

THE PUBLIC PERCEPTION OF GM FOODS
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INTRODUCTION

Food can be genetically modified through a variety of methods in the hope that it will be improved in some way. Examples of GM crops and plant based foods include potatoes, tomatoes and corn, whereas non-plant based GM foods include cheese and additives used in food such as yeast. Improvements by GM technology can be to develop the yield and quality of a crop, or to add nutritional value or shelf life.

Much speculation has surrounded GM food and there is currently a ban on their growth and use in the UK. The media have portrayed GM in a pessimistic light, labelling them as 'Frankenstein Foods', and there is much speculation surrounding GM from pressure groups such as Greenpeace, Friends of the Earth and The Soil Association. The government have continually backed GM to no avail.

A recent Food Standards Agency report showed that the public gained knowledge about GM almost exclusively from the news and media, and had little understanding of the methods and science involved.

Another study, (Tenbult *et al* 2005), concluded that consumer attitudes towards GM were negative based upon ethical reasons. Morris and Adley (2000) carried out a similar study amongst science academics, but did not find different attitudes towards GM technology compared to the general public except their concerns were mostly related to the environment and not ethical concerns.



December 14, 2005, Hong-Kong : Campaigners at trade talks in Hong Kong told the World Trade Organisation: "take your hands off our food". They delivered the Citizens' Objection to WTO and a hamper of organic food. From left to right: Alejandro Jara (WTO Deputy Director General), Vandana Shiva (Research Foundation for Sciences, Technology and Ecology), Susan Georges (ATTAC France) and José Bové (Confédération Paysanne) *FOEI/EyePress/Dong Ng*

One paper "Genetic Engineering and the perceived levels of risk" by J. Scully (2003), maintained that accurate information about GM was a 'scarce and valuable resource' and that the age of consumers plays a significant part in the level of knowledge about GM. With knowledge being more accurate in younger consumers. Scully also reported that the level of education

played an important role in knowledge and understanding of GM. Another report issued by the Biotechnology and Biological Science Research Centre (2003), although limited in scope was useful in determining that the public were concerned with GM and what associated health risks there may be.

This project aimed to understand how much knowledge the public have about GM, in terms of technology, products and advances, benefits, drawbacks and the underlying basic science. It was also considered important to determine where the public gained information about GM, as this is important for influencing public knowledge and opinion. The responses of the public were compared with those of an informed group, namely students in the School of Biosciences.

A preliminary questionnaire was designed and tested on twenty respondents.

The preliminary questionnaire consisted of fifteen questions. The majority of the questions used were ranking type questions in which respondents had to give a response between one and five, with one being to strongly disagree and five being to strongly agree. This questionnaire was implemented in the summer of 2005, individuals were selected at a variety of locations. The final questionnaire was refined as a result of the responses to the trial. Several locations were used at different times, both on university campuses and in town centres, in order to gain both student and public responses. Table 1a below illustrated when and where the questionnaires were completed.

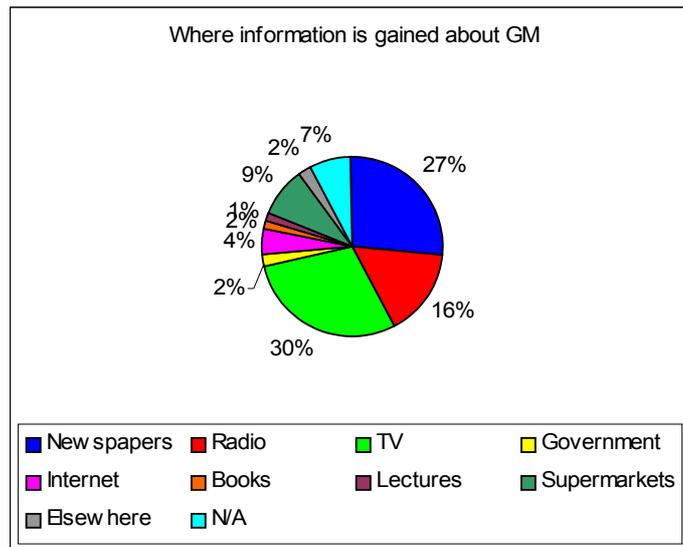
Table 1a; Timetable of questionnaire implementation

Date	Action Taken
14/10/05	Final Questionnaire design finished
26-28/10/05 to 8/12/05	26/10, 2/11, 9/11, 15/11, 5/12 P.M. Science students questionnaires Sutton Bonington campus 27/10, 3/11, 10/11, 16/11, 6/12, P.M. Non-science students questionnaires, Hallward Library, University Park 28/10, 4/11, 11/11, 17/11, 8/12, All day, general public questionnaires, Beeston town centre
20/12/05	Questionnaire conducted in Newcastle-under-Lyme town centre

