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Why Do People Fear or Accept Genetically Modified Foods?

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Although transgenic foods, crops and animals suffer from public skepticism, recent reports from the National Academies of Science, as well as public research, show these products are safe.[1] Additionally, the Food and Drug Administration (FDA) assures the public that they are monitoring and regulating the products in our food system.[2] More than two-thirds of the food in U.S. markets contains at least some genetically modified food (GMF). However, many reports note that American opinion is split on GMF.[3] Although surveys and polls have examined this issue to estimate the rates of confidence, the question of why some fear this development and others do not remains unanswered. This study tries to answer that question.

Research Method

Surveys are an effective way to study such issues, but they are very dependent on how questions are asked, the options given to respondents, and

[1] Institute of Medicine and the National Research Council of the National Academies. *Safety of Genetically Engineered Foods: Approaches to Assessing Unintended Health Effects*, National Academies Press, 2004.
[2] Brackett, Robert E. *Written Testimony: Full Committee Hearing of the Senate Committee on Agriculture, Nutrition, and Forestry: Benefits and Future Developments in Agriculture and Food Biotechnology*, June 14, 2005.
[3] For further information on the survey results see National Science Board's report *Science and Engineering Indicators 2006* published by the National Science Foundation, February 2006; the report released by Cornell's public issues education project, Genetically Engineered Organisms, found at http://www.geo-pie.cornell.edu/ accessed on February 22, 2006; and "Public Sentiment About Genetically Modified Food: November 2005 Update" by the Pew Initiative on Food and Biotechnology found at http://pewagbiotech.org/research/2005update/ accessed on March 1, 2006.

other features of the survey. To get at the complex question of why people fear or accept GMF, I conducted interviews instead. Interviews are a more in-depth method that is able to explore feelings and opinions more thoroughly and to probe the underlying assumptions people hold.

Forty people were interviewed initially, each having at least completed a bachelor's degree. I first asked the respondents to provide answers on a scale of 0 -10 evaluating their general thoughts about the safety and health benefits of GMFs. The intention was to determine if they were very supportive or very opposed to GMFs in order to get two groups representing the extreme poles of opinion. From these initial questions, the six most opposed people and the six most supportive people were selected for open-ended interviews to determine why they feel this way. The questions used for discussion in the open-ended interviews are shown below:

Interview Questions

1) Do you practice/have any dietary restrictions?
2) What did you study in college?
3) How do you get most of your scientific news?
4) How much do you believe you know about GM foods?
5) Where did you get your information?
6) What is your impression of GM food?
7) Why are you confident/not confident in the safety and health benefits of GM food?
8) Did you know that GM foods have been on U.S. store shelves for about a decade?
9) Were you aware that more than two-thirds of the food in U.S. markets contains at least some amount of a GM crop?
10) Does this information change your opinion? Why?

The study does not reflect an accurate representation of the population, and it was a small sample, so it can not be used to answer general questions of that type. But it does provide an exploratory analysis of the general themes behind why the public feels the way they do about GMFs.

Results

Results were obtained in the form of common themes that appeared in the interviews and the frequency that they appeared. Below are the themes that best represent the range of opinion:

Themes of Those Most Opposed to GMF

1. Too Little Time *– 5 people (83 percent)* Many of the respondents felt that GM foods have not been evaluated over the length of time necessary to determine the environmental and health effects of the products.

2. Not Natural *– 2 people (33 percent)* Some respondents were concerned that GMF is not what nature intended and that these things should not be "messed around with" because the consequences are unknown.

3. No Trust in Government and Corporations *– 2 people (33 percent)* Some were concerned that the private sector was preoccupied by increasing revenue and that government was highly influenced by private companies. Additionally, they did not feel the federal regulating arms have adequate resources.

4. Cause of Higher Cancer Rates *– 2 people (33 percent)* Respondents were concerned that GMFs were the reason the U.S. had higher cancer rates than other countries. Using reasonable deductions, they thought the U.S. is much the same as other nations except for the greater amount of GMF consumed by the public, therefore GMF might be the cause.

Themes of Those Most Supportive of GMF

1. GM is Not New *– 2 people (33percent)* Respondents felt that the current GM foods are just a new approach to a process of cross breeding and pollinization that has existed for hundreds of years. They felt that current genetic modification is no different, just more advanced.

2. Trust in Scientists and Government *– 5 people (83 percent)* Most of the respondents felt that scientists were interested in developing products that are safe and effective, and that the government is doing its job in monitoring products that enter the market.

3. Sustainability – *4 people (67 percent)* Many of the respondents believed GMF helps sustainability of both the environment and the population through increased yields, less pesticides, and the ability to grow in unusual conditions.

4. Would Know of Problems *– 2 people (33 percent)* Some felt that if GMFs were harmful, consumer groups would report any negative effects. They also thought there has been enough time to determine negative effects.

When asked if they knew the length of time and prevalence of GMF in the U.S. (Questions 7 and 8), the supporters were better informed than opponents. Supporters were two times (67%) more aware than opponents (33%) that GMFs have been on the market for a decade, and they were also twice as aware (33%) than opponents (17%) that approximately two-thirds of foods in U.S. markets contain some sort of GM crop. This information did not have a noticeable impact on the opposing group, although it did reinforce the views of the supportive group.

Conclusion

The profiles of those who support GMFs and those who oppose GMFs show opposite beliefs on all issues.

Profile Comparison

Issue	Supporters of GM Foods	Opposers of GM Foods
Length of Time Elapsed	We would know the negative effects by now.	There hasn't been enough time for adequate testing.
GMF Relationship To Nature	It is necessary for sustainability of both the environment and the population.	This is not what nature intended.
Trust in Institutions	Trust science (public and private) and the government.	Does not trust the government or private enterprises.
Results Of GMF	Genetic modification is not new.	GMF is the cause of higher cancer rates.

When those who oppose GMFs were informed about the duration and amount of GMFs on the market, the correct information did not change their opinion, while it reinforced the opinions of those who support GMFs. Generally, both groups were not swayed by information very much, suggesting that their opinions are firmly held.

From the information gathered in this study, it is concluded that the beliefs people hold regarding GM foods are based on values, not information. Science cannot alter values, it can only provide information; people make their decisions based on intrinsic characteristics that transcend rationality.