

HEADING

The real curse of Frankenfood

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Antibiotechnology Jeremiahs have long predicted that the industry would create something it couldn't control. Now it seems they were right. After insisting for years that their own recombinant DNA-manipulated crop and garden plants merited extraordinary government regulation, agricultural biotechnology companies are now having trouble persuading consumers that foods from these plants are safe and not fundamentally different from other foods.

In the early 1980s, a few major agrochemical/biotechnology companies led by the Monsanto (St. Louis, MO) approached senior policymakers in the Reagan administration and requested more restrictive regulation, primarily from the US Environmental Protection Agency (EPA; Washington, DC), than could be justified on scientific grounds. Their motive, according to lobbyists and others who worked on Monsanto's behalf at the time, was to use regulation as a market entry barrier to competitors—in particular, seed companies and biotechnology startups—that were less able to bear the high costs of additional regulation.

They achieved their short-term goal. The US Department of Agriculture (Washington, DC), the US Food and Drug Administration (Rockville, MD), and (especially) the EPA promulgated policies that focused specifically on and discriminated against crop and garden plants and microorganisms crafted with recombinant DNA techniques. Seed and entrepreneurial biotechnology companies for the most part failed to compete successfully on this tilted playing field, and subsequently many were bought at a fraction of their true value by Monsanto, Novartis (Basel, Switzerland), and DuPont (Wilmington, DE).

This approach has put federal bureaucrats in the middle of virtually all field trials of recombinant plants during the past 15 years and has been a disaster for both small businesses and academic institutions, whose scientists lack the resources to comply with burdensome, unnecessary regulation. The cost of field testing recombinant plants skyrocketed to twenty-fold higher than for virtually identical plants crafted with older, less precise genetic techniques. Added production costs were a particular disadvantage to

products in this competitive, low profit-margin market.

Few of the agbiotechnology companies launched in the 1980s exist today (in contrast to biopharmaceutical companies, whose numbers have increased steadily for a quarter century). But deep-pocket players like Monsanto and CibaSeeds (now Novartis) are now paying the price for their successful anti-competitive strategy: The overregulation they engineered fed the antibiotechnology myth that has poisoned the views of consumers, particularly in Europe and Japan.

The companies encouraged government policies based on the myth that there is something fundamentally different, unfamiliar, and worrisome about the new technology. They aggressively disputed the consensus in the international scientific community that the new biotechnology is no more than an extension, or refinement, of earlier genetic techniques, and that the associated risks are basically the same as for other products.

The myth that underpins their monopolistic strategies is now "picking" the corporate deep pockets. For example, Monsanto, which is shipping herbicide-resistant soybeans to Europe mixed with ordinary beans (because there is, after all, no fundamental difference between them), has encountered a consumer backlash there. New regulatory barriers are springing up like weeds. The UK has announced a moratorium on commercial field introductions of recombinant plants, and the EU has promulgated unsatisfactory and contradictory policies on the labeling of biotechnology foods. The Japanese government has conducted a plebiscite in which the public got to choose between two unscientific, discriminatory schemes for labeling biotechnology foods.

But cracks are beginning to appear in industry's solidarity. A Monsanto public relations blitz in Europe and the company's quite justified unwillingness to voluntarily sequester and label recombinant soybeans have lately become targets for criticism by other major agbiotechnology firms. Because of Monsanto's actions, "We have a PR mountain to climb," complained Willy de Greef, head of regulatory and government affairs at Novartis Seeds.

Still, the industry as a whole shares the blame. Its Washington, DC-based trade association, the Biotechnology Industry Organization (BIO), has lobbied tirelessly for overregulation in the US and internationally

by the United Nations (New York), for more than a decade, and has advocated unscientific and even bizarre regulatory proposals, including one from the EPA (which will likely be finalized in early 1999) to begin regulating garden and crop plants as pesticides!

Under this scheme, case-by-case regulatory review will be required for even small-scale field trials of familiar, innocuous, commercially important, recombinant plants genetically improved to enhance their pest or disease resistance. These will have to be labeled "pesticide."

This policy has been excoriated repeatedly by the scientific community. In 1996, 11 major scientific societies representing more than 80,000 biologists and food professionals published a report which dissected the EPA's proposal¹. However, BIO has continued to defend the EPA proposal.

It is noteworthy that the most recent salvo from the scientific community, an October 1998 issue paper from the Council for Agricultural Science and Technology², echoes this earlier assessment and specifically addresses misstatements by BIO. The council's report concludes that the EPA policy "would undermine public confidence in the food supply," "discourage development of pest resistant minor crops or crops resistant to minor pests," prolong the use of chemical pesticides, and "increase the regulatory burden on all companies."

Agricultural biotechnology holds tremendous potential benefits for the world's consumers and farmers. Products will continue to emerge in the marketplace, but at a disturbingly slow rate because of regulatory barriers. Under current circumstances, R&D will focus primarily on commodity crops grown at huge scale, at the expense of opportunities to improve important small-acreage crops. Innovation will seldom target improvement of the genetics of environmentally threatened but low-value-added species such as trees, or of subsistence crops such as millet, cassava and yams.

The market for agbiotechnology products is being undermined and distorted by overregulation and by public antagonism. Ironically, both are the industry's own creation.

1. A report from 11 professional scientific societies: appropriate oversight for plants with inherited traits for resistance to pests, July 1996. Coordinating Society: Institute of Food Technologists, Chicago.
2. The proposed EPA plant pesticide rule, Issue Paper #10, October 1998, Council for Agricultural Science and Technology, Ames, IA.

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