

Public Perceptions of Biotechnology: The United States Perspective

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After two decades of anticipation, the benefits of biotechnology are now becoming reality. The ultimate success of the biotechnology enterprise depends on how the public perceives and accepts the products. The American market has been calm as the foods containing ingredients developed through biotechnology have started arriving in stores. I have studied public perceptions of agricultural biotechnology for almost a decade so can provide a unique perspective on why the American climate has remained so positive.

Regardless of how we measure consumer perceptions, these surveys document that between two-thirds and three-quarters of American respondents have remained consistently positive about biotechnology. A new national survey just completed by the International Food Information Council documents that American consumers have not been influenced by the negative news coming from Europe.

Over three quarters of American consumers expressed a willingness to buy insect-protected produce that was developed through biotechnology in 1995, 1996, 1997, and 1999. The percentage of American consumers who expect to benefit from biotechnology has, in fact, rebounded six points to 75 percent from a survey done in 1998. For three years (1992, 1994, and 1998), we have asked American consumers whether they supported or opposed agricultural biotechnology. The results have been identical — just over 70 percent expressed support. This support is highest among men and people with more formal education.

The extent to which people are aware of an issue reflects the level of importance or relevance. Respondents have been asked to rate their own understanding and awareness of biotechnology in the various surveys. The results from the U.S. show virtually no change in consumer awareness of biotechnology between 1992 and 1996. Only about one-third of U.S. consumers had heard or read a lot or something about biotechnology. Awareness in the U.S. had risen a bit in 1997 (to almost 50 percent) with all the media attention to the cloning of a sheep. The recent IFIC survey found that it had fallen back to the same earlier levels (about one-third with a lot or some awareness). Most of the public awareness results from media coverage. That coverage in the US has tended to be positive and balanced. This is a sharp contrast to the media coverage in the EU which has tended to be sensationalized and negative.

Survey results show that providing factual information increases consumer acceptance (at least in the U.S., Canada, and Japan). Sources of information vary in terms of their credibility. People have the most trust in independent health and scientific experts. In particular, we find that acceptance increases significantly when American consumers learn that groups such as the American Medical Association, the Food and Drug Administration, and other independent scientific experts have determined that the foods from biotechnology are safe. However, the European public expresses the most trust in consumer and environmental groups. Their trust in government and industry is much lower than in the U.S.

One challenging issue involves labeling. To avoid confusion, the FDA has determined that a food product should be labeled as a product of biotechnology only if it has been changed in some significant way. This policy ensures product availability, while providing consumers with relevant information about food safety or compositional changes. National surveys of American consumers conducted in 1997 and 1999 found over three-quarters of consumers supported this FDA labeling policy. There is evidence from recent focus groups to indicate that American consumers are already overwhelmed by the level of detail on food labels and do not want more information that has no scientific justification.

The labeling of processed foods presents a number of logistical challenges and costs for everyone involved. U.S. consumers saw little need to label a bottle of ketchup that includes biotech-tomatoes in addition to traditionally bred varieties. In fact, most people don't even understand that different varieties of vegetables or fruits are currently blended during processing. In addition, consumers are not willing to pay extra to have foods labeled as a product of biotechnology (especially when this information has no meaning). Consumers want meaningful choice (that is products that are truly different). They do not need to be confronted by unnecessary duplication of product offerings.

Results of this and other research indicates that biotechnology will not become an issue for most American consumers. In fact, most U.S. consumers (as well as many others around the world) are truly optimistic about the benefits of biotechnology. They will accept the products if they see a benefit to themselves or society; and if the price is right. We are finding that consumers response to foods developed through biotechnology is the same as for any other food. Taste, nutrition, price, safety, and convenience are the major issues. How the seeds and food ingredients are produced will (and should) be irrelevant for all but a small percentage of elite and activist consumers.

Overall, the main reason for the sustained US support for biotechnology has been a long-term commitment to education of opinion leaders and consumers. There has been an unprecedented partnership among the government, industry, universities and third-party groups (such as the American Dietetic Association). These groups began working proactively to understand and address public perceptions well before the first products were released. In contrast, those groups opposed to biotechnology have had very little impact on the perceptions of opinion leaders or consumers in North America.

Our experience with education in the US provides some guidelines for other countries. Consumers need to recognize that the benefits of biotechnology. They also must believe that the applications of biotechnology are ethically acceptable and safe. The opportunity that biotechnology provides for feeding the world (while protecting the environment) will be compelling for many consumers. It will also be important to build trust in government and scientists to serve the public interest. This requires that scientists and government officials step forward and provide the necessary leadership to ensure that public perceptions are based on balanced information. However, once that leadership had been lost, it will be difficult and costly to regain the high ground.

