

FSA WORK ON CONSUMER ATTITUDES TO GM FOOD

Executive Summary

1. The Food Standards Agency has carried out a range of distinctive and innovative activities designed both to assess people's views and explore a range of methods of engaging people in debate about GM food. These activities have been taken forward as the Agency's independent contribution to the public dialogue on genetic modification and as part of the Agency's remit to protect consumer interests in relation to food. The activities demonstrate the Agency's commitment to consumer choice, openness and transparency and contribute to a larger body of consumer research commissioned by the Agency using both quantitative and qualitative methods.
2. The Consumer Committee's advice on the outcomes of these activities has been sought and is being published in parallel (Paper 03/05/04a). It should be considered by the Board during its discussion of this paper.
3. The Board is invited to:
 - **comment** on the outcome of the activities taken forward by the Agency, particularly those summarised in paragraphs 20 to 33 of this paper, and the main conclusions from this work (see paragraphs 34 to 38);
 - **note** and **consider** the advice of the Consumer Committee circulated as Paper 03/05/04a
 - **comment** on the issues the Agency should cover in its advice to Ministers regarding consumer views on GM food (Annex 7). This advice would also be copied to the Public Debate Steering Board.

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FSA WORK ON CONSUMER ATTITUDES TO GM FOOD

Issue

1. The Board is invited to consider and discuss the activities and outcome of the work taken forward by the Food Standards Agency as part of its on-going programme of consumer research and its contribution to the public dialogue on GM.

Strategic Aims

2. This paper meets the Agency's strategic aim to encourage and support initiatives to improve the clarity and value of information provided to consumers to enable them to make informed choices, and to ensure that issues of public concern are debated openly.

Overview

3. This paper:
 - begins by summarising the FSA's remit in relation to GM foods, the Board's previous consideration of GM food issues;
 - outlines the scope of the public dialogue on GM launched by the Government in July last year, and explains the ways in which the FSA is contributing to this activity;
 - comments on the extent to which the FSA's regular research into consumer attitudes casts light on consumer views on GM food. This includes both the FSA's annual survey of consumer attitudes, carried out by independent contractors, and covering a representative sample of 3000 UK consumers, and supporting qualitative work to explore in greater depth the views of consumers on specific topics, including GM foods;
 - summarises the FSA's new qualitative work, announced in July last year, to explore consumer views on GM food. These activities aimed both to assess the views of people whose voices are less often heard, and to explore a

range of different approaches to involving consumers in debate about complex issues;

- suggests how the results of this work might be drawn together in the FSA's advice to Ministers about consumer views on GM food, hence contributing to the "public debate" strand of the broader public dialogue on GM;
- suggests some initial, more general, implications which might be drawn from the experience of the FSA's new qualitative work – bearing in mind that a more comprehensive, independent evaluation is being commissioned.

4. The Agency's Consumer Committee discussed the outcomes of this work on 30 April. Due to the timing of this meeting the views of the Consumer Committee have been drafted as a parallel paper to be considered by the Board alongside this one.

Background

FSA Remit in relation to GM food

5. The Agency's remit is to protect the interests of consumers to ensure food safety and consumer choice.

Previous FSA consideration of GM food issues

6. The FSA Board has discussed GM issues on a number of occasions since the Agency came into being in April 2000. The discussions to date have focussed on GM food safety (June 2000) and GM labelling in the context of the European Commission's proposals on GM (September 2001, September 2002 and November 2002).
7. During its considerations of GM food safety the Board accepted that the current safety assessment procedures were sufficiently robust and rigorous to ensure that approved GM foods are as safe to eat as their non-GM counterparts. However, the Board recognised that there is inherent uncertainty about the potential long-term effects of GM and other novel foods. The Board noted that a feasibility study on the practicality of long term monitoring of the health implications of novel foods was being funded by the Agency. The study has examined the use of databases containing information on food purchasing and

consumption patterns and their potential application for long term monitoring. The report of the study will be published in the summer and discussed at a stakeholder meeting. The Agency will consider the conclusions and recommendations of the report before exploring how further work could be taken forward.

