

Tacogate: There Is Barely A Kernel of Truth

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It's been amazing to watch the chain of events unfolding since StarLink, a genetically modified variety of corn used in animal feed but not yet approved for human consumption, was found in American-made taco shells. Domestically, thousands of the shells have been stripped from store shelves in a recall that was widened last week to include more than 1.4 million pounds of corn flour and other baking ingredients. Overseas, the Japanese government has reported with alarm that the corn has been found in imported American products.

With all the hue and cry, you'd think a dangerous, if not deadly, ingredient had been introduced into the U.S. and international food supply. But what's the startling discovery the alarm-raisers have made? Hold onto your seats, folks: Our corn, it seems, has been contaminated by--corn!

For all its ominous overtones, the StarLink incident has very little to do with science and safety. Instead, it's the latest skirmish in an ongoing conflict between environmental groups and the biotechnology industry. Mediated by the U.S. Environmental Protection Agency, which has questionable credentials for regulating food safety, it has frightened consumers, placed undue burdens on farmers and caused a needless, and ultimately irresponsible, uproar.

StarLink, developed by the French-based drug company Aventis, is really no different from other corn, except for the addition of a gene that produces an insect-fighting protein. Corn had already been dramatically modified from the "natural" plant originally found in the wild. Those ancient ears of corn were the size of your little finger and looked more like grass than modern yellow corn. Over the ages, crossbreeding and, more recently, forced mutation, has produced the ear of corn we eat today. StarLink, with its one gene added to the approximately 60,000 in this modern ear, represents a very modest, precise change by comparison.

StarLink has not been approved for human consumption because of concern that its new protein may cause human allergies. Food allergy specialists have questioned this, pointing out that it's virtually impossible for anyone to have an existing allergy to a protein that would be completely new to the human diet, and that the corn, planted on only 1 percent of U.S. corn acreage, would be present in food products at extremely low levels. Steve Taylor, head of the University of Nebraska's department of food science and technology and a leading expert on food allergens, believes "there is virtually no risk associated with the ingestion of StarLink corn in this situation."

But fear of allergenicity is the reason the EPA has limited StarLink to use as animal feed. It has become the crux of the battle over StarLink, and the justification for the scare campaign that led to the recent product recalls. Yet it's unclear why the EPA, rather than the Food and Drug Administration, is calling the shots on StarLink's allergy-causing potential.

The original discovery of StarLink corn in taco shells produced by Kraft Foods was no accident. It was the result of a fishing expedition by a coalition of environmental groups, led by Greenpeace and Friends of the Earth, that aim to discredit the regulatory system and damage

consumer confidence in the biotech industry. These groups, which oppose most modern agricultural methods, hired a testing company to analyze more than two dozen processed foods specifically for traces of StarLink. The taco shells were the only place where they found what they were looking for.

These protest groups have been waging an aggressive fear campaign against multinational biotechnology companies for years--first in Europe, now in North America. Their main strategy for preventing biotechnology from reaching the market is to attack the food industry. They call for consumer boycotts of food companies and supermarkets. But these rarely materialize because, as research shows, most Americans support new developments in science and technology.

I've studied the social impact of biotechnology for more than a decade. My own research and that of others has documented that between two-thirds and three-quarters of U.S. consumers support agricultural biotechnology and welcome its benefits, especially the reduced use of pesticides. This support was still evident in a survey I conducted right after the StarLink news broke. In it, 67 percent of consumers said they would continue to consume biotech products that had been engineered to resist insects, and only 3 percent said biotechnology was their most serious concern about food safety.

It's fair to say that Aventis should not have proceeded to market its corn without being sure it could be kept separate from approved varieties. This is, in fact, extremely difficult to guarantee. Our modern farm and food system is designed to be efficient and to keep food costs low, not to keep individual varieties of crops strictly segregated. A couple of years ago, in fact, Aventis was reportedly warned not to make a biotech soybean commercially available because farmers knew it would be impossible to keep it out of the export market, for which it had not been approved.

But the company clearly wanted to establish a presence in the fiercely competitive market for agricultural biotechnology. Other companies have already received full approvals for biotech seeds, including corn not very different from StarLink, that are being widely used by North American farmers.

Perhaps the most troublesome and confusing aspect of the controversy is the government role. Like many others involved in biotechnology, I was concerned to learn that it was the EPA, not the FDA, that granted StarLink partial approval while expressing doubts about its allergenic potential. The agency best equipped to deal with food allergens is clearly the FDA, which has a long track record in the area. Yet the EPA asserted regulatory control under the Food Quality Protection Act of 1996, which expanded EPA's authority over pesticides. Because StarLink resists insects, the agency claimed jurisdiction with an interesting interpretation--treating a plant not as a plant, but as a pesticide.

The EPA may hope to be a big player in the biotech arena, but most experts agree it should not be regulating food safety. The EPA has plenty to do regulating the ecological impact of bioengineered plants, which is the greatest biotechnology-related concern of most scientists. It should concentrate its efforts on that and resist power grabs of the StarLink variety. Appropriately, the agency has recently come under increasing criticism from the food, agriculture and scientific communities for its handling of the StarLink episode and for introducing interagency politics into the issue.

Biotechnology represents a powerful set of tools that will have a significant impact on society over the next century. New biotechnology products provide important benefits, including reduced use of chemical pesticides and enhanced vitamin and iron content that will help prevent childhood blindness and other problems in developing countries.

Because it is so powerful, however, society should be able to control this new technology. Biotech crops do undergo extensive safety and nutrition testing, and biotechnology has been shown to be as safe or safer than traditional breeding practices, which have been used for decades without any formal testing or regulation. In an interview last January, FDA Commissioner Jane Henney said her agency has seen "no evidence that the bioengineered foods now on the market pose any human health concerns or are in any way less safe than crops produced through traditional breeding."

The main lesson of StarLink is that no new agricultural product should be made commercially available until it has received approval for human consumption. All parties now agree to this, so there's hope we won't see this kind of problem again. But while companies are expected to be responsible, the activist groups that oppose them and the government agencies that regulate them also need to act responsibly. It's not reasonable to demand "zero risk" from any technology, nor to hold biotechnology to unreasonably high standards.

We must also be careful not to impose higher costs on all consumers. Opponents who call for mandatory labeling of all foods with biotech ingredients do so mainly as a means of launching a further attack on the industry. The FDA already requires nutritional and health labeling, and research has shown that a simple statement that a food "contains genetically modified ingredients" would serve chiefly to confuse and alarm consumers.

The casualties in the war between the biotechnology industry and its opponents are farmers, food companies and consumers. Most of us have enough daily concerns without being frightened into thinking the food we're eating is dangerous. Food companies and farmers face serious threats from low profit margins, industry consolidation and global competition. With all this to worry about, a scare like StarLink is the last thing that any of us needs.

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