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Introduction

- ▶ The promises of biotechnology are becoming reality -- especially for American farmers.
- ▶ Future products will have enhanced value and benefits for consumers.
- ▶ These products must be acceptable in the international market.
- ▶ Consumers and interest groups in some countries have expressed some opposition.
- ▶ Communication needs to be based on an understanding of public attitudes.
- ▶ Today will review trends in public attitudes about biotechnology.

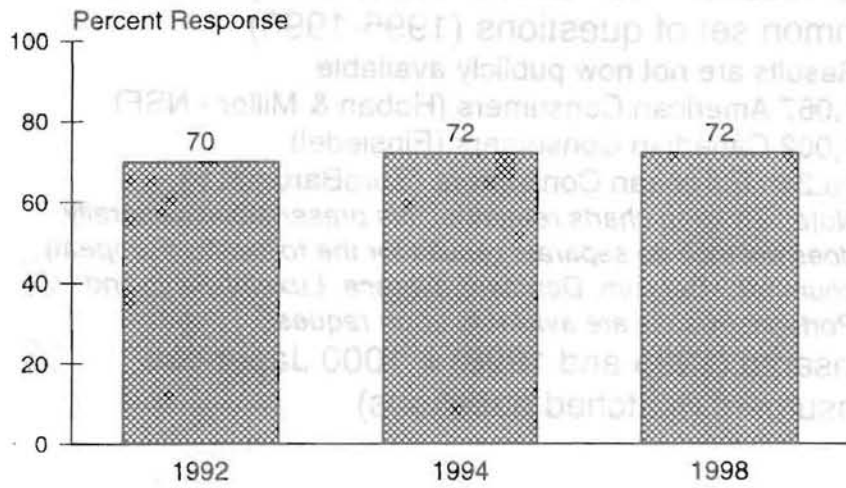
Survey Research Projects

- ▶ Ten years of research experience.
- ▶ Most recent: International team of experts with a common set of questions (1996-1998)
 - Results are not now publicly available
 - 1,067 American Consumers (Hoban & Miller - NSF)
 - 1,002 Canadian Consumers (Einsiedel)
 - 16,246 European Consumers (EuroBarometer)

Note: To keep charts readable, this presentation generally does not include separate results for the following European countries: Belgium, Denmark, Greece, Luxembourg, and Portugal (results are available upon request)
- ▶ Monsanto (1995 and 1998) = 1000 Japanese Consumers (Matched questions)

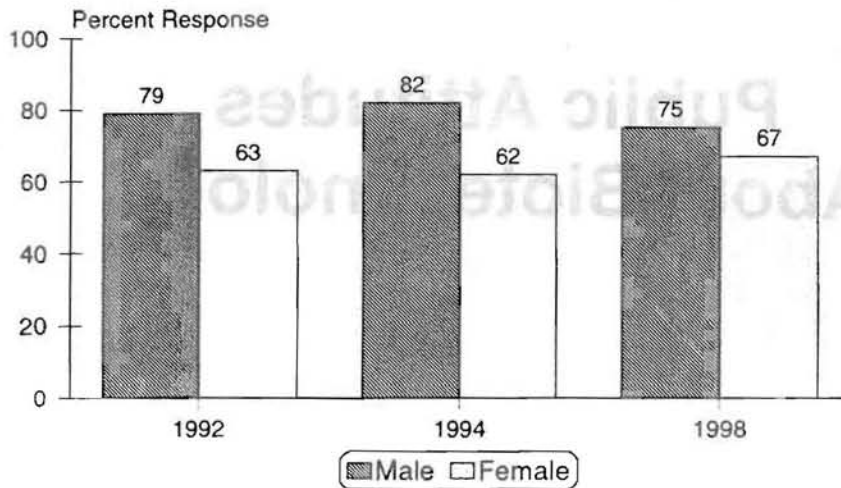
Public Attitudes About Biotechnology

American Consumers' Support for Agricultural Biotechnology



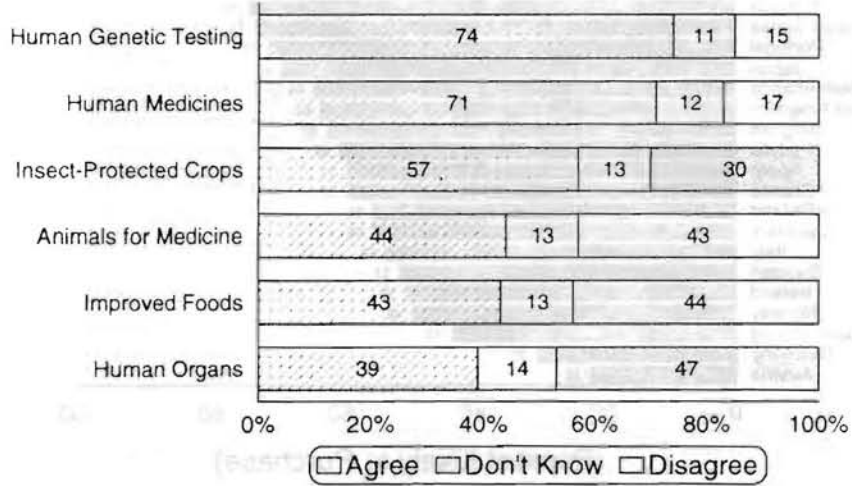
American Consumers' Support for Agricultural Biotechnology

