

BIOTECHNOLOGY IN THE YEAR 2000 AND BEYOND: PUBLIC INFORMATION

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I am Marion Nestle, Professor and Chair of the Department of Nutrition and Food Studies at New York University. I appreciate the opportunity to participate in this panel today. Unlike the other members of this panel, I represent no organized group. I assume that I was invited to speak because my academic credentials are in molecular biology and public health; I was a consumer representative to the FDA Food Advisory Committee when it dealt with the Calgene tomato and Monsanto's Bovine Somatotropin; I am currently a consumer representative to the FDA Science Advisory Board; and I occasionally write about issues related to food biotechnology.¹

I have been asked specifically to address public perceptions of genetically-engineered foods. As it turns out, this is very easy to do. Consumer acceptance of these foods is critical to the success of the industry, and many groups have sponsored surveys on this topic over a period of 15 years. Although the surveys differ in methods, their results all say the same thing, are remarkably consistent, and have considerable predictive value.

My files contain surveys done by the Office of Technology Assessment in 1986,² USDA in 1992,^{3,4} Rutgers University in 1993,⁵ the Grocery Manufacturers of America in 1994, the Food Marketing Institute in 1995,⁶ the International Food Information Council in 1997,⁷ dietetic researchers in 1998,⁸ and the International Food Information Council again in 1999.⁹ I also have a few from Europe.

Because the results are virtually indistinguishable, I will discuss them as a group. Together, they reveal that consumers have:

- **Substantial interest in biotechnology.**
- **Limited understanding of science and technology.** For example, 71% of respondents said they were poorly informed about biotechnology.⁹
- **Concerns about unknown risks of bioengineered foods.**
- **Expectations that food biotechnology will benefit them and society.**
- **Expectations that benefits will outweigh risks.** For example, 75% answered “yes” to the question: “do you feel that biotechnology will provide benefits for you or your family within the next five years?”
- **Preferences for some genetically-engineered foods above others:** for example, those that are useful and beneficial to health or society, safe for people and the environment, and meet ethical values. Consumers say they would be likely to buy bioengineered foods that protect against insect damage or require less use of pesticides (77%),⁹ those that do not involve or harm animals, and those that do not involve the transfer of animal genes into plants.⁶ In the 1997 survey, for example, only 14% of respondents agreed that cloning animals for food was acceptable.⁷
- **Distrust of the food biotechnology industry to act in the public interest.** For example, less than 11% of respondents report trust in information supplied by food biotechnology companies.⁶
- **Distrust of government oversight of food biotechnology,** along with strong beliefs in the need for regulation, and finally,
- **Almost total agreement that bioengineered foods should be labeled as such.** These views are especially pronounced in Europe where just about everyone--96% in Great Britain--wants labels on bioengineered foods.¹⁰

Please note that safety—though clearly important—is not the central focus of consumer concerns about food biotechnology. Consumers have had to take on safety as a basis for discussion because it is the *only* issue that FDA and the industry will listen to. Instead, much more fundamental social, cultural, and religious value systems underlie public

concern about food biotechnology.¹¹ Therefore, when FDA and the industry insist that scientific proof of safety is the only issue, and refer to people who have these other concerns as anti-scientific, Luddite, irrational, or—my favorite—troglodyte,¹² I think you miss the point.

The most strikingly useful conclusion to be drawn from consumer surveys is that acceptance is product-dependent. People are more willing to accept products that are useful, safe, and ethical. Recombinant insulin and chymosin are two excellent examples. They are better, cheaper, more effective, and less harmful to animals than the products they replaced,⁵ and there is nothing inconsistent about their ready acceptance.

Indeed, the survey messages are so clear and consistent that I cannot help be amazed by the industry's response. If the report in last week's *New York Times* is correct, the industry is organizing a "huge lobbying and marketing campaign" to respond to the "rising wave of anti-biotech hysteria."¹³ Once again, the industry is treating consumer perceptions as a *public relations* problem, one that can be fixed by an advertising campaign. This did not work in England, and it won't work here.

If the food biotechnology industry wants to sell bioengineered foods to consumers, and FDA wants to help them do that, the survey results lead to three suggestions:

1. ***Make products that really are useful, beneficial, safe, and ethical.*** To date, the industry has produced expensive and not very good tomatoes, cow growth hormones, and a variety of crops heavily dependent on herbicides or containing toxins of questionable environmental impact. None of these meets consumer criteria for acceptability. Until the industry starts making foods that do, it is unreasonable to expect people to want them.
2. ***To be considered credible, be credible: bring rhetoric in line with reality.*** The industry's increasingly tiresome mantra is that biotechnology is the only way we will be able to meet global food needs in the 21st century. If the industry wants consumers to accept its products on that basis, it should be doing a lot more work on global food problems. To date, most research focuses on "temperate zone" agriculture that benefits the industry more than society.¹⁴ At the very least, the industry could initiate a tithing program and

start putting at least 10% of income into research on problems that truly would benefit humanity.

