

Negative Effects of GM Wheat

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Introduction

The concept of genetically modified organisms is a relatively new one when you consider how long we have been growing food in this country. Until recently, this technology was not even available, and farmers grew our world's food using the natural genetic make-up of seeds. Today, things have drastically changed, and more and more of our world's crops are being grown using genetically altered seeds. The next genetically modified crop waiting in line to be introduced to the world is GM wheat, and North Dakota was chosen as the focal point of this introduction. As citizens of North Dakota, we should have some say in whether this crop is allowed to be grown and introduced into the public market. The implications of this decision will have lasting effects on not only the country, but the whole world as well. With our research into this heated topic, we have highlighted a few of the major negative effects GM wheat will have on our country and on the world.

Narration

The basis for our argument is the harmful and yet unknown consequences of introducing a genetically modified version of wheat into our normal wheat supply. We look at three of the major problems that are often overlooked or ignored by the producing companies, namely Monsanto. First of all, we look at the environmental effects of introducing this newly modified crop. Are there harmful effects to wildlife, the soil, or danger to neighboring farmers who choose not to use these unfamiliar forms of wheat?

The foreign market is another problem that is being completely neglected by the companies who produce these seeds. Roughly half of the countries we currently sell our wheat to have boldly stated that they will not buy from us if we use these new forms of wheat. That would be a devastating blow to our economy and would also greatly hurt our farmers.

Lastly, what effects will this new product have on our farmers? That is one of the questions we want answered but can get no response from the producers. They are only interested about getting the product into the market. The farmers who don't buy this new product may still be affected, and the mighty GMO producer Monsanto may even try and use legal action on these farmers, which would also negatively impact them. All of these points make us strongly believe that this new product should be researched further and not introduced unless it is more widely accepted and proven harmless.

Environmental Hazards

Since genetically modified organisms have been in existence, many questions have been brought to the world's attention on the environmental hazards they may contain. Through months of research on the internet, in libraries, reading books, e-journals, magazines, and listening to speeches, we have always come across the topic of unintended harm to other organisms. In an annual AACC (American Association of Cereal Chemists) meeting, a group of advanced grain scientists stated potential environmental impacts of GMO plants that might occur through movement of transgenic organisms to related wild or domesticated species, or through unintended consequences on non-related organisms sharing the same environments. Unintended consequences might include the exposure of human populations to new allergens, or the exposure of non-target insects to insecticidal proteins. In North America, the probability of transgenic organisms moving from wheat to wild relatives is low, but hybridization experiments have demonstrated there still is some slight risk of gene transfer to introduced goat grasses (Graybosch, 1). Our modern agriculture of wheat has been the result of thousands of years of co-evolution between humans and domesticated plants and animals. When genetic engineering is thrown into the traditional gene pool, it has the ability to alter these genes. Whether GMO wheat

has unintended consequences to species is still in debate. Many people say GMO wheat will not have a huge impact on the environment, but we beg to differ. Many forms of wildlife, such as animals, eat wheat or some forms of wild wheat. It is part of their food chain and if, in some way, the process of genetic engineering produces something that will repel the animals to stray away from wheat, it could cause a problem. GMO wheat may cause some type of allergen to certain types of species, which will also cause them to reject wheat as a supply of their food. Since it has taken us so many years to develop and maintain traditional gene pools, we may never fully understand the effects of genetically engineered wheat until many years from now.

Farmers who have accepted GMO wheat and have planted such wheat put other nearby wheat growers in potential risk of cross-pollination. Cross-pollination can occur in many ways, such as through movements between fields during harvesting and seeding, through grain handling and storage, and even by animals, wind or water. In fact, in North Dakota and Canada it has already been found that cross-pollination has occurred. In a report done by the Canadian Wheat Board in June of 2003, they state the environmental risks of transgenic wheat in respect to the cross-pollination of GM wheat and non-GM wheat (Canadian Wheat Board, 9). They state it is virtually impossible to stop the cross-pollination process when many farms are next to each other, which causes a huge environmental risk to non-GM growers. Basically, non-GM wheat will not contain its usual genetic traits and, as each year of planting and seeding occurs, its gene make-up will change more towards the GM wheat.