(Differences based on Gender)



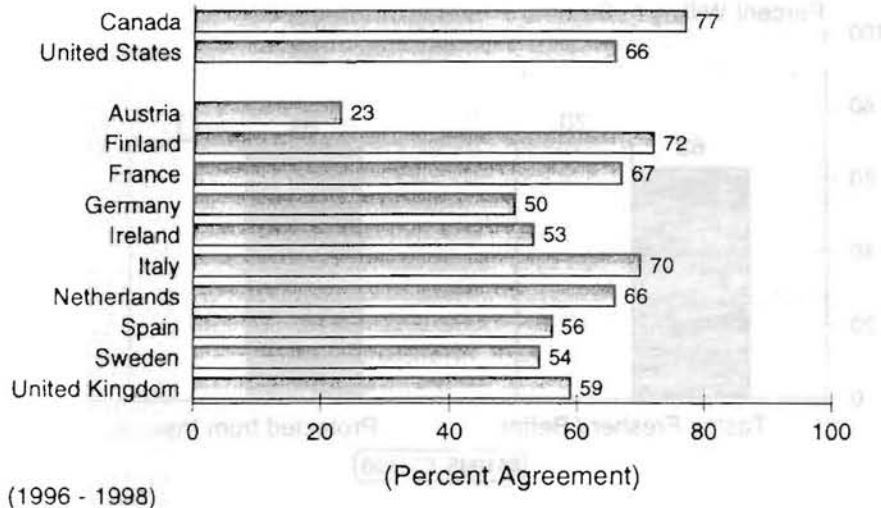
Modern Biotechnology Applications Should be Encouraged

(Includes ALL European Respondents)

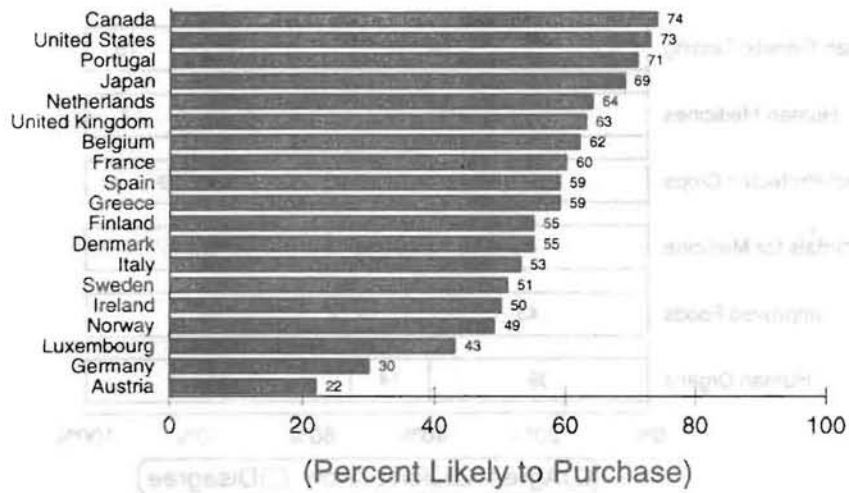


Insect-Protected Crop Plants Should be Encouraged.

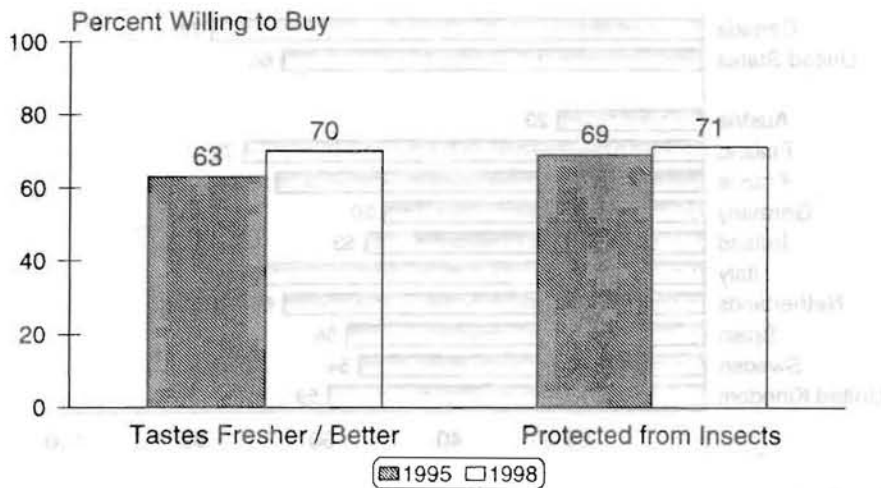
(Only includes Selected European Countries)



