic means no transgenes, pesticides, or herbicides are used. Buying *all* organic would be a very pricy alternative that not everyone can afford, not to mention very practical.

Another debate is when animal genes are inserted into plants. This poses a threat to vegetarian's who have personally chosen to ban eating any animal products or by-products. If these products are sold unlabeled then how will vegetarians know which products contain animal genes? If a vegetarian walked into a restaurant and asked for veggie burger and they certainly wouldn't provide them with a regular hamburger *without* notification. This would give the restaurant a bad rep, the same goes for genetically engineered products. People have the right to know if the product they are consuming is fit for the diet they desire.

Currently the FDA regulations on labeling food are: 1) labels on all foods must be truthful and not misleading 2) producers do not have to disclose information just for the consumers desire to know 3) labels must have common and usual names that the consumer can understand 4) label must contain information regarding possible side effects. When considering each of these regulations number four stands out, “label must contain information regarding possible side effects”. If the side effects of genetic engineering are unknown, then wouldn't that be considered “possible side effects”? The consumer should be aware of possible side effects a product may inflict.

The last concern with not labeling genetically engineered products is the producers. If the genetically modified products are not labeled the public may go the ‘organic’ route. This wouldn't entirely be considered a bad thing, for the organic farmers anyway. If the consumer's go the organic route that would mean many of the products in the grocery stores would be left on the shelves and the producers would lose great amounts of money. There would be a decreasing demand for the ‘genetically modified’ food and a surplus would result causing the prices of grain to drop. This scenario does sound a little out of reach, but if the consumer's became aware and concerned of the situation it's really not that far-fetched of an idea.

Take into consideration an incident that occurred in the United States in 2000. This incident involved selling taco shells in supermarket that contained Cry9C, which is a genetically modified corn declared by the EPA for animal consumption only. Somehow this corn was mixed with the corn used to make a brand of widely known taco shells. After the taco shells were produced and sold in various grocery stores across the US, “an alliance of environmental and consumer advocates calling itself Genetically Engineered

Food Alert” (Lambrecht, 44) discovered these shells did in fact contain Cry9C. This discovery caused havoc among consumers and the producers. The consumers were now aware of potential problems that could arise from genetic engineering and also the company had to spend a lot of money to recall their faulty product and earn back the trust of the public. This situation is just an example of how touchy society can be. I’m sure when people go into the grocery store to purchase these taco shells; they are hesitant on the product they are buying, not *really* knowing what they are getting.

Solution

Since the problem has been addressed and explained, the solution to labeling genetically modified products can be very simple. The solution contains three parts: 1) Actually labeling the products, 2) Providing awareness to the consumers, and 3) Getting the producers involved.

The first part to the solution would require labeling the product. The product does not have to go into great detail, but should at least have two essential words written on it: “Genetically Modified”. Labeling each genetically modified product as “Genetically Modified” will meet all of the FDA regulations previously explained. If the products have adverse effects, then they need to be listed as well.

To make the idea of actually printing on the product’s labels effective a time frame must be set. The time frame as to when all *existing* companies have to have the labels amended will be one year from the set decision. All *new* companies would have to start effective immediately. Creating this time frame would help to keep all of the current

products on the shelves to be sold, and when all of the old labels are sold, the new ones would start.

The second part to the solution requires providing awareness to the consumers. Awareness programs will be developed to educate the consumers about genetic engineering. These programs will explain what's going on in the agricultural industry and why it's beneficial. The manufacturers, producers, and the government will get together to form this program. This will help the consumers understand why genetic engineering is important and it will also establish a trusting relationship between the consumer and the producers. If the consumer knows what's going on, they are more apt to keep an open mind about the situation.

Keeping the consumer's aware of the current technology could be as easy as providing flyers at the local grocery stores with frequently asked questions and important information regarding the safety of the food they eat. Once the consumer feels safe with the idea of the technology and feel their rights have not been violated, they will buy the product. The time frame for these awareness programs would be effective immediately. This would provide the consumer's with the information before the new labels came out. This way by the time the new label's come out the consumer's could have time to decide their view on the situation and also will not be surprised.

