

COMMUNICATING ABOUT AGROBIOTECHNOLOGY

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Agricultural biotechnology is a fundamental technology platform that is promising to transform the world food system and bring about an abundance of healthier foods and improve the environment. Yet consumers in some parts of the world have not been as welcoming of the technology as others. Indeed, in Europe and elsewhere consumer opposition grew to such levels as to affect European Union regulation and spark a worldwide debate about the food and environmental safety of genetically modified (GM) crops. And although the debate about GM crops and foods has become more muted in recent months, agrobiotechnology is still making it onto the front page. Many stakeholders—the scientists who developed the technology, US and European firms who championed it, its early adopters (farmers), regulators, politicians, and policy makers—were clearly caught off guard by the European reaction. At the height of the controversy in 1999, Bob Shapiro, then CEO of Monsanto, openly admitted as much (Borger, 1999).

Although hindsight is always 20-20, the question of why so many stakeholders misjudged consumer response is important. Could it have been predicted, and could measures have been taken to address the concerns of European consumers? Should regulators, scientists, and industry have recognized the significance of “signal events,” such as the “mad cow” crisis? Clearly, consumers and reporters were already making the connection. Were there specific (dreaded) aspects of GM technologies that might raise concerns for certain segments of consumers? And if so, were the regulatory systems in place adequate enough to address those concerns? How might consumer concerns be anticipated, openly discussed, and better addressed in the future?

These are important research and policy questions; and as Just (2001) argues, economists have a role to play in answering them and informing public policy. Yet economists, on the whole, also failed to anticipate the GM food crisis. Just argues this is because mainstream economic models do not incorporate the structural role of (consumer) perceptions (2001, p.1134). Of course, they should as changes in perceptions drive agent decisions. And they should also account for the drivers of consumer perceptions, such as media coverage.

This issue of *AgBioForum* discusses how consumers form perceptions about new technologies, such as agricultural biotechnology. Leading experts from media, industry, and academia provide insights from the growing field of risk analysis in order to shed light on the recent GM food debate.

Findings from the early risk perception studies and the papers gathered here suggest that:

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- How people perceive risks is both quantifiable and predictable (Palfreman; Marks & Kalaitzandonakes; Wilkins). This finding alone should prove useful in furthering related empirical studies;
- The framework elaborated by Slovic (1987) in which consumers evaluate potential risks of a new technology on the basis of two main factors—the degree to which it is “dreaded:” its consequences are catastrophic, uncontrollable, potentially fatal, not equitable in their distribution, pose high risk to future generations, are not easily reduced, and are involuntarily imposed; and the degree to which the risk is an “unknown risk:” it is not observable, not evident to those exposed, its effects are delayed, and its risks are not definitively known to science—is a useful and proven approach for conceptualizing perceptions (Wilkins). The framework has proved useful as a guide for practitioners and journalists (Palfreman), risk managers (Blaine & Powell), and as a means of evaluating risk messages (Marks & Kalaitzandonakes);
- People can accept risks (even if the technologies exhibit many of the dreaded and unknown factors listed above) if there are tangible benefits associated with them (Blaine & Powell; Fischhoff & Fischhoff; Krueger; Moon & Balasubramanian; Wilkins). And at this point biotechnology is not stigmatized enough that citizens (consumers) are deaf to the possibility of trading benefits vs. risks (Fischhoff & Fischhoff);
- Culture also helps to define (risk) perception (Krueger; Wilkins);
- Trust in risk managers (e.g., the European Food Safety Authority, the Food and Drug Administration, the Environmental Protection Agency, the National Institutes of Health, industry, scientists) is as important, if not more so, in garnering and maintaining consumer support. A lack of confidence on the part of consumers in the ability of industry, government, and science to manage the associated health, environmental, and social risks of agrobiotechnologies is likely to compound any negative risk perceptions that consumers may already hold, or risk (benefit) messages they receive. Indeed, the effectiveness of risk communication depends to a large extent on the degree to which the messenger is both independent and trusted. If one trusts the risk messenger (manager), communication is relatively easy. If trust is lacking, the process is much more difficult (Slovic, 1993; Blaine & Powell; Fischhoff & Fischhoff; Marks & Kalaitzandonakes; Moon & Balasubramanian).

In terms of the role of the media in the formation of perceptions, additional findings from the studies presented here suggest that:

- The media (newspapers, televisions, radio, internet) is often the main source of information for consumers (Blaine & Powell; Marks & Kalaitzandonakes);
- The media tends to have an agenda-setting function. Hence, its effect is likely to be subtle, indirect, and cumulative over time (Marks & Kalaitzandonakes). There is some evidence that this was the case for the debate that unfurled about agrobiotechnology;
- People tend to overestimate risks that have received a lot of media attention. For example, most people believe they are more likely to be struck by lightning than they are to be seriously injured in an auto accident. Getting struck by lightning is a news story, but most auto accidents result in no news coverage (Wilkins);

- The media can play a pivotal role in the public debate about agrobiotechnology by facilitating two-way communication among the various stakeholders affected by the technology (Wilkins). Communication strategies that involve one-way messages from risk managers to the general public are liable to fail (Blaine & Powell; Krueger; Palfreman; Wilkins);
- News accounts equalize perspectives (Wilkins) and have a role to play in informing consumers about the scientific nuances and complexities of new technologies and the scientific process itself (Hines; Logan; Marks & Kalaitzandonakes). Broad access to the web provides a potentially promising way to communicate with “multiple publics” (Fischhoff & Fischhoff) about the subtleties of scientific controversies (Hines);
- The news media faces a number of challenges in covering agrobiotechnology because of the complex issues that it raises. One possible way to overcome some of these challenges is to involve science, environmental, and investigative journalists more in reporting about food biotechnology (Logan).

Open, clear, and transparent communication with the public about the risks and the benefits of agrobiotechnology seems to be the best way to proceed (Fischhoff & Fischhoff; Hines; Krueger; Blaine & Powell; Wilkins). However, this does not equate to “educating an ignorant public” about agrobiotechnology. As Fischhoff and Fischhoff point out, that there are “multiple” publics with complex, evolving, and subtle opinions about different applications of biotechnology. And although consumers will often admit to their own ignorance, those very same consumers are often happy to remain uninformed as long as they trust in the food regulatory system. This is a perfectly rational strategy given that information gathering involves various costs. This position, of course, can change quite rapidly if trust breaks down.

Rather, what is needed is an acknowledgement of consumer concerns, and to provide consumers openly with the information that they want, in a comprehensible form, from trusted and independent sources. At that point it will be up to consumers to decide which products are acceptable or unacceptable as they vote with their wallets in the supermarket.

References

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