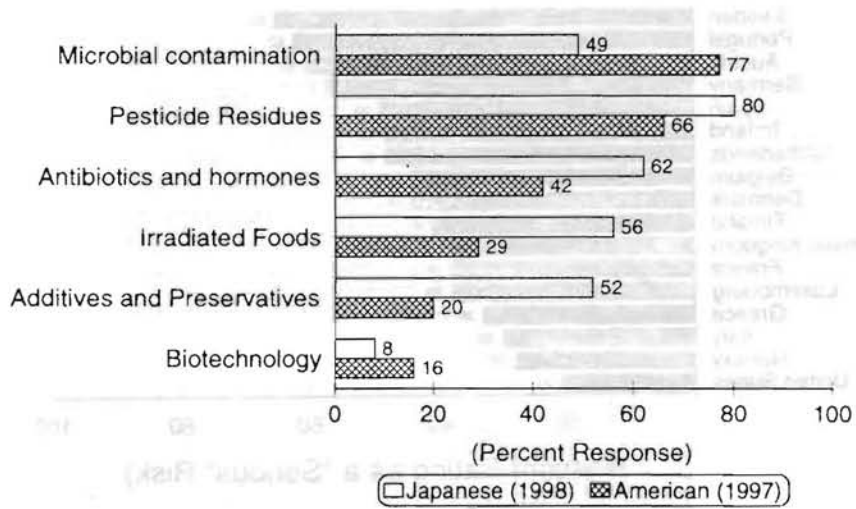
Willingness to Buy Produce Developed through Biotechnology to Resist Insect Damage (1995)



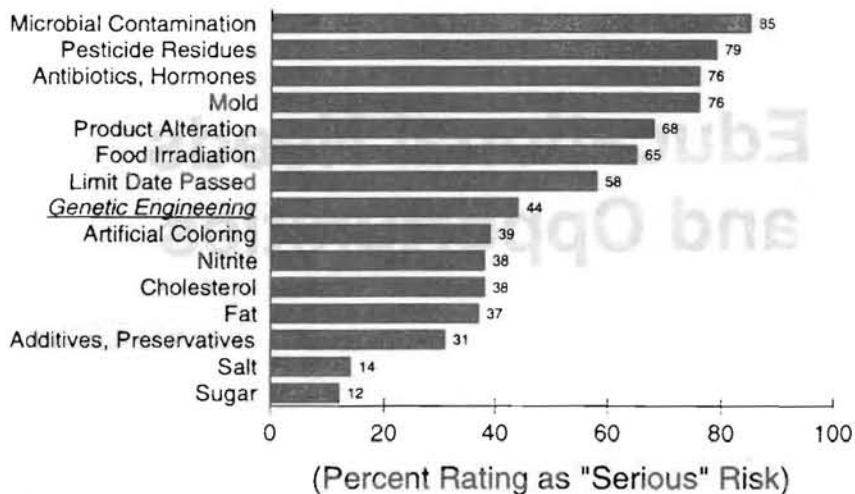
Japanese Consumers' Willingness to Buy Produce Developed through Biotechnology



Consumers' Ratings of Food Attributes as a "Serious Hazard"

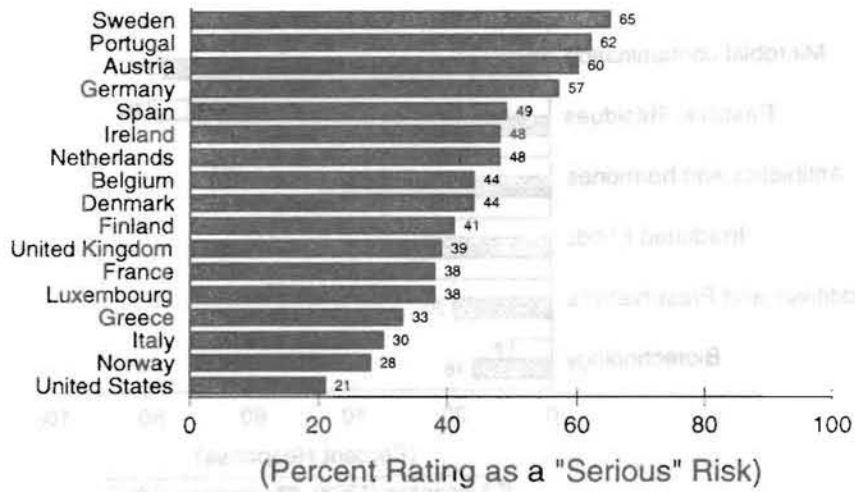


Perceived Severity of Different Potential Food Risks among Europeans (1995)