8. In assessing the safety of GM foods for approval in the EU, the Agency is advised by the independent Advisory Committee on Novel Foods and Processes. The annual open meeting of this committee in November 2002 provided stakeholders with an opportunity to question the committee on its role in the safety assessment of GM foods and to discuss with the committee its views on the safety of GM foods. The minutes of the open meeting are attached at Annex 1.
9. The Board's discussions on GM labelling have largely focussed on the European Commission's (EC) GM proposals and reaching an agreed position, which was subsequently used to inform the UK negotiating line in Commission working group meetings. The Board concluded that the FSA should strongly support the principle of comprehensive labelling of GM foods and ingredients. However it was not convinced that the EC GM proposals for GM labelling published in July 2001, could be delivered for consumers in a way that could be enforced, was practical and affordable, and considered that without proper safeguards in place there could be widespread fraud and consumers misled. Political agreement was reached on the GM proposals by qualified majority vote at the end of 2002. The UK voted against both proposals for the reasons outlined above.
10. The Board recognised that robust traceability systems in the food chain have a potentially important role to play in helping to protect the interests of consumers. Traceability may be used to provide reliable information to the consumer, and where appropriate, the source of individual foods. However, under the EU regime for GM labelling the authenticity of 'non-GM' derivatives (which might demand a higher price) cannot be determined because there would be neither an analytical means of doing so nor a paper trail to check.
11. The Board has previously identified a need to continue to update the British public on GM issues including the current widespread use of GM derivatives in food production, enzymes, processing agents and animal feed.

The public dialogue on GM

12. The Government launched a public dialogue on GM in July 2002 to gauge public opinion on GM issues. The dialogue comprises three strands, the public debate, a review of the science surrounding GM and a study of the costs and benefits of GM crops in the UK. The scope of the public dialogue is thus considerably wider than the FSA's remit. Details of the three strands are provided in Annex 2.
13. The Agency announced in July 2002 that it would contribute to the public dialogue on GM as part of its remit to protect the interests of consumers in relation to food and to demonstrate our commitment to consumer choice, openness and transparency. In order to frame its activities the Agency took into account other consumer research and its statutory remit.
14. The Board was updated on these activities in September 2002 and March 2003 and reaffirmed its support for the Agency's work. In March the Board requested the Agency seek its Consumer Committee's views on these activities. The Consumer Committee met to discuss the outcomes of this work on 30 April. The discussions and advice of the Consumer Committee have been published separately and should be considered by the Board alongside this report.
15. The Agency's activities complement those of the public debate. The public debate steering board has been informed of the Agency's activities throughout the course of this work. Much of the Agency's work has been taken forward in public and the results of the individual activities have been placed on the web site.
16. A number of organisations have also explored consumer attitudes to GM and links to their web sites are included in the GM debate section of the FSA web site. Findings from this research vary, illustrating the range of approaches undertaken, and the extent to which the results can reflect the methods used. The *public debate* has carried out a series of foundation workshops to establish a baseline understanding of current attitudes towards GM before finalising its programme and to allow the public to frame the issues and shape the debate. The outcome of these activities can be accessed on the *public debate* web site¹.

¹ www.gmpublicdebate.org.uk/minutes/corrwillbourn.ppt

The FSA's regular programme of consumer research: consumer views on GM food

17. The Agency regularly investigates consumer attitudes about a wide range of food issues, including general food safety, the regulatory system, and food preferences, using both quantitative and qualitative methods. This work has included questions about attitudes towards GM foods, and the outcomes in relation to these specific questions are described below.

18. The three FSA annual consumer attitude surveys have each covered a representative sample of 3000 UK consumers. The survey explores attitudes to a wide range of food issues and allows specific areas such as GM foods to be monitored. This survey has indicated a gradual decline in concern regarding GM foods since the first survey was published in 2001. Concerns raised about specific food issues (when prompted) were as follows in 2002:

ISSUE	PERCENTAGE OF CONSUMERS RAISING CONCERN
Food poisoning e.g. salmonella	59
BSE	45
Use of pesticides to grow food	44
The use of additives	43
The feed given to livestock	41
Conditions in which animals are raised	39
GM foods	36
Antibiotics in meat	35
Healthy eating	27
Food allergies	22
Irradiated food	20

19. An analysis of the levels of consumer concern specifically relating to GM foods over the three years in the annual surveys is summarised below and is appended in detail at Annex 3.

