



Frankenfood in the Valley

GM sugar beets pose contamination threat to organic produce

Frank Morton saw it coming. Morton's Wild Garden Seeds produces organic seed in Philomath and he has been a lone voice opposing the introduction of genetically modified "Roundup Ready" sugar beet seed production in the Willamette Valley. He warned that pollen from the GM beets could contaminate organic and conventional Swiss chard and table beets growing in the Valley.

A recent incident confirmed how easily that could happen and raised doubts about the ability of the sugar beet industry to keep GM sugar beets from contaminating related conventional and organic plants. In May, GM sugar beet plants were found in a soil mix sold to gardeners at a landscape supply business in Corvallis.

Morton is outspoken about the introduction of GM beets because genetically modified organism (GMO) contamination would destroy the organic status of the seed and ruin his business. "If there is any GMO contamination, my customers won't buy the seed. Who is going to pay for that?"

Coordinated industry effort to convert to GM

GMO contamination is an ever-present threat because the Willamette Valley is home to all the sugar beet seed production in the U.S. Two large companies, Beta Seed and West Coast Beet Seed, supply seed to sugar beet farmers in Idaho, Montana, Wyoming, Minnesota, North Dakota and other states where the beets are grown. Harvested beets are processed by seven processing companies, the biggest being American Crystal Sugar Company, based in Moorhead, Minn. These processors supply beet sugar, which accounts for one-half of the U.S. sugar production, to food and candy manufacturers, such as Mars and Hershey's.

Four years ago, sugar beet processors decided to convert the entire U.S. sugar beet production to Roundup Ready GM varieties, developed by Monsanto Company. The processors said farmers needed GM beets for better weed control.

The sugar beets are genetically modified to withstand sprays of Monsanto's Roundup herbicide. This allows farmers to spray their fields with Roundup, killing the weeds, but not the transgenic sugar beet plants. And it helps Monsanto make more money.

Unanimity was necessary, Morton says. "If any one of the beet processors or a major candy company had rejected the idea of GM beets, the introduction would not have gone ahead."

Unlike corn and soybean production where non-GMO alternatives are available, the sugar beet processors did not want that option.

"This was a coordinated effort to genetically modify an entire sector of the processed food industry simultaneously and without holdouts that might otherwise have provided a source of conventional beet sugar to fulfill non-GMO consumer demand," Morton says.

Stealth introduction in the Valley

Field trials of GM beets began in the Willamette Valley in 2005 — quietly, Morton says. "The initial stages of GM beet seed production were carried out in secrecy for at least two years without other sugar beet seed growers having any knowledge or notification that GMOs were in the air, literally."

The Oregon Department of Agriculture did not ask for public comments nor notify anyone about the trials. "A farming technology revolution went on silently for three years, and was definitely not televised or bragged about," Morton says.

GM sugar beets were grown on a wide scale for the first time in 2008, accounting for an estimated 50 percent of the two million acre U.S. sugar beet crop. The beets were processed into sugar, which is now in foods such as cereals, cookies, and other products. American consumers would not know that they are eating sugar from GM beets because the U.S., unlike more than 30 other nations, does not require labeling of GM foods.

Lawsuit to stop GM sugar beets

Morton's concerns led him to initiate a lawsuit organized by the Center for Food Safety to sue the U.S. Department of Agriculture for failing to conduct an environmental impact statement (EIS). "USDA didn't consider the impact on all these farms and markets to where we sell seeds. My markets have zero tolerance to GMOs," he says.

The suit was necessary to save precious

seed resources, he says. "This was a last step to protect an industry and our businesses from introgression of genetic pollution into the Willamette Valley," Morton says. "Nobody considered that Roundup Ready sugar beet in one generation might turn up as Roundup Ready salad greens in the next."

Morton and the other plaintiffs hope that a judge's ruling in 2007 requiring USDA to conduct an EIS for Roundup Ready alfalfa will set a precedent for their case.

GM food health risks

Sugar beets are the latest GM crop to be grown in the U.S., joining soybeans, corn, alfalfa, cotton, canola, and other crops. The U.S. leads the world in GM crop production with more than 150 million acres.