Table 1b: The total number of respondents

	Number of respondents
General public	72
Bioscience students	44
Non-bioscience students	47
Focus group	17
Total	180

Graph 1.1 The various sources of GM information



It became apparent during the study that the views of those under eighteen were not represented in the survey. It was decided that a focus group would be the best way to gain the views and understanding of those under eighteen. The main themes from the questionnaires were taken and put into an easy to understand format and discussed in a GCSE biology lesson with a group of under 15's. The group were prompted to discuss various statements and asked questions about GM. One hundred and eighty respondents completed the final questionnaire; these were split into the following groups; the general public, bioscience students, non-bioscience students. The results from the focus group were treated separately. and the focus group. Table 1b below, shows the numbers of respondents for each group.

The respondents of the questionnaire gained information about GM from a variety of sources, as illustrated in Graph 1.1. The main sources were TV and newspapers at approximately 30% each. Supermarkets at 9% were a major route after radio (16%). Very few gained information from the internet (4%).

The majority of the respondents gained information about GM from the media, 73%. However the bulk of the respondents neither agreed nor disagreed with the statement 'I trust what the media say about GM', implying that although this may be the main source of information regarding GM, this information is not trusted.

Few agreed with the statement 'I trust what the Government say about GM', and it was established that information from the government does not reach many people.

Nearly all of the respondents said that supermarkets did not provide reliable, informative information about GM food.

The findings would appear to indicate that the public do not consider themselves well informed by the available sources.

With the bioscience students knowledge of the science and methods was generally of a good standard, but the misconceptions which were popular amongst the general public were popular amongst the bioscience student population also.

The public and bioscience students were more likely to trust scientists than any other source. This suggests that a primary source who are thought to have more knowledge of the technology are trusted to a greater degree than a secondary source such as the media or the government/supermarkets.

Generally, awareness and understanding of GM amongst the respondents is only at a basic level. Some members of the public have a broad and accurate understanding of GM. Members of the general public who had a better understanding tended to be between 31 and 55, with higher managerial/professional jobs, who read broadsheet daily newspapers, who may have received higher education. Knowledge levels of the respondents is shown in Graph 1.2.

Even though the bioscience students were clearly more knowledgeable when it comes to the science and technology of GM, there was little confidence amongst this group about the issues linked with GM, such as the politics, safety and ethics, which surround GM food. This may be why a statistical analysis showed that there was no variance in knowledge between the groups, which was unexpected.

When it came to the applications of GM, only the bioscience students associated GM with medicine and animals as well as food or crops.

A very small percentage of the public respondents could name a GM product, and those who did gave simple responses such as 'wheat' or 'tomato'. As expected only the bioscience students, gave responses including specific varieties 'Flvr Savr Tomato', 'golden rice' and 'herbicide tolerant wheat'.

When the misconceptions that are associated with GM were explored such as the associated unnaturalness, poor food safety and ability to feed the world, these ran most prominently amongst the public. At the same time many were aware they did not have a full understanding of GM and did not

feel that they could make an informed decision as the sources of GM information could not be trusted.

When asked to rank the level of agreement with the statement 'GM food is unnatural' and 'GM food is unsafe', the majority of the public agreed with both the statements. Whereas bioscience students were more likely to disagree that GM is unsafe, they would not commit to the view that the process was unnatural. Statistical analysis suggested there was a significant difference between the views of the public and those of Bioscience students.

The public largely saw GM food as unsafe. This is interesting as the past year or so has seen several scares involving conventional food, including food poisoning incidents, the Sudan 1 food dye scare, and more recent concerns over the level of benzene, a carcinogen, in some ready prepared foods.

Perceptions of those under the age of eighteen in the focus group were generally more accepting of GM food, and would not choose an organic food over a GM food. This group had better knowledge of the basic biology involved, and in some cases were more knowledgeable than the Bioscience students.