- A decrease in prompted concern about the safety of food with GM ingredients between 2000 and 2002 from 27% to 23%
- A decrease in consumer concern about GM foods between 2000 and 2002 from 43% to 36%
- In 2002 74% of those who were concerned about GM foods claimed it did affect their eating habits

20. Follow up qualitative work on public attitudes towards GM was undertaken in March 2002. This work involved six focus groups, each with eight respondents. A summary of the outcome of this work is in Annex 3. The work was carried out on behalf of the Agency by Cragg Ross Dawson and their report includes the following comments:

- *GM was recognised primarily within the context of food and secondly within the environment in the context of crops.*
- *in normal circumstances GM was very far down the list of peoples considerations with regard to food and in spontaneous chat GM was not prominent.*
- *awareness and understanding of GM was limited for most people with no-one participating in the focus groups having a broad, accurate understanding of the concept.*
- *no spontaneous knowledge of GM in other roles such as medicine and production of non-food crops.*

The new FSA qualitative work on consumer views on GM food

21. This work aimed to assess the views of people whose voices are less often heard, and to explore a range of different approaches to involving consumers in debate about complex issues. This included discussion groups with young

people and people on low incomes, a citizens' jury, sponsoring a national schools' debating competition and school video.

Discussion groups with young people and people on low incomes

22. The Food Standards Agency Scotland has recently worked with the Scottish Civic Forum to organise and facilitate a series of events in Scotland during March 2003 to discuss issues of consumer choice and acceptability of GM foods. The discussion groups were targeted at young adults and low-income consumers, 50 people took part in total. The participants expressed a wide range of views about GM during discussions:

- A minority had firm views (both positive and negative) but the majority of people had more neutral views, and welcomed the opportunity to discuss the issues and become better informed. Some expressed their attitudes to GM becoming more positive as a result of the discussions, others expressed felt their attitudes had become more negative.
- Participants felt that the public might be more willing to accept GM foods if they could see clearer consumer benefits, currently benefits were seen to favour producers.
- Concerns about long-term effects were expressed, and it was recognised that consumers may be wary of unfamiliar technologies and frightened of change.
- Concerns were raised over commercial pressures, and the future direction of GM; for example, there were concerns over ethical issues that might emerge in future if GM animals were developed for food.
- Many expressed strong views that GM food should be labelled, and more information should be available.

23. Background information on this activity is provided in Annex 4. The executive summary of the report of the work carried out in Scotland, and drafted by the Scottish Civic Forum, is described in Annex 6. At its open meeting on 21 March, the Scottish Food Advisory Committee discussed the Agency's independent contribution to the public dialogue. The Committee was broadly supportive of the work being undertaken in this regard, and whilst appreciating the difficulties

associated with targeting hard-to-reach consumer groups such as young people and people on low incomes, was of the view that it was important to engage with these groups.

Citizens' Jury, Slough. 3rd - 7th April 2003.

24. The FSA commissioned Opinion Leader Research (OLR) to run a Citizens' Jury on GM Food. This is a deliberative process allowing informed debate and decision making. A jury of 15 members of the public considered the question: "Should GM foods be available to buy in the UK?" The Jury was broadcast live on the internet and was viewed by over 1000 people. The Executive Summary of the Report of the Citizens' Jury, drafted by Opinion Leader Research, is at Annex 5.

25. The FSA Citizens' Jury expressed a range of views on GM. Following its deliberations nine of the jury voted that GM foods should be available to buy in the UK and six disagreed, commenting that the UK is not yet ready for GM foods. The Jury agreed to a statement which was published on the Agency's web site. This included the following points.

26. The majority of jurors thought GM food should be available to buy in the UK because:

- They are confident in safety measures
- Whilst some anti-GM concerns are valid, there has to be choice
- If the UK doesn't embrace new developments in science it will be left behind, because there are demonstrable benefits from GM

27. A number of jurors expressed concerns about the long-term safety of GMOs, ethical concerns, and the environmental impact of growing GM crops in the UK.

28. All 15 members of the Jury agreed that the following measures are vital if GM food is introduced into the UK:

- Education to keep the public informed of developments and possible problems with GM

- Effective labelling and monitoring of GM foods; for example a GM food logo to ensure that people can make a genuine choice to eat or avoid eating GM foods

Schools' Debating Competition, Durham University. 22 -23rd March 2003.

