



THE PROBLEM WITH GM ALFALFA

The “Queen of Forages”

Across the U.S., farmers and ranchers value alfalfa for its superior quality as forage. Alfalfa is grown on over 21 million acres, and is worth \$8 billion per year (not including the value of final products, such as dairy products). It is the third most valuable crop to U.S. agriculture. Alfalfa is the fourth most widely grown crop behind corn, soybeans, and wheat. While alfalfa is primarily used in feed for dairy cows and beef cattle, it also greatly contributes to pork, lamb, sheep, and honey production because of its low fiber and high protein content.

In June 2005, the Monsanto Company and Forage Genetics International won approval by the USDA for Roundup Ready alfalfa, a variety that tolerates the leading ingredient in Monsanto's trademark Roundup herbicide, glyphosate. Monsanto's alfalfa is the first genetically modified perennial crop to be commercialized, which poses special environmental, agricultural, and economic risks.

Agricultural Risks of GM Alfalfa

Genetic Contamination

Alfalfa is a cross-pollinating crop so genetically modified DNA from Roundup Ready fields is nearly certain to contaminate organic and other GM-free fields. Contamination could ruin organic alfalfa and alfalfa export markets, as well as other organic and GM-free markets, including some in the natural beef, horse breeding, sprouting, and honey industries. No law or regulation requires farmers who plant Roundup Ready seeds to create refuge or buffer areas to avoid cross-pollination with neighbors' crops or surrounding weeds. USDA says that farmers who want to be GM-free are responsible for preventing contamination of their crops.

“It is difficult to certify that a non-GMO will not be contaminated if grown in an area where GMO alfalfa cultivars are produced.”

– William T.W. Woodward, Washington State University Extension

Unfair Liability

Because Monsanto patents its genetically engineered seeds, farmers who purchase Roundup Ready alfalfa seeds will have to sign *Technology Agreements* that shield Monsanto from liability for accidental contamination or any other problems its product may cause. The effect of these agreements is to pit farmer against farmer, and to let Monsanto off the hook for any economic damage caused by its product.

Environmental Risks of GM Alfalfa

Increased Pesticide Use

Since 1996, pesticide use on herbicide tolerant crops has increased by 138 million pounds. In California alone, it is estimated that Roundup Ready alfalfa could result in the application of 200,000 pounds more herbicides a year.

Only 17% of alfalfa planted in the U.S. is treated with herbicides.

Roundup Resistance

Not only is Roundup weak on some important alfalfa weeds, several glyphosate-resistant weeds already exist, and evidence for others is mounting. Farmers who use Roundup to kill alfalfa at the end of its stand life and experience glyphosate resistance in weeds or volunteer crops, or control wild alfalfa along roadsides, will have to resort to less friendly and more costly chemicals. It is estimated that Arkansas farmers will spend \$500 million in 2005 controlling glyphosate-resistant weeds.

University of California-Davis specialist, Mick Canevari, has seen weed resistance to glyphosate in his experimental plots where Roundup Ready alfalfa has been grown for three years. “When we started this study, there were four or five stinging nettle plants on [one] end of the field. Now you can see nettle all along the field. We're seeing more and more nettle each year.”

Non-target organisms

Over 130 species of birds visit alfalfa fields each year, including endangered species. Washington State did not analyse the possible impacts on birds, insects, and other beneficial organisms were not analyzed in the Environmental Assessment.

Markets at Risk

Honey

Honey bees are an important pollinator of alfalfa, and most U.S. honey is produced from alfalfa pollen. Honey bees can transfer pollen several miles, and could cross-pollinate Roundup Ready alfalfa with conventional varieties. Honey producers risk losing markets that demand honey free of transgenic traits. A study for Forage Genetics shows that honey bees transferred Roundup Ready alfalfa genes to non-Roundup Ready alfalfa more than 2.5 miles away.

Organic and Natural Foods

As the organic and natural dairy, beef, and honey markets continue to expand, so does the demand for organic alfalfa. In 2005, there was a shortage of organic milk and grain, and many producers have started to import organic feed to fill this demand. Some food retail stores already require name brand products to be free of GM ingredients, including Trader Joe's, Wild Oats, and Whole Foods.

Many organic and natural beef producers who feed their cattle non-GM feed are unable to purchase grain with a guarantee that it does not contain transgenic traits because of the rampant contamination of U.S. corn, soybeans, and canola. If alfalfa becomes as contaminated as other commodity feeds, non-GM feed sources will be increasingly expensive or impossible to find for farmers and beef and lamb producers who are, or want to be, GM-free.

Alfalfa Hay Exports

Most U.S. alfalfa is used as domestic animal feed, while 5% is exported. 75% of these exports are bought by Japan, and the rest is shipped to Korea, Taiwan, Mexico, and Canada. Customers in these countries demand GM-free feed, and export companies have been outspoken about their opposition to Roundup Ready alfalfa. 99% of exported alfalfa is produced in the West, mostly Washington, Oregon, and California.

"Some of our Japanese hay customers are asking us to sign documents saying no genetically modified products will be coming over."

– Jeff Plourd of El Toro Export, El Centro, CA

What You Can Do

- If you grow alfalfa, ask your seed dealer to make sure you can buy GM-free seed.
- If you buy alfalfa for livestock, let your suppliers know that you want GM-free hay.
- Ask your state and local representatives to support policies that protect farmers from genetic contamination.
- Visit www.worc.org to for more information on GM alfalfa and other GM crops.



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