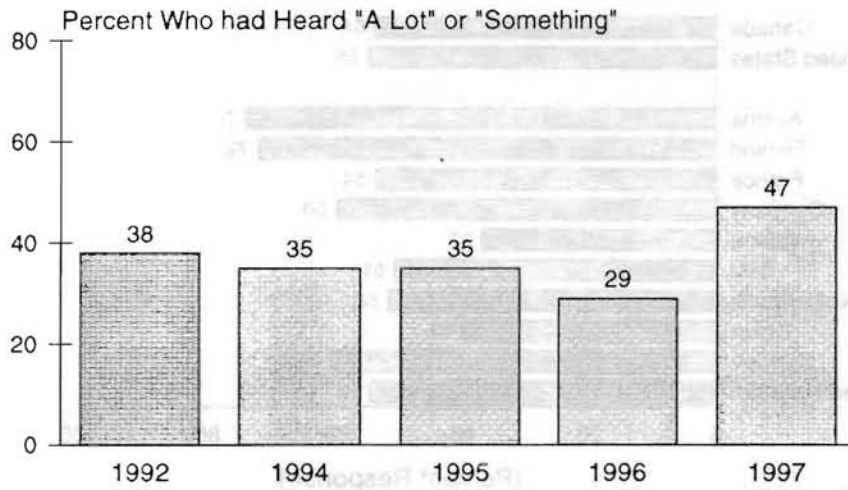
(FMI -- 1995)

Perception of Genetic Engineering as a Serious Food Risk (1995)

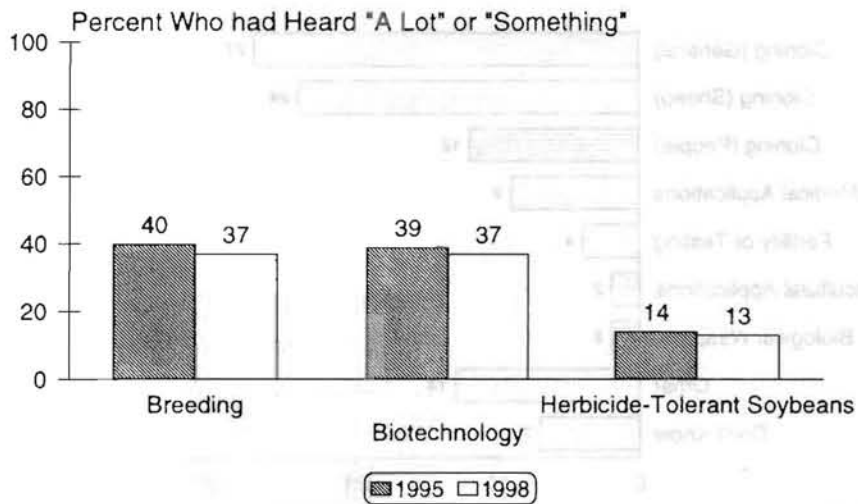


Educational Needs and Opportunities

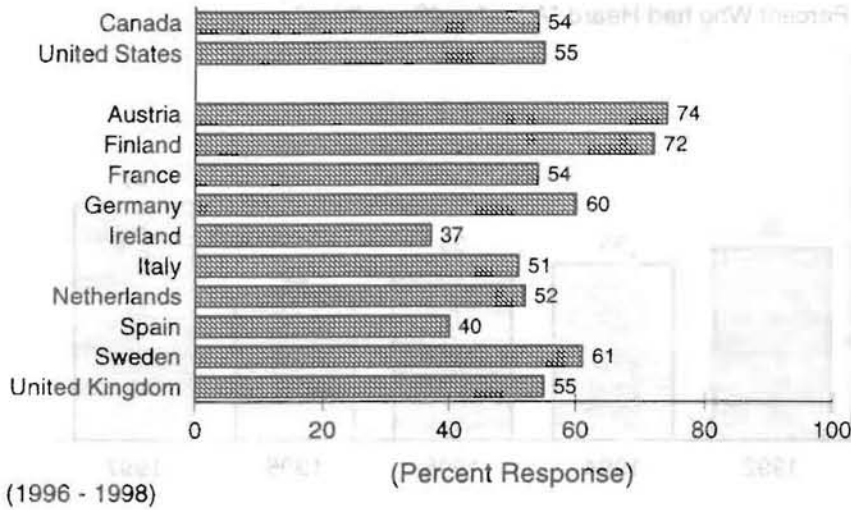
American Consumers Awareness of Biotechnology