The final part to the solution is getting the producers involved. This part of the solution and the awareness of the consumer go hand-in-hand. The only way anything will change is to make sure the producers understand the consumer's point-of-views. Once the consumers learn about genetic engineering, the producer's need to be open to

answer any questions the consumers have regarding their product. The producers do not have to put every detail on the label (as described in the first part of the solution) but, if the consumer does have questions the producer need to be open to answering them.

Solution Feasibility

The proposed solution to the problem of labeling genetically modified products will work because it's simple. The main idea of my solution is to keep the label as simple as possible and to gain the trust of the consumers by providing information they've been hungry for. People have a thirst for knowledge, and a little information will go a long way. By getting everyone involved (producers, manufacturer's, government, etc.) it will make the idea worthwhile; everyone will be able to give some information.

I feel this solution will work because even though the consumer will be aware of what's going on, one still can't teach an old dog new tricks—meaning, when a consumer gets set on a certain products they've used for a long time and really like, there is a slim chance that they will switch to a different product.

The proposed solution of labeling genetically modified products is cost effective because all product labels have to be printed anyway; the only words that would have to be present on the label would be “Genetically Modified”. Just by putting those two words on the label, and through the awareness program, the consumer's can easily make their decision on whether to buy the product or not. I do not think adding two words to a label that already exists will be very expensive, especially if the companies are given a year's notice to start.

I also do not think the awareness program will pose a huge loss of income. The only costs would be to set aside a couple days' work and print off information and distribute it to the grocery stores. Even though this will not be entirely free, keep in mind that it takes money to make money.

The timing of my proposed solution will work because the technology of genetic engineering is on the rise. Although this technology has been around for some time, the public is slowly becoming aware of it. This is a better time than in 10 years when EVERYTHING is genetically modified, it's better to ease people into change than throwing them at it. With all of the current technological advances already being made throughout the world today, people are getting used to the idea of things changing. It'll be better to start now while they're used to all of these changes already being made.

I also believe the time frame for labels will work because it allows *existing* companies to have the labels amended one year from the set decision and all *new* companies to start effective immediately. This would help to keep all of the current products on the shelves to be sold, and when all of the old labels are sold, the new ones would start.

If the time frames for the awareness programs are effective immediately it would provide the consumer's with the information before the new labels came out. By the time the new label's come out the consumer's could have time to decide their view on the situation.

Conclusion

Taking a look back, I have discussed how not labeling genetically modified food products could potentially threaten the consumer's decision to purchase a product, thus

hurting the future of the producers and economy. I have determined there are some concerns with not labeling genetically modified products: the harmful effects, the consumer's moral rights being violated, and the threat to the biotechnological producers. I have also discussed, in detail, the significance of each of these concerns.

The solution of this problem I have determined is quite simple. If each company labels their products simply as "Genetically Modified" it would fulfill the concern of the consumer's rights being violated. Labeling each product that is genetically modified will help to solve the debate about companies not being entirely honest with their product.

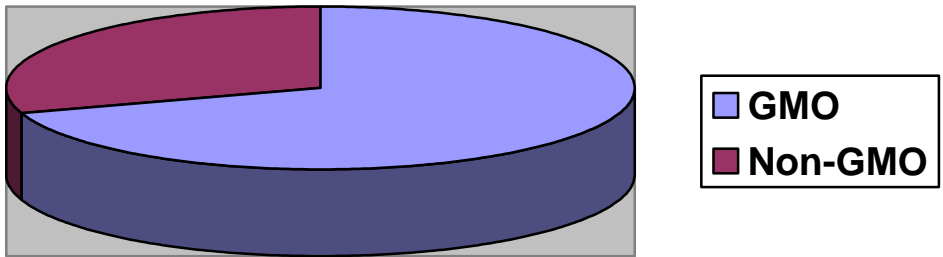
I have also proposed to begin a consumer awareness program developed by the people behind the genetically modified products. This program will help to educate the consumer's about genetic engineering and why it is NOT such a bad thing. Educating the public will provide a better understanding of what is happening with our society and will also make the consumer feel better about purchasing the product.

I have described why this solution to the problem of labeling genetically modified products will work, why it's cost effective, and finally why the timing of the solution will work. I firmly believe this solution of labeling the genetically altered products and creating awareness programs for the consumer is a great path to take.