3. *To be considered trustworthy, be trustworthy: label the products.* I understand that FDA considers labeling the “L-word,” as well it might considering its long-standing resistance to even voluntary disclosure. Surely we wouldn’t be here today if it wasn’t obvious that labeling is a done deal. The only outstanding issue is how. Labeling will happen because of Congressional intervention, because the people have spoken, and not least because industry can no longer live without it. Events in Europe have proven that the industry’s opposition to labeling when the issue arose in 1994—and FDA’s narrow, science-based stance at the time—was an expensive mistake. It is time to correct this mistake.

In 1992, I said:

The labeling issue is really this simple: consumers are more likely to buy the food products of biotechnology if they think the foods are worth the price and if they trust the producer. Trust requires disclosure.¹

Seven years later, I am even more convinced that *more* regulation—not less—is better for industry as well as for consumers. If bioengineered foods are safe, beneficial, and ethical, making sure they are thoroughly tested and labeled before they come to market will only increase trust in the industry and its products. This conclusion has been evident from 15 years of surveys. It is time to pay attention to what they tell us.

Notes

- ¹ Nestle M. Food biotechnology: truth in advertising. *Bio/Technology* 1992;10:1056 (text of speech to Public Voice food biotechnology conference), Allergies to transgenic foods - questions of policy. *N Engl J Med* 1996;334: 726-728 (editorial on the Brazil nut-soybeans), Food biotechnology: labeling will benefit industry as well as consumers. *Nutr Today* 1998;33(1):6-12 (text of 1997 speech to Monsanto), Food biotechnology: politics and policy implications. In: Kiple KF, Ornelas-Kiple CK, eds, *The Cambridge World History of Food and Nutrition*, Cambridge University Press, Cambridge, U.K., 2000 in press, and *Agricultural biotechnology, policy, nutrition*. In: Murray TH, Mehlman MJ, eds, *Encyclopedia of Ethical, Legal, & Policy Issues in Biotechnology*. NY: John Wiley & Sons, 2000, in press.
- ² Office of Technology Assessment. New developments in biotechnology--background paper: public perceptions of biotechnology (OTA-BP-BA-45). Washington, DC: US Congress, 1987.
- ³ Hoban TJ, Kendall PA. Consumer attitudes about food biotechnology: Project summary. Raleigh, NC, 1993.
- ⁴ Zimmerman L, Kendall P, Stone M, Hoban T. Consumer knowledge and concern about biotechnology and food safety. *Food Technology* 1994;48:71-77.
- ⁵ Hallman WK, Metcalfe J. Public perceptions of agricultural biotechnology: a survey of New Jersey residents. Ecosystem Policy Research Center, Rutgers University and New Jersey Agricultural Experiment Station, Cook College. New Brunswick, NJ, 1993.
- ⁶ Hoban TJ. Trends in consumer acceptance and awareness of biotechnology. *Journal of Food Distribution Research* 1996;27:1-10.
- ⁷ International Food Information Council. U.S. consumer attitudes toward food biotechnology (Wirthlin Group Quorum Survey, March 21-24, 1997). Washington, DC, 1997.
- ⁸ Wie SH, Strohbehn CH, Hsu CHC. Iowa dietitians' attitudes toward and knowledge of genetically engineered and irradiated foods. *Journal of the American Dietetic Association* 1998;98:1331-1333.
- ⁹ International Food Information Council. U.S. consumer attitudes toward food biotechnology (Wirthlin Group Quorum Survey, February 5-8, 1999). Washington, DC, 1999.
- ¹⁰ Food fights. *The Economist*, June 13-19, 1998:113-114.
- ¹¹ Donnelley S, McCarthy CR, Singleton R, Jr. The brave new world of animal biotechnology: special supplement. *Hastings Center Report* 1994;24:s1-s31.
- ¹² Gaull GE, Goldberg RA, eds. *New technologies and the future of food and nutrition*. New York: John Wiley & Sons, Inc, 1991.
- ¹³ Barboza D. Biotech companies take on critics of gene-altered food. *New York Times*, Nov 12, 1999:A1,A26.
- ¹⁴ Sachs J. Helping the world's poorest. *The Economist* August 14, 1999:17-20.