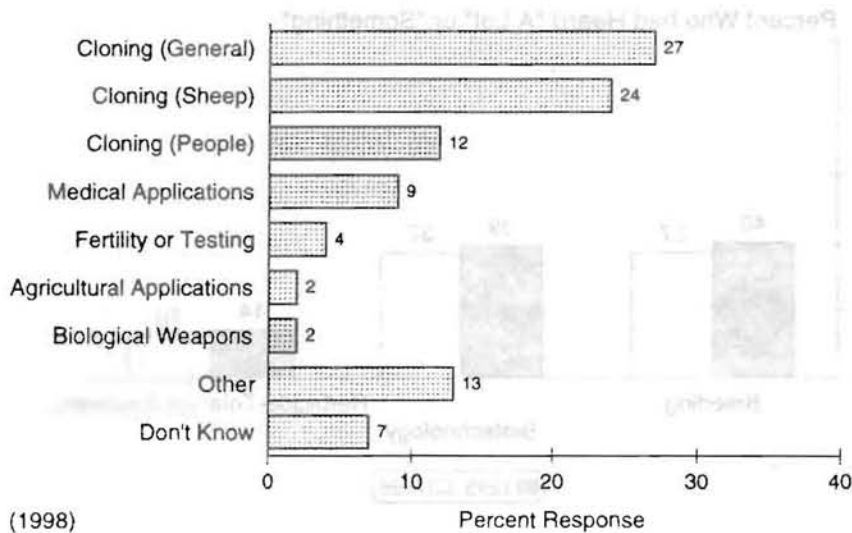
Japanese Consumers' Awareness of Biotechnology



Respondents who had Heard about Biotechnology in Previous Three Months. (Only includes Selected European Countries)

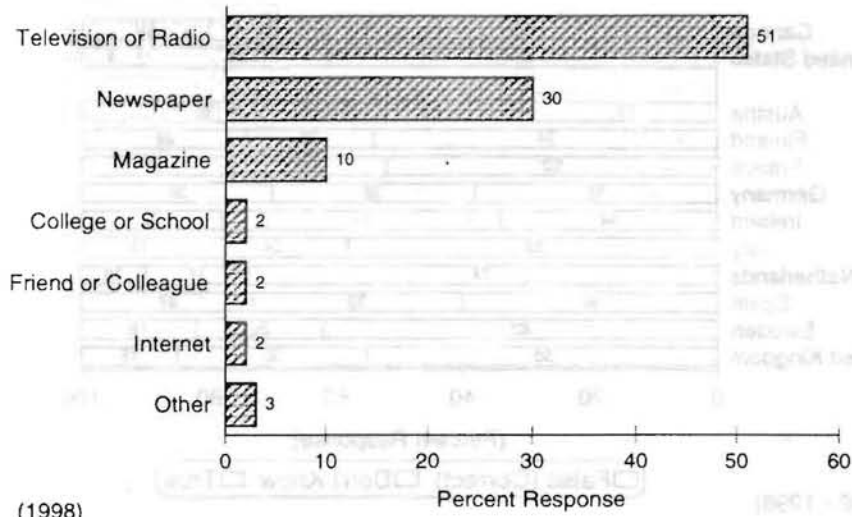


What American Consumers had Heard or Read about Biotechnology (Only includes the 55% receiving information).



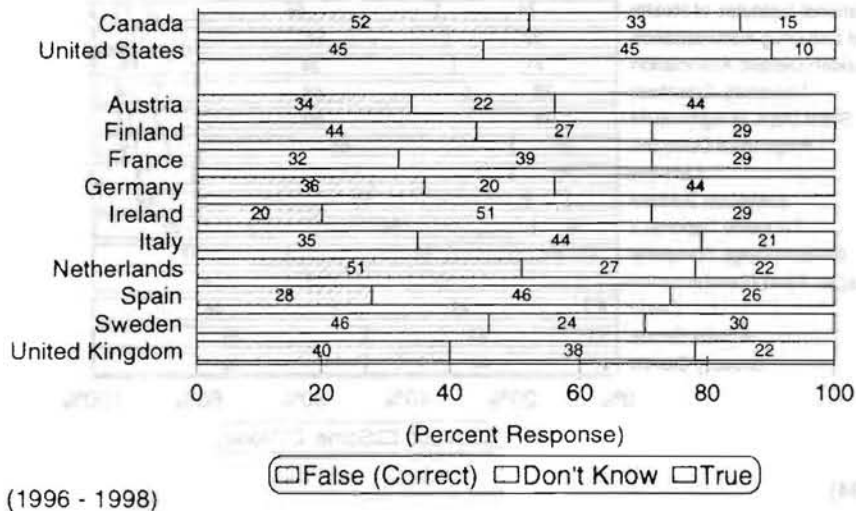
How did American Consumers Receive Information about Biotechnology

(Only includes the 55% receiving information).