29. The Agency sponsored the 2003 Durham Union Society Schools Debating Competition. This competition has been hosted by Durham University for the past 14 years and attracted approximately 200 students from a mixture of 39 state and private schools across the UK and a Canadian school. As a sponsor of the event the Agency set the motion for the final of the competition and also provided a bursary, which enabled seven schools who would not have otherwise taken part to attend the event. The motion - 'This house would eat genetically modified foods' - was debated by the four teams who reached the final of the competition. The winners of the competition, selected by a panel of independent judges for their skills in debating the issues relating to GM food, were from Robert Gordon's School in Aberdeen who argued against the motion. After a floor debate, the motion was passed by the majority of students.

30. The general issues raised by the students in the debate were:

- The impact of GM food and crops on consumers, the environment, farmers and developing countries.
- That GM foods should be controlled in the same way as other foods and could benefit society
- People should be free to make an informed choice.
- The potential health risks from GM foods
- The threat to biodiversity from GM crops.

31. The video of the final debate can be accessed from the FSA web site. Two members of the FSA Board, Richard Ayre and Robert Rees, attended the debate in order to listen to arguments about GM food in the formal debate and the views of the young people expressed in the wider floor debate. More detailed information on the debate is contained in Annex 4.

School Video, Acland Burghley Comprehensive School. Completed 22nd April 2003.

32. A group of 26 Year 10 (aged 14-15) media students from a north London Comprehensive School produced a short video about genetically modified foods. The students - through the process of researching and producing the video - explored and reflected on their own views and those of their peers on the topic of GM foods. The video discussed reasons why particular views are held and presented evidence for those views. The students were supported in the technical production of the video by their media tutors and a professional filmmaker who has extensive experience of working with young people. The school's science department was also involved in the project to provide background material and support to the production group. The video is available on the FSA website. Background information regarding the production of the school video is provided in Annex 4. The key issues raised were:

- The potential safety risks from GM foods
- The issue of who could be trusted when there is uncertainty and disagreement
- The importance of choice and the freedom to choose through labelling
- The ethics of using animal genes in plants
- The price of GM food
- The taste of GM food
- Impact on developing countries

33. The students also conducted a survey of 53 of their peers (11-16 year olds) within the rest of the school to solicit their views and the findings are presented in Annex 4. Almost 50% of the students did not think GM food was safe to eat and the majority felt GM foods should be separated from other foods.

Conclusion

34. This paper draws together information on consumer attitudes to GM food obtained from work carried out by the FSA since it came into being in April 2000. The work has involved a quantitative survey of many thousands of people and qualitative work involving several hundred. What emerges from this body of information are some general conclusions that can be drawn about consumer attitudes to GM food, the processes by which this information is obtained, and some lessons learned that may be applicable to consumer attitudes to other food issues. These conclusions have been outlined in Annex 7, which proposes the basis of the Agency's advice to Ministers on the outcome of this work.

Emerging patterns

35. The FSA's annual consumer attitudes survey showed that about a third of consumers expressed concern about GM foods, although this has declined since 2000. This large survey is useful in providing a benchmark and analysing temporal trends, but provides little opportunity to examine what lies behind these headline figures. Focus group work with smaller numbers of consumers has revealed that a minority of consumers had firm views (both positive and negative) but that the majority were more neutral although lacked the necessary information on which to base a considered judgement.

36. The more recent qualitative work funded by the FSA has provided an opportunity to examine in more detail consumer attitudes to GM foods and in particular the views of young people and people on low incomes. A number of general conclusions and views consistent across the activities emerged, including the need for information and better labelling to allow consumers to exercise choice; that consumers do not compartmentalise concerns about food from wider issues of environmental biodiversity, whom to trust when there is scientific uncertainty; impact on developing countries and issues around who benefits from GM technology.

37. Each individual activity identified particular key issues. The citizens' jury had confidence in the safety measures but felt that consumers must have choice and also be kept informed regarding developments on GM issues. The school video raised issues concerning price and taste of GM food, the impact on developing countries and who to trust where there is uncertainty. The schools debate raised

issues regarding developing countries, impact on biodiversity, potential consumer benefits and that no food is 100% safe. The discussion groups in Scotland mentioned that the public might be more willing to accept GM foods if they could see clearer consumer benefits. They also had strong views on labelling and availability of information. The Board will wish to note that consumers did not compartmentalise their views, which went further than the Agency's remit.

