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## Courts Force U.S. Reckoning With Dominance of GM Crops

By PAUL VOOLEN of  
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These days, there is no rarer commodity in farming than trust.

Take Oregon's Willamette Valley, which for generations has been the germ of the U.S. sugar beet industry, producing nearly all the country's seeds. Such breeding is complicated

when neighbors grow genetically similar crops and stiff Pacific winds, baffled by the Coast Range mountains, shove pollen every which way.

But Willamette's growers have cooperated, establishing a system in which seed producers flag their plots on a collective map, giving fair warning of what is grown where. Voluntary distances between crops were established and, if abutting farms had a conflict in what they grew, well, they could usually figure it out.

"It's a very complex system based on social relationships," said Frank Morton, a Willamette organic seed farmer. "We can all operate in the same area without screwing up each other's work."

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That changed, Morton said, when the genetically modified (GM) beets arrived.

Planting of the GM beets was well under way by the time the main growers went public at a farmers' meeting in December 2006. In the tightly consolidated industry, adoption was quick: 95 percent of the U.S. sugar beet crop is now engineered to resist herbicide.

Morton was flummoxed. The growers refused to flag their GM beets on the collective map, saying they feared ecoterrorism and burned crops. That left Morton concerned that their beets would cross-pollinate with his organic Swiss chard and table beets.

Any trace of GM cells in his seeds could see them rejected by Japanese and European customers, which have near-impossible standards for GM-free products. And whom would he blame if such contamination, as he terms it, occurred? Who would know which way the wind blew that day? Morton was finding few answers.

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"I did not have the sense that any authorities were protecting my interests," he said.

So Morton followed the best of American traditions: He sued.

### Voices in a thicket

The United States is well into its mass experiment with GM crops. Some 90 percent of soy and cotton crops include genes engineered by firms like Monsanto Co., Dow Chemical Co. and DuPont to resist weedkillers and act as pesticides. Eighty-five percent of the corn crop is also genetically modified, and, in the form of high-fructose corn syrup, is found throughout the food system.

With GM genes so widely spread, some agriculture giants have had to move their conventional seed production out of the United States to meet strict foreign standards banning GM material. There could soon come a day, activists warn, that thanks to the drift of pollen, no ear of corn will be free of at least a trace of cells concocted by man.

These crops are safe to eat. The science on that is unequivocal, even in Europe, where a moratorium on new GM crops has existed for a decade. And by most accounts, GM crops have been an economic benefit to farmers, simplifying field maintenance and reducing the number of hands needed for weeding.

But as these crops have come to dominate the agricultural landscape, farmers who eschew their growing -- for ethical, organic or trade reasons -- have found themselves at a loss, frustrated by regulators and the majority of fellow farmers who have accepted GM crops as the new normal.

For a long time, these farmers have been lonely voices calling out through the thicket. But several recent rulings by federal courts have joined their chorus, criticizing regulators who have paid little attention to the potential economic impact of GM crops on organic and other farmers -- an awareness that is just now beginning to change in the new Obama administration.

For the past two decades, the government has argued "essentially that there's no difference between a GM crop and its nonmodified sibling," said Alison Peck, a law professor at West Virginia University.

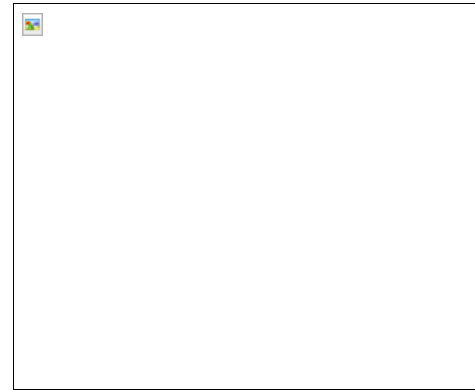
"Their arguments all sort of flowed from this presumption -- that these two kinds of crops are fungible," Peck said.

Two recent decisions out of the Northern District of California are the first-time acknowledgement by any federal entity of a difference between GM and non-GM crops, Peck said. The latest ruling, on the GM sugar beets of Willamette Valley, came down late last month and will move into the remedy phase at the end of this month.

Both rulings -- the first, upheld several times on appeal, came down in 2007 -- found the regulatory apparatus used by the Department of Agriculture severely lacking. USDA, along with the Food and Drug Administration and U.S. EPA, oversees GM crops, using jury-rigged laws written well before the invention of biotechnology. Unlike Japan, Europe or even Russia, the United States has never passed legislation on GM crops.

As the beet ruling, written by Judge Jeffrey White, said, USDA gave only a "cursory" thought to "the effects of gene transmission on conventional farmers." It did not examine whether voluntary buffer zones for pollen would stop GM beets from spreading their genes. All of these factors, including the possibility that conventional beets could be eliminated by GM competitors, have "a significant effect on the human environment," he wrote.