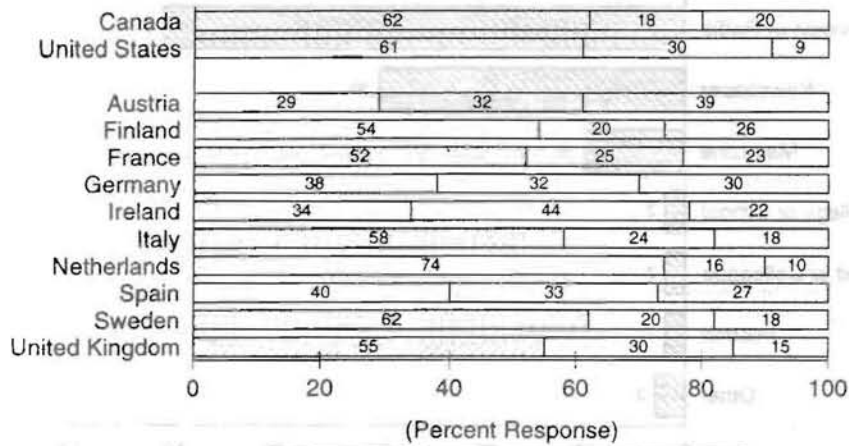
"Ordinary tomatoes do not contain genes, while genetically modified ones do."

(Only includes Selected European Countries)



"By eating a genetically-modified fruit, a person's genes could also be changed."

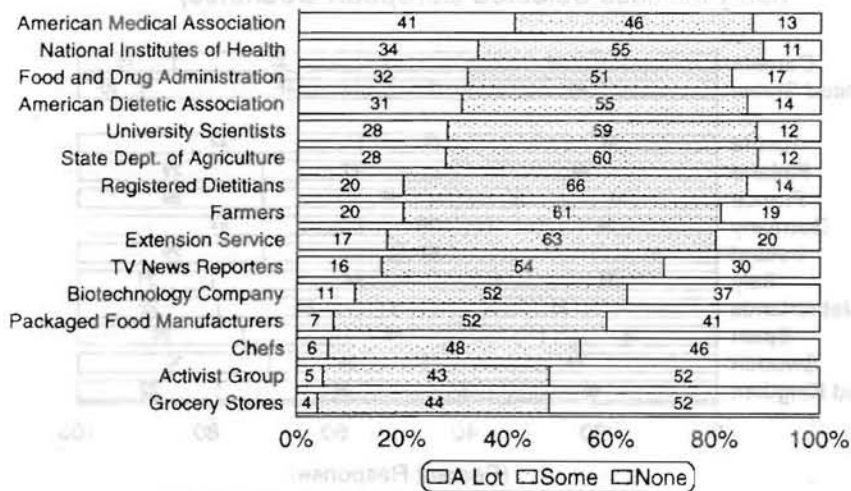
(Only includes Selected European Countries)



(1996 - 1998)

False (Correct) Don't Know True

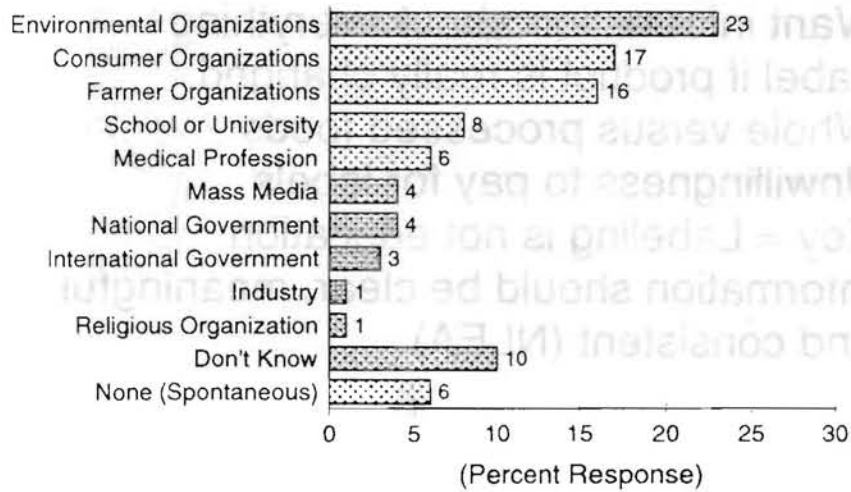
American Consumers' Trust in Biotechnology Information Sources