GM crops are highly regulated and even banned in many countries, particularly in Europe where consumers are wary of so-called "Frankenfoods."

Recent studies confirm their fears. A study published earlier this year by Italy's National Institute of Research on Food and Nutrition found significant disturbances in the immune system of mice that had been fed a GM corn developed by Monsanto. A recent study conducted by the Austrian Ministries for Agriculture and Health found that mice fed a hybrid GM corn produced fewer litters, fewer total offspring and more females with no offspring than mice fed conventional corn.

"There was a 20 percent decline in offspring (in mice fed GM corn)," said Michael Hansen, senior scientist for food safety at Consumers Union, which publishes *Consumer Reports*. "There is something going on to have (such negative) reproductive effects."

Meanwhile, there is an alarming lack of scientific research showing the safety of GM foods. Biotechnology companies such as Monsanto are not required by the U.S. Food and Drug Administration to submit safety tests on GM crops, such as Roundup Ready sugar beets. Such submissions are voluntary. Judy Carmen, Ph.D., director of the Australian-based Institute of Health and Environmental Research, says, "GM food safety testing is woefully inadequate."

Problems with Roundup

Then there are the health threats from Roundup herbicide. Monsanto claims Roundup is benign, but recent research shows otherwise. A study conducted by researchers at the University of Buenos Aires medical school in Argentina found that small amounts of glyphosate, the primary ingredient in Roundup, cause brain, intestinal, and heart defects in fetuses. Meanwhile, scientists at France's University of Caen have found that one of Roundup's "inert" ingredients, polyethoxylated tallowamine, was deadlier to human embryonic, placental and umbilical cord cells than glyphosate itself.

Scary results especially when considering that more than 100 million pounds of Roundup are applied to US crops and lawns each year.

GM beets found in soil mix

In May 2009, Morton was disturbed to find out that GM sugar beet plants, called "specklings," were found in Fertile Mix, a

soil mix sold to home gardeners by Pro Bark based in Corvallis.

Business owners Jeff and Julie Jackson said they had no idea the plants were in the soil mix, and how they got there no one knows.

An unidentified individual purchased the mix, found the sugar beet specklings and contacted Carol Mallory-Smith, a professor of weed science at OSU. Smith took samples from 10 plants, tested those and found that about half tested positive for the genetically modified Roundup Ready gene.

Following the discovery, Pro Bark stopped selling Fertile Mix, but the Jacksons don't know how much of it had already been sold.

Morton was tipped off about the discovery from a friend who had contacted an environmental reporter at *The Oregonian* about the story, but the reporter never responded. Morton's friend then contacted Bennett Hall, a reporter and editor at the *Corvallis Gazette-Times*. According to Morton, Hall did nothing with the story for a week until Morton called and gave him an earful to publish it, which he did.

'Cluster bomb with Roundup Ready beets'

"They screwed up. Right out of the gate you have problems. Nobody thought about leftover specklings. You can throw them on the ground, and they will grow," Morton says.

Morton fears that other people purchased the soil mix containing the GM sugar beet specklings and that these will take root and shed pollen near his farm, crossing with — and contaminating — his plants. He likens the situation to "a cluster bomb with Roundup Ready beets around Philomath. This is upwind of me and very close."

While Mallory-Smith acknowledges that sugar beets have been grown in the Willamette Valley for many years, she also says, "I believe that it would be extremely difficult to prevent pollen movement."

No discussion, no responsibility

Morton is frustrated because the two seed companies likely responsible for the incident, West Coast Beet Seed and Beta Seed, aren't saying anything. "No one has stepped forward to accept responsibility," he says.

Greg Loberg of West Coast Beet Seed told the *Corvallis Gazette-Times* that he couldn't say anything because of the lawsuit.

Morton contacted the Willamette Valley Specialty Seed Association about the problem. "I told them this is trespass; I will make this an issue so they can't keep ignoring it. Somewhere along the line responsibility will be assigned," he says.

There is a silver lining. Morton says the incident could help the lawsuit against the USDA over GM beets because it highlights how difficult it will be to stop GM pollen drift.

The case was scheduled to go to court in May 2009, but the presiding judge said he would issue a decision based on the written evidence. The judge's decision is expected any day.

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