The direct result of the lawsuits will be the first environmental impact statement ever published for a GM crop, expected by year's end. Previous orders for such evaluations, which take into account broad economic and social impacts, have faltered for crops like



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GM wheat, which Monsanto ceased developing in the face of farmers afraid of losing their export markets.

But the indirect implications of the rulings are far broader and could help bring a shift in a *laissez faire* system that has placed the burden on organic and GM-free farmers to isolate their crops, said Andrew Kimbrell, executive director of the Center for Food Safety, a longtime gadfly to the seed companies and the lead plaintiff on the sugar beet suit.

"Every farmer should have the right to grow non-GMO [genetically modified organism] crops and not fear contamination," Kimbrell said. "Farmers shouldn't be out there in constant fear that they're going to be contaminated."

A drastic rethinking of the country's GM policies has been needed for some time, Agriculture Secretary Tom Vilsack said during a discussion of his agency's plan to update its regulations this spring. These crops need to find a better way to coexist, he said.

"You know, I think [GM regulations are] an evolving process, which is why we're doing this and probably should have done it more than 20 years ago," Vilsack said. "We waited 20 years to do it."

"I want coexistence," he continued. "You all have to figure out how to help us get there, because that's the world, that's the real world we live in. Those choices need to be protected on both sides, because people are going to continue to make those choices, and it's not today an either-or situation."

#### **An either-or situation**

At times, it is difficult to see how environmental groups and the chemical corporations that make GM seeds could ever find common ground, let alone coexist.

The GM debate, like many unresolved disputes that have stretched over decades, has hardened down to even basic vocabulary. To the seed giants and scientists, GM crops are "transgenic" and gene flow can cause an "adventitious presence" of genes. Meanwhile, environmental groups lament the "contamination" and "biological pollution" of organic crops.

On each side of the Atlantic Ocean, either group has made it a question of freedom. In the United States, where GM products hold sway, environmentalists call for allowing farmers and consumers the choice to buy GM-free crops. Meanwhile, in the European Union, which tightly restricts and prominently labels GM products, seed firms make similar pleas.

"What is frustrating is that this debate, especially in the European context, some interest groups have used many different arguments to blur what is the real discussion," said Mike Hall, spokesman for DuPont's Pioneer Hi-Bred. European consumers have been subject to scare tactics, he said.

"We need a clear and sensible discussion about scientific risk," he said.

Amid such disputes, it is easiest to begin with the science.

Nearly all the GM crops on the market today are designed to either increase the pesticide present in the plant or resist the application of weedkillers like Roundup. By present standards, these are simple modifications: To create "Roundup Ready" sugar beets, Monsanto inserted a single gene into the beet's DNA from a common soil bacteria.

More complex crops developed by biotech firms have stacked together pesticide and several types of herbicide resistance. But the companies' longstanding promises of crops that will resist drought or improve nitrogen fixation have produced few tangible results, Kimbrell said.

"Where are the supercrops?" he said. "Coming soon. I've heard that for 20 years."

Monsanto's bottom line has primarily benefited from spreading Roundup resistance to new plants and markets. But the firm has recently developed what it says are drought-resistant corn strains, said spokesman Garrett Kasper. And, though it is not commercially available, scientists have designed "golden rice" that contains a high level of beta carotene, meant to address Vitamin A deficiencies.

There has been little public resistance to or awareness of biotech crops in the United States. Partially, this is due to the federal organic standard. While the standard requires farmers to use conventional seeds, it is process-oriented and requires no testing for GM material in certified organic products.

This is poorly understood outside the agriculture community, said Morton, the Willamette organic-seed farmer.

"If organic corn seed crops were tested, they would find GMOs all over the place," Morton said. "We know this. We know this for sure. It's a dirty secret."

Recently, some voluntary programs, like the Non-GMO Project, have arisen, supported by premium retailers like Whole Foods Market Inc. Companies verified by the project meet thresholds for GM presence in their products. Such thresholds are strict -- 0.1 percent for seeds, for example -- but are still more lenient than European standards.

Meeting such thresholds is difficult for growers because it is the nature of genes to flow. Cross-pollination between plants is a driver of evolution, and pollen can move large distances, aided by wind or buzzing bees. The buffer, or isolation, distance needed between crops is poorly understood and variable: Beets tend not to stray far, while a grain like canola travels widely, said Gerhard Rühl, a German crop scientist.

And then there is the wind, Rühl added.

"You can't predict that and can't write it into good farming practice," he said.