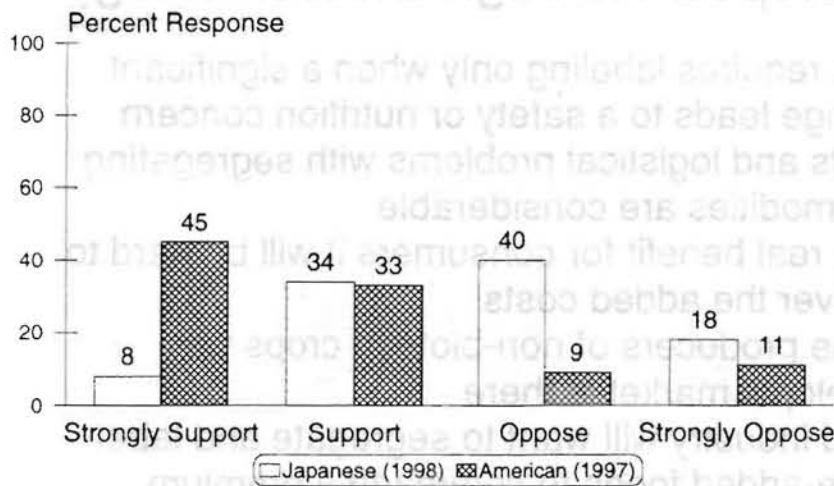
(1994)

A Lot Some None

Source of Information Trusted Most to tell the Truth about Food Biotechnology. (Includes ALL European Countries)



Support for Government Policy to Label Biotech Foods Only if Changed



Labeling Issues

(USDA-Sponsored Focus Groups)

- ▶ Want information about everything
- ▶ Label if product is really changed
- ▶ Whole versus processed foods
- ▶ Unwillingness to pay for labels
- ▶ Key = Labeling is not education
- ▶ Information should be clear, meaningful and consistent (NLEA)

(1992)

Why not Label all Food Products Developed Through Biotechnology

- ▶ FDA requires labeling only when a significant change leads to a safety or nutrition concern
- ▶ Costs and logistical problems with segregating commodities are considerable
- ▶ If no real benefit for consumers it will be hard to recover the added costs
- ▶ Niche producers of non-biotech crops will develop if market is there
- ▶ Food industry will want to segregate and label value-added foods to command a premium

Conclusions and Implications

Future Prospects for Biotechnology in the US and Canada

- ▶ Long-term educational efforts have been effective (with leaders and public).
- ▶ Some negative media coverage may lead to a short-term controversy
- ▶ Will likely not be an issue for most consumers
- ▶ Activist groups have relatively low credibility
- ▶ Bottom line for consumers is that third-party experts say it is safe
- ▶ Key for consumers' food selection is still taste, value, nutrition, and convenience

Future Prospects for Biotechnology in Japan

- ▶ Consumers remain quite positive about agricultural biotechnology
- ▶ Many products have been approved
- ▶ Grain entering country without incident
- ▶ Controversy is heating up a little
- ▶ Activists are pushing for labeling
- ▶ Key is move away from Europe and back toward U.S. (emphasis on science)

Future Prospects for Biotechnology in Europe

- ▶ Volatile and unpredictable area
- ▶ Complex issues of labeling and identity preservation
- ▶ U.S. Government will not mandate segregation of GMO crops (GMO-free will likely cost more)
- ▶ More products will arrive on the market from around the world (no alternatives will exist)
- ▶ Educational efforts will take hold with European leaders and consumers
- ▶ Activist tactics will become "old news"
- ▶ Internal economic concerns (e.g., lost jobs) will outweigh perceived risks

Reasons for Greater Opposition in Parts of Europe

- ▶ Lack of proactive education for industry, political leaders and consumers
- ▶ Early strength of opposition groups (vacuum)
- ▶ Anti-American sentiments
- ▶ Concerns over risks of new technologies (history and proximity)
- ▶ Lack of confidence in government
- ▶ Connections to nature and the strength of greens
- ▶ Opposition to processed or foreign foods
- ▶ Lack of perceived benefits from first products

Major Influences on Acceptance of Biotechnology

- ▶ Awareness and understanding
- ▶ Recognition of benefits
- ▶ Viewed as ethically acceptable
- ▶ Confidence in government
- ▶ Trust in information

Audiences for Education

- ▶ Best way to reach consumers is by educating leaders
 - Scientists and health experts
 - Government officials
 - Media and other communicators
 - Farmers and food industry

Educational Messages

- ▶ Benefits and uses of biotechnology
- ▶ Consumer concerns and issues
- ▶ Government regulations and policies
- ▶ Historical context of biotechnology
- ▶ Food production and processing
- ▶ Taste, price, nutrition, and safety