



THE PROBLEM WITH GENETICALLY MODIFIED WHEAT

The introduction of genetically modified (GM) wheat could ruin the environment and economy of the Northern Great Plains. Foreign and domestic buyers of wheat grown in this region have said that they do not want this wheat as risks to the environment and human health are unknown.

For five years, WORC has been fighting to protect the environment and economy of the Northern Great Plains against the introduction of GM wheat. As a result of this work, Monsanto recently announced that it was delaying the introduction of their Roundup Ready GM wheat that was set for release.

High Quality Wheat

Hard Red Spring wheat is the leading grain crop grown in the Northern Great Plains states. This wheat is sought after because of its high protein and gluten content, and ability to absorb more water than other varieties of wheat, which produces light, moist, quality breads.

70% of the United States' Hard Red Spring wheat crop is grown in Montana and North and South Dakota, of which 60% is exported overseas.

The Problem: Genetically Modified Wheat

Genetic engineering (modification) is the process of inserting genes from one kind of organism into another, creating an entirely new organism, which is then patented and owned by the company that developed it. Several varieties of Hard Red Spring wheat genetically modified to resist herbicide, drought, and disease are under development by agriculture biotech companies. One of the most well-known varieties of GM wheat is called Roundup Ready—developed by Monsanto to resist the company's widely-used Roundup herbicide. Other GM wheat traits being developed include drought-resistance, fusarium-resistance, and mildew-resistance.

Customers Don't Want GM Wheat

Many foreign buyers of U.S. wheat have said that they will stop buying any wheat from the United States if any variety of GM wheat is introduced. Since more than half of the wheat grown in the Northern Great Plains is exported, introduction of GM wheat could devastate the economy of this region.

A study released by WORC in October 2003 confirmed this. Dr. Robert Wisner, an economist at Iowa State University, found that the introduction of GM wheat within the next two to six years would lower wheat prices by one-third and 50% of U.S. wheat export markets would be lost.

"We have to listen to our customers, and they don't want GM wheat. If the U.S. goes ahead with this, we'd have to turn to Canada and Kazakhstan to get those supplies."

— Kjetil Gran Bergsholm, a trader at Stakorn, a Norwegian importer to Reuters News Service in February 2001.

Environmental Risks of GM Wheat

Like conventional wheat, GM wheat can cross-pollinate with conventional wheat and some weeds—creating, in the case of Roundup Ready wheat—a superweed that cannot be destroyed with herbicide. GM wheat can also contaminate neighboring fields by traveling through the air or with small animals and birds.

Conventional and organic wheat can also cross-pollinate or become mixed with GM wheat in the environment or in grain handling system. Once wheat is contaminated, it would be virtually impossible to reclaim.

Agricultural Risks of GM Wheat

A farmer who decides to plant genetically modified seeds must pay a fee and enter into a technology use agreement with the owner of the seeds, giving the farmer license to use the patented technology. Monsanto's technology use agreement prohibits farmers from saving seeds to replant the next year or selling the seeds to another farmer to plant. The agreement also requires farmers

to use specific herbicides in a company-directed weed management plan. If the terms of this agreement are

Monsanto claims that its Roundup Ready wheat would require less herbicide use while increasing yields. However, a study in 1999 by Dr. Charles Benbrook found that production costs of Roundup Ready soybeans were actually 50% more than conventional soybeans.

violated, Monsanto can impose fines as much as 120 times the technology fee paid by the farmer. This agreement releases Monsanto from liability for damages caused by the crops—leaving farmers liable if their crops contaminate a neighboring field. Monsanto has sued farmers when GM seeds were found in their crops, if the farmer did not plant or buy the seeds.

Health Risks of GM Wheat

For the most part, health risks of GM wheat are unknown. Since no GM wheat has been released, extensive studies on the effects on human health cannot be completed. Few independent studies of the safety of any GM foods have been done.

Unlike other GM grains, such as corn and soybeans, wheat is grown primarily for direct human consumption—not processed into oils or used as livestock feed.

Scientists warn that the consumption of GM foods in general might result in new allergies, resistance to antibiotics, inability for the body to absorb vitamins or minerals, and other health problems.

Results of studies on animals fed GM foods include: cancerous cell growth, damaged immune systems, atrophy of the liver, inhibited development of their brains and livers, inhibited growth of blood cells, false pregnancies, sterility and mysterious deaths.

The only human health study conducted found that a GM gene inserted into soybeans randomly transferred out of the soybeans and into the DNA of bacteria found in the digestive system. If this gene is allergenic or toxic to the human body its effects could last a lifetime.

What You Can Do

- Ask your local bakeries and markets to buy only GM-free wheat.
- Ask your state and local representatives to support policies that protect farmers from genetic contamination.
- Visit WORC's website, www.worc.org, to stay informed on food safety and GM issues.



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