The world is ever changing and the general public is becoming increasingly aware of their surroundings. The public sees it on the news, they hear it on the radios, and most importantly they have access to a wide variety of information via the World Wide Web. One thing that needs to be certain is that the information the public is getting is correct. By providing the information straight from the producers, manufacturers and government the public will see the information is in fact true.

I don't think that business will be lost by pursuing the route of my solution. Just think of the first time you purchased new laundry soap. I'm sure you were skeptical at first on if you would like the product, how it would perform, and if it was safe to use. After the detergent was all used up, more then likely, you went to the store to buy the exact same brand. This is typical of many people. Once the comfort level of a product is established, the consumer is likely to stay with the product. People have a certain loyalty when it comes to their products of choice. When the consumer is informed about what's in the product, why it's in the product, and how it's beneficial, they will learn to accept the fact that the product of their choice may be genetically altered.

So, the idea of labeling these products and creating an awareness program is a great road to take because it's cost effective, the timing is perfect, and last, but not least, it WILL work!



US Packaged Foods Fig 1.1

Annotated Bibliography

By Chanda Johnson

Background Information

The works in this section provide background information on genetic engineering in agriculture. This information will help the reader to better understand the topic of genetically modified organisms, before the issue of labeling these products is addressed.

Cobb, Allan B. *Scientifically Engineered Food: The Debate Over What's on Your Plate*. New York, NY. :The Rosen Publishing Group, Inc, 2000.

An informative book that describes what genetically engineered foods are, how they are used, and why we need them. Chapter 1 focuses on what genetically engineered foods are and chapter 6 focuses on “Consumers and Genetic Engineering”.

Dowswell, Paul. *Genetics: The Impact on Our Lives*. Austin, NY. :Raintree Steck-Vaughn Publishers, 2001.

The author of this book describes the purpose and reasons for genetically modified foods. This book has various subjects within the field of genetic engineering. The part of this book that will be used is the information regarding genetically modified food and commerce.

Stwertka, Eve and Albert. *Genetic Engineering*. 2nd ed. New York, NY. : Franklin Watts, 1989.

This revised edition provides good background information about how genetic engineering is used in animals. It describes the use hormones to provide an increase in production in livestock.

McCoy, J.J. *How Safe is Our Food Supply?*. New York, NY. : Franklin Watts, 1990.

The regulations and issues regarding labeling food products is discussed in this book. It contains various FDA restrictions about labeling food products.

Example Situations

The works in this section will provide real-life situations where labeling genetically modified organisms was or would have been important. These situations will help the reader to understand the viewpoint of the writer when expressing the need to label genetically modified products.

Lambrecht, Bill. *Dinner at the New Gene Café: How Genetic Engineering is Changing What We Eat, How We Live, and the Global Politics of Food*. New York, NY. :Thomas Dunne Book; St. Martin's Press, 2002.

There is one specific example that is taken out of this book. This example derives from chapter 3. This particular situation involves taco shells that were made for grocery stores and a fast food chain that unknowingly contained a genetically modified corn that was only approved for use in food animals.

McHughen, Alan. *Pandora's Picnic Basket: The Potential and Hazards of Genetically Modified Foods*. Oxford, NY. :Oxford Press, 2000.

This book contains much information regarding labeling genetically modified foods. Chapter 22 is specifically dedicated to labeling genetically modified foods. There are many scenarios available in this chapter and it also discusses how far labeling the GMO products should go (as far as being specific).

Torr James D., Leone, Bruno, Szumski, Bonnie, Miller, Stuart, eds. *Genetic Engineering: Opposing Viewpoints*. San Diego, CA. :Greenhaven Press, Inc., 2001.

There is one part of this book that discusses the labeling of genetically modified products. It talks about the different countries who are giving the ultimatum that genetically modified food must be labeled or they will ban them all together.

Gissen, A.S. (1993, May/June). The Truth About Tryptophan. *National Eosinophilia-Myalgia Syndrome Network*. Retrieved January 9, 2005, from http://www.nemsn.org/Articles/truth_about_tryptophan.htm

This is an article about Tryptophan and the how it was proclaimed harmful and taken off of the markets.