Another environmental risk the Canadians have researched is excess tillage. If Round-up Ready wheat was used, it may cause farmers to use tillage instead of herbicides to get rid of pre-seeding weeds (Canadian Wheat Board, 11). This may lead to erosion, negative moisture

conservation, and bad soil quality, which is a huge negative effect when looking at the long-term environmental effects of GM wheat or any kind of GM product.

Market Effects

Besides impacting the environment, the introduction of GM wheat will also negatively affect our wheat exports to foreign countries, which would be devastating to our economy. The number of countries that have already warned the United States about producing GM wheat is not surprising. Separate statements from the following countries support the fact that the United States cannot plan on making any revenue by exporting GM wheat to these places. Algeria, Egypt, Ethiopia, Japan, Indonesia, Malaysia, Korea, The Middle East, The European Union, France, Great Britain, Italy, Netherlands, Norway, and Costa Rica are examples of the many geographic areas refusing GM wheat according to the WORC (Western Organization of Resource councils). These 15 countries have spoken out, stating if the United States produces GM wheat, they will not purchase wheat from the United States any longer. As stated by the WORC, currently 50% of the wheat that is produced in the United States is exported, and about 47% of the countries in which the wheat is exported oppose GM wheat. In fact, these countries have even said they will not continue to purchase wheat from us if it has any trace of genetic modification.

A survey done by the WORC showed that 31.5% of the countries that oppose GM wheat decline this wheat mainly because it is not accepted by the consumers, while another 30% are against it for reasons of health concerns. Among these countries are Japan, Korea, Taiwan, and China, just to name a few. Currently the United States exports over 24 million metric tons of wheat to Taiwan and Korea each Year. 82% of Taiwan buyers and 78% of Korea buyers have already firmly stated they will not buy GM wheat from the United States. Another factor, or

what could almost be considered a threat to GM wheat producers, is that many countries abroad have stated that even if their own countries approve GM wheat and deem it safe that would not change their minds about purchasing GM wheat. At least 25% of respondents in each country, as well as 100% of respondents in Japan, China and Korea, all agreed on this.

The United States currently exports 30 million metric tons of wheat to Japan, and the Japanese Food Agency provided this comment to the press about their standing on GM wheat. As quoted from the Western Organization of Resource councils,

“Under the circumstances, GM wheat is not acceptable to consumers... The [Japan] Food Agency, as a wheat buyer, presumes that the import of GM wheat would be almost impossible without consumer's acceptance and flour miller's demand, even after Japan provided the regulatory safety approval. Furthermore, Japan might have to switch to a different country, which does not produce any GM wheat by increasing pressure of consumers.”

This is basically coming to the US as an iron clad statement saying they will not buy. Japan is a very important trading partner with the United States, and this is a market that we cannot afford to lose.

Currently the United States has lost over \$1 billion of soybean and corn exports because of the concerns with GMO's, as stated by Alan Guebert. The US wheat markets would get hit even harder because wheat, unlike corn and soybeans, is subject to tough foreign labeling laws. Wheat would have to be labeled, and numerous countries have already decided against GM wheat. What this means for the US economy is experiencing a drop in domestic wheat prices by as much as 35% and possibly losing 32% to 52% of its hard red winter wheat export according to the Save Organic Wheat site. Nicolaas Konijenkijk, the president of the Netherlands Company,

AGRO Consulting and Trading, sums up GM wheat in the foreign market when giving this statement to the North Dakota Interim Agriculture Committee,

"Wheat and bread are sacred in Europe and many other parts of the world. If farmers and government officials in the US fail to recognize that, they can kiss their markets goodbye."

Effects on Farmers

The introduction of GM wheat will undoubtedly affect many different people and occupations around the world, but the people most affected might be the actual producers of our wheat, the farmers. Although these people only account for a small percentage of our country's population, their job of growing our food is certainly a necessity of life. If we introduce GM wheat to the market, a drastic price drop and subsequent legal issues will affect farmers.

