

Red, Green or GMO?

Will the future of New Mexico's chile include genetic engineering?

By: [Laura Paskus](#) 10/15/2008

Brueggen doesn't know offhand if there are other genetically engineered crops grown in New Mexico, but says the development of genetically engineered crops is directly dependent on whether the benefit the producers receives is adequate for the cost of using the seed.

"It is very much an economic issue, but they're also having to deal with public sentiment at the same time," he says. "Is either side right? I don't know. You can always raise a question mark, you can always throw up a flag." He pauses, then explains that while it may sometimes come with risk, technology has always helped farmers in the past:

"I guess I grew up on a farm, so I'm probably not as afraid of some things as some other people are."

For others, however, the risks associated with genetic engineering are not worth the potential benefits.

"I'm an activist," Allen Richardson says, "but I'm also representing myself as a consumer who would never in a million years eat genetically engineered chile."

Richardson worked on the White Earth Land Recovery Project's wild rice campaign, under the leadership of Native American activist and author Winona LaDuke. He explains that when the Ojibwa, who consider wild rice to be their cultural property and a gift from God, learned that researchers at the University of Minnesota planned to genetically engineer wild rice, they opposed the project. As an advocate and lobbyist, Richardson worked successfully toward passage of a state bill that prevents wild rice from being genetically engineered.

At about the time Richardson began working on the campaign—which had previously garnered little attention from state lawmakers—a case of contamination in the white rice crop came to light.

The case was written about in the journal *Nature* in January 2007. According to that story, the director of the Louisiana State University AgCenter's Rice Research Station, Steve Linscombe, grew a few lines of transgenic rice in field trials between 2001 and 2003.

"He also knows that one of those lines, LLRICE601, was grown on less than one acre," the story continues. "What he is not clear on is how the line then wended its way into the food supply. That little mystery is now the subject of an official investigation and a class-action lawsuit."

At the time the escape was announced, in August 2006, the USDA had not approved the rice for human consumption; but on Nov. 24, the agency deregulated the crop and allowed it to be grown without a permit. Japan declared a ban on imports of all US-grown long-grain rice and the European Union began requiring US imports be tested and certified. According to the Nature story, the creator of the strain—Bayer CropScience—blamed the farmers and an “act of God” for the contamination of the rice.

“The way it now stands, people have to admit open-air experiments are not containable,” Richardson, who is currently working for Sustain Taos, says. “Genetic engineers cannot even contain the experiments—so if something gets commercialized, it’s also going to get everywhere.”

Richardson hopes New Mexico’s chile farmers will put themselves in the shoes of rice farmers whose crops were contaminated; they were unable to sell their products and suffered millions of dollars in losses, he says. “The company that was responsible calls it an act of God,” he says, “and by denying any responsibility, the financial burden for that accident is put onto farmers.”

He criticizes the USDA’s role in the white rice issue, as well: “When something like this happens, the USDA generally waves their magic wand and makes [the new crop] legal. When the gene escapes from an experimental test plot and a law is broken, the USDA will deregulate it almost instantly and say it is safe,” he says. “That means there really are no repercussions for someone who is going to operate a leaky experimental test plot—it’s sort of a license to contaminate.”

Miguel Santistevan is still disappointed the state Legislature allocated funding for the genetic engineering of chile only a year after passing a memorial in support of protecting traditional crops.

“It just goes to show how the state governmental process works and doesn’t work,” he says—but it also demonstrates that traditional farmers and citizens need to become more involved in the process, working together and also educating policy makers.

Having grown up in Taos, Santistevan is currently a PhD student in sustainability studies in the biology department at the University of New Mexico. Thinking about the role of chile in New Mexico, he looks to the past—how people brought chile from Central Mexico and up the Rio Grande to northern New Mexico, how the chile was adapted to this climate and how communities have come to associate themselves with the different varieties. But when it comes to genetic engineering and agricultural systems, he also looks to the future.

“If we’re really going to address the challenges of climate change, I am absolutely convinced and firm on the fact that we need open-pollinated varieties of crops that have the capability to adapt,” he says, pointing to changes already occurring within the region’s climate. “We’re also going to have to get more intimately involved with our agricultural systems,” he says. “We’re going to have to revamp our whole economy, our whole way of looking at what our role is in nature, what are relationship is to food and the food system at large, if we’re truly going to survive.”

The current system of agriculture in the US relies heavily on fossil fuels, not only for the use of machinery, storage and transportation of food, but also for vast applications of herbicides, pesticides and fungicides.

“If we’re really going to take this civilization another 100 years, then we’re really going to have to get busy on those issues because industry isn’t going to do it and technology can’t do it. The technology uses too much water, too much fuel, too many natural resources and too many chemicals,” he says. “It can’t be sustained—whether it’s conventional agricultural or genetic engineering, it can’t be sustained.”

Instead, Santistevan believes policy makers should help farmers move away from unsustainable industrial practices and focus on local markets. “The time is ripe for that because there is more of a demand than a supply of organic food, local food, fresh food, fair food,” he says. “So any farmer who can figure out how to make that transition is going to make more money in the long run. We need to work with policy makers to create a policy that is going to support these farmers in this transition, so they don’t lose a penny of profit.”

In his own research, Santistevan hopes to help farmers understand the importance of biological diversity and also support them during times of transition. One idea Santistevan and his colleagues are working on would involve helping farmers partner with one another. He cites an example: Three farmers, one growing chile, another onions and a third honeydew

melon could each year decide to switch lands, switch strategies, trade equipment and move their crops around. That way, farmers could stay a step ahead of the diseases and pests that flourish when one crop is grown repeatedly on the same plot of land.

Genetic engineering isn't the answer, he says, any more than the repeated applications of pesticides, herbicides and fungicides have been. "You're not going to undo 3 billion years of evolution and think you're going to create something that is going to fool a virus?" he says. "Viruses are always going to be one step ahead of us, if not 100 steps ahead of us."

But most of all, he says, the issue comes down to a few basic questions: What is our relationship to this earth, as individuals, as communities and as society at large? And what, he asks, is our relationship to food? "Are we going to turn that all over to mechanization, industry, factories and technology, or are we going to take this opportunity to heal the earth through sane agriculture?" In northern New Mexico, he says, there is a saying at planting time.

"When we plant, we plant tree seeds: Para yo, para vos y para los animalitos de Dios," he says. "For me, for all of us and for all the animals of God. And that is the perspective we need to take: How are we going to create an agriculture that is going to take care of me, take care of all of us and all of the animals of God?" **SFR**