### **Fencing out pollen**

In the United States, GM crops entered farming in the mid-1990s after a government task force said that if the crops were determined safe for human consumption, then they were safe to introduce into the environment. Larger economic and environmental impacts, like the loss of biological diversity, were simply brushed aside, West Virginia University's Peck said.

Slowly, USDA came to view biotech and nonbiotech crops as identical, going in the "direction of not examining closely the characteristics of a product" in their deregulation decisions, she said.

There have been regional attempts to establish frameworks. Several years ago, the Vermont Legislature passed a bill that would have made seed firms potentially liable for GM contamination. The bill was vetoed by Gov. Jim Douglas (R). A similar bill in California was reduced in ambition and focused only on protecting non-GM farmers from patent lawsuits.

For organic farmers, economic liability is the most pressing concern. Here, it is useful to think about cattle ranching. In the eastern part of the United States, traditionally, farmers have been obliged to fence in cattle. In the West, meanwhile, landowners are required to fence out roaming herds.

The same distinctions apply to crops. Europe has been busy erecting a complex regulatory apparatus requiring farmers to "fence in" their GM crops with isolation distances and liability funds. With no regulations, the United States has in effect required

non-GM farmers to "fence out" GM crops, placing the economic burden on conventional farming.

For Morton, that means testing every batch of seed he produces for GM presence.

"Basically, I'm being taxed on what I don't know, to put it in farmer's speak," Morton said. "I'm being taxed \$300 per seed lot."

In his dreams, Kimbrell wants the United States to adapt a system similar to those being developed in Europe: required labeling of GM products, liability moved off organic farmers onto seed corporations and scientific evidence that gene flow can be minimized.

"Without these you don't have coexistence, you have invasion," Kimbrell said. "You have genetically engineered crops invading other crops, destroying the livelihoods of organic and other conventional farmers."

Much now depends on what USDA finds in its first environmental impact statement, which will be on GM alfalfa, the crop implicated in the California court's 2007 decision. While it will not directly change coexistence policies, it will be the first federal look at economic impacts. Expect more lawsuits, Kimbrell said.

"It's just really an open question," Peck added. "Everyone is really a bit uncomfortable with it."

### **Troubled harvest**

Right now, times are tense in the Willamette Valley.

Morton has had little local support in his lawsuit, he said.

"Everyone is afraid if they made a big stink about this and then the biotech industry won, anyone who was on the wrong side of that fight" would be shut out, he said. "The actual farmers who run the land, they would not speak up."

The Center for Food Safety is seeking an injunction on any new planting of GM beets. That would be a blow to beet companies, which have saved money by aerially saturating their crops with Monsanto's Roundup, a strategy unavailable before, said Luther Markwart, executive vice president of the American Sugarbeet Growers Association.

"Weeds are one of the biggest problems for sugar beets, Markwart said. "Typically, they have to use four or five different types of chemicals for conventional sugar beets."

This year's harvest has just begun for American Crystal Sugar Co., the largest sugar beet processor in the United States. Over the next few weeks, the firm's crop of mostly GM beets will be harvested and put into winter storage. Come next year, the sucrose-pregnant roots will be processed into sugar that is chemically identical to any other kind of sugar.

American Crystal Sugar receives its seeds from the Willamette Valley and, if the court places a temporary ban on GM beets, supplies could run short, according to CEO David Berg.

"There are still limited quantities" of the conventional seed, Berg said. "But we don't know if there's enough to plant a full crop."

Morton said he has little sympathy for the large GM seed growers.

"Industry should have known that they were in a dangerous situation in terms of their seed supply," he said. "They should have made allowances that they were going to be prohibited."

They are not the only ones taking risks, Morton said. He fully expects his seeds will be contaminated at some point. That could prompt another suit, he said.

"I'm willing to take that risk at this point," Morton said. "I'm not going to stop growing my crops out of fear."

There has to be a way for growers to work together, said Steve Ferschweiler, the secretary of Willamette's specialty seed association and a cabbage grower.

"We kind of feel there's room for both of us to produce what we want to," Ferschweiler said. "We know we have to be farther away from the GM products. ... Our customers say we can't have any GM traits in our seed that we sell them."

It is lamentable how secretly the beets were first introduced, he added.

"I think it is best to have it out there in the open and working toward solutions, instead of [the beets] just showing up," Ferschweiler said.

More than anything else, the valley is cabbage territory. So far, companies have not developed GM cabbage, Ferschweiler said. But it will probably happen, and what then? Will the same scenario play out?

"Down the road, some companies might be breeding GM cabbage," Ferschweiler said.

"We need to have that figured out before that comes around."

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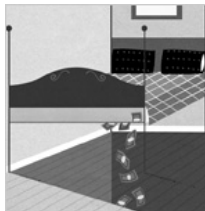


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