The price of wheat has never been a premium in this country and probably never will be. For every bushel of wheat a farmer sells to the market, they receive a minimal amount, which currently is at about \$3.87 (Minneapolis Grain Exchange, 2). While this price is certainly not ideal in the farmers' opinions, they still make do with the current price situation. If GM wheat is introduced to the market, the majority of people agree that the price will drop. The main question concerning farmers isn't "Is the price going to drop?" but is instead "How much is the price going to drop?" According to Dr. Robert Wisner, an agricultural economist, the price of wheat could drop by as much as one-third or more if GM wheat is introduced (Norfolk). If this drastic price drop would happen to occur, this already low price of \$3.87 would fall to a measly \$2.58, a \$1.29 drop. Most people would agree that losing a mere \$1.29 is not going to affect their lifestyle much, if at all. However, when you take \$1.29 and multiply it by thousands of bushels, you are actually losing a large sum of money. Suddenly, this loss, which was thought to

be minimal, is affecting the financial situations of our farmers a great deal. The standard of living for farmers is directly dependant on the dollar amount they receive for the crop they produce, and this standard of living will undoubtedly change if GM wheat is released into the open market.

The drastic price drop is not the only thing that is going to affect our farmers if GM wheat is allowed to be grown. Many other issues arise when you have this GM variety wheat growing alongside non-GM wheat. One of these issues is the legal problem that is caused by GM wheat contaminating wheat that does not contain these altered genes. Because farmers who grow crops containing GMO's have to pay a technology fee, biotech companies regularly and lawfully are able to enter a farmer's field and test for their seed strains. If a farmer's crop tests positive for genetically modified strains that the farmer didn't purchase, they can be fined thousands of dollars (Lydersen). This measure is meant to protect the biotech companies and prevent farmers from saving their GM crops and not paying the technology fee. This preventive measure, however, is affecting farmers who did not even purchase these GM crops but had their crop contaminated by nearby GM crop fields. These farmers can still be penalized for having this small percentage of GM trait in their crops, although they didn't even want the trait in their crop to begin with. This possible consequence of having GM crops is not at all a myth, but is actually evidenced by a number of real lawsuits involving canola farmers. The most widely publicized case is the one involving Canadian canola farmer Percy Schmeiser, who was sued by Monsanto for not paying the technology fee for his contaminated canola field. Even though he had not purchased GM canola seed, he was found guilty of having this genetically modified seed and not reporting it to Monsanto. Schmeiser was reportedly ordered to pay fines of \$145,450 for his actions and also had to pay large attorneys' fees (Clark). If this case is used as the

benchmark for future lawsuits involving contamination issues, what will this mean for the farmers? Non-GMO farmers should not be expected to monitor the strains of their seeds and report possible contamination. Instead, these farmers should be compensated for the fact that these gene-altered crops have devalued their intended GMO-free crops.

Refutation

After stating our points on the negative effects of GM wheat a reader may have some argument against our facts. But let's face reality here. How can GM wheat possibly reduce the hazards to our environment, or strengthen our foreign wheat exports when no one wants GM products, or even help farmers who are already coping on trying to make ends meet. Using genetic make up to establish a so-called better product for the farmer is not necessarily better. We do not know the long-term effects of GM wheat, yet studies continue to show the negative outcomes it has on our world. If someone states that GM wheat has many positives sides they may be right, but for every positive outcome there is a negative effect. Through all our years of life we have always been told that one negative will always outweigh one hundred positive things. GM wheat will hurt the environment, our marketing exports, and our farmers in many ways. If anyone disagrees with this, then put yourself into the shoes of someone who is affected. Become a farmer for instance. Farmers are always fighting to make ends meet in their life, and many farmers live day to day. Would you approve of lower prices on your GM exports? We certainly would not. Would you like it if your non-GM wheat were contaminated with GM wheat through cross-pollination? We certainly would not. Economically speaking many countries will not buy our GM products. Is this good to our economy? Who will buy our GM goods, besides the American citizen? This does not seem very smart to us. We could go on for days arguing the

harmful effects GM products pose, but in all reality we all know GM wheat will hurt us more greatly than it will help us.

Conclusion

The previous few arguments have illustrated our viewpoint that GM wheat should not be allowed into the open market. The environment, foreign market, and economic well being of our farmers are three very important aspects of our society today. If we allow GM wheat into the market, these three aspects may very well be negatively affected in the future. This, in turn, could have a rippling effect so devastating that our country could never recover from. While some of the points we have brought up our discussion may not happen to the extent that we predicted, they still are possible. The major point we are trying to get across is that we just don't know what will happen if GM wheat is opened to the public. The main question we should ask ourselves regarding the issue of GM wheat is, "Are we really willing to risk it?"

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