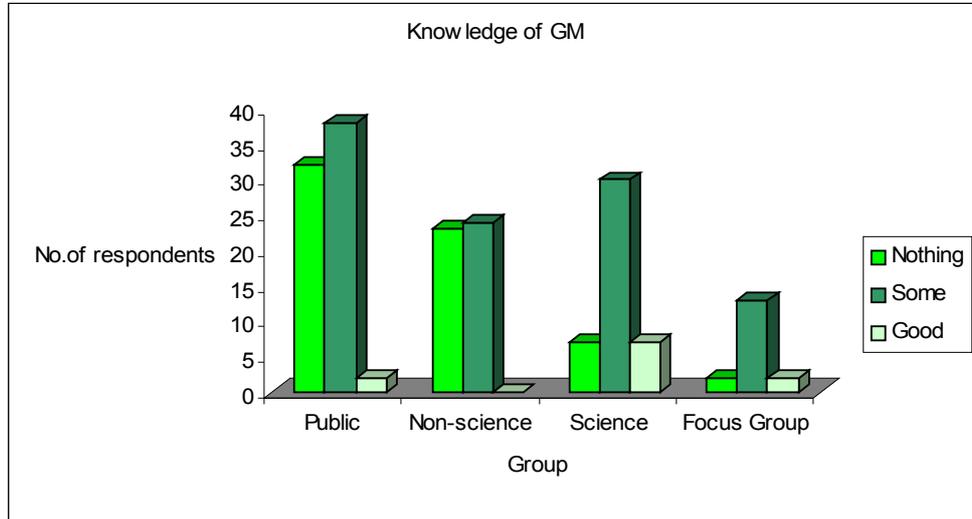
In general the results of this survey agree with the findings of previous studies. There is widespread ignorance of the the whole subject of GM amongst the public yet a desire for better, more reliable and trustworthy information.

This finding suggests that if the Government and biotechnology companies promoting GM want to persuade opinion they should make non-biased information available to the public. This study suggests that the public would be most receptive to an information pamphlet/ leaflet provided through supermarkets or delivered to their home.

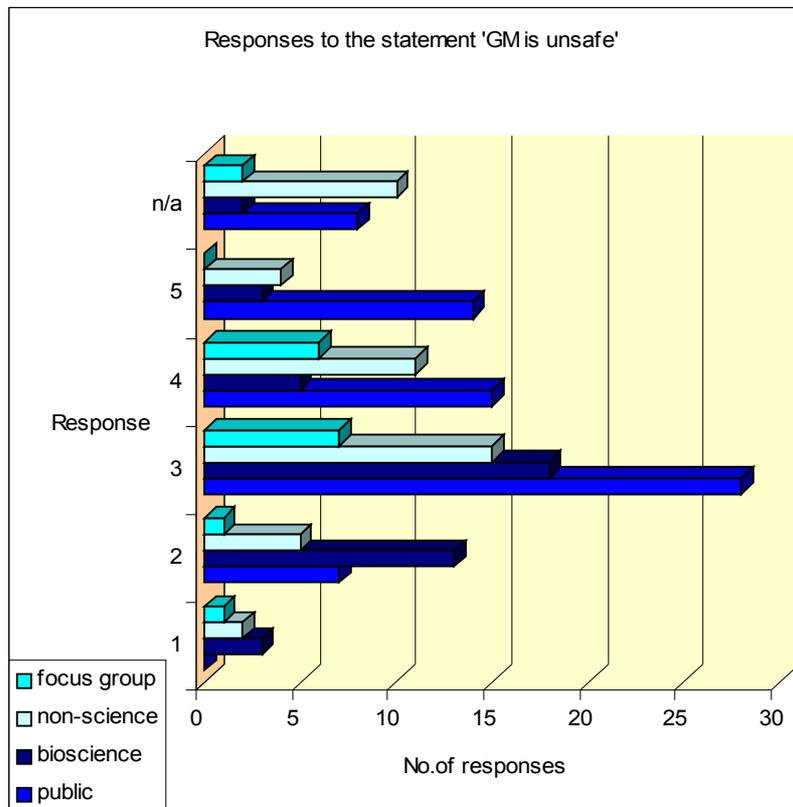
Without public acceptance and understanding, the potential of GM

crops in Britain for biofuels, improved nutrition and new drugs could be lost.

Graph 1.2: A bar chart to show the perceived knowledge of the respondents of each group



Graph 1.3 Responses to the Statement 'GM is unsafe'



FURTHER READING

- BBSRC, 2003, **Biotechnology in our food chain: Public Opinion Survey**, Biotechnology and Biological Science Research Centre
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Author Profile:

Alex is 21 years old, and after completing her A levels went on the study Environmental Biology at the School of Biosciences at The University of Nottingham, graduating in 2006 with an upper second BSc. In addition to GM foods she was particularly interested in air and noise pollution, and hopes to specialise in these areas in her career. Alex is now taking a gap year before furthering her study and train to be an Environmental Health Officer.