Lessons learnt

38. The Agency is commissioning an independent evaluation of the work summarised in paragraphs 20 to 33 above. In the meantime, however, it is possible to identify a number of useful initial lessons:

- the work confirms the principle that while large-scale surveys are important in assessing general consumer views about an issue, more selective qualitative research is important in understanding the range of underlying factors involved;
- when they are given the opportunity, consumers are well able to assimilate a wide range of complex information, covering a range of different views, and to use this in formulating their own views;
- methodologies for consumer engagement which enable consumers to gather evidence on the underlying issues can add valuable depth to their consideration of complex issues, especially where significant uncertainty is involved. The schools' debate and the citizens' jury provide two examples of such approaches (comparison between their effectiveness as processes will need to await the full evaluation currently being commissioned);
- the work confirms previous FSA research that just because some groups of consumers may find it difficult to make their voices heard, this does not mean that they do not have views or are unable to formulate them;
- it is difficult for consumers to know where to find the information they need (and information they can trust) before they can reach an informed view about a complex issue;
- consumers do not necessarily compartmentalise related issues in a way that reflects departmental boundaries. Consumer choices in relation to food may thus be affected by issues which go very much wider than immediate safety concerns.

Board Action Required

39. The Board is asked to:

- **comment** on the outcome of the activities taken forward by the Agency, particularly those summarised in paragraphs 20 to 33 of this paper, and the main conclusions from this work (see paragraphs 34 to 38);
- **note** and **consider** the advice of the Consumer Committee circulated as Paper 03/05/04a
- **comment** on the issues the Agency should cover in its advice to Ministers regarding consumer views on GM food (Annex 7). This advice would also be copied to the Public Debate Steering Board.

Minutes of Advisory Committee on Novel Foods and Processes Open meeting

The Advisory Committee on Novel Foods and Processes (ACNFP) held their second Open Meeting in Cambridge on the 13th November. The aim of the meeting was to give the general public the opportunity to meet with the Committee and to discuss some of the issues that fall within the remit of the ACNFP.

Professor Janet Bainbridge, Chairman of the ACNFP, opened the meeting and welcomed those attending. She introduced the Committee members and briefly outlined the remit of the Committee and the work that it does, noting that the Committee's task is to evaluate the safety of novel foods. While the Committee provides a risk assessment, it does not take decisions on risk management.

Professor Bainbridge also noted that there was cross-representation between the ACNFP and other advisory committees, either through *ex officio* positions, or through experts who were members of more than one committee. The Committee has an openness policy which stipulates that all meeting Agendas, Minutes and Papers to be put on the Agency's website. As a result, members of the public are able to forward comments on all novel food applications made through the UK, and any comments are considered by the Committee.

The Chairman explained that the meeting would be divided into three parts. The first would be an opportunity for the floor to ask the Committee questions, including a number that were submitted in advance. The second would be a discussion on the implications of Agency funded research into horizontal gene transfer, and the third would consider allergenicity and its importance in the approval procedure for novel foods.

1 Invited questions

The Chairman thanked those who had submitted questions in advance, and noted that some of the questions were relevant to the later parts of the meeting items and would be discussed at that time.

Q1. Naomi Salmon, University of Wales

"The recent Eurobarometer Poll indicated that 70.9% of European consumers surveyed "do not want" genetically modified foods, 94.6% want the "right to choose," and 85.8% felt that these foods should only be introduced "if it is

scientifically proven that they are harmless." Clearly, if public opinion were the deciding factor, no foods derived from GMOs would currently be marketed in Europe. How, and to what extent, does the ACNFP attempt to take account of differing views regarding the necessity and desirability of food products derived from GMOs through the assessment process in the UK?"

The Committee was of the opinion that as their evaluation of novel foods is in accordance with the terms and conditions of the Novel Food Regulation (EC) 258/97, then survey findings cannot be a primary consideration in any safety assessment. Members stressed that such survey data are outside the remit of the ACNFP, who offer an opinion purely on the bases of the safety data provided by the applicant. However, a role of the Committee's consumer representatives is to remind Members of consumer opinion, and be aware of the perceived desirability of any novel foods.

Ms Salmon queried whether there was adequate consumer representation on the Committee, and whether the role of the consumer representative was compromised because the safety evaluation looked at the safety of a novel food from a scientific basis rather than the perspective of the people that they represented. The Committee's consumer representatives were of the opinion that consumers are adequately represented on the Committee. For the second question, the Committee explained that the consumer representatives and the ethicist on the Committee do their utmost to keep other members informed of consumer concerns during any discussion.

The Chairman summarised the answers stating that many of the points raise broader policy issues that are addressed by the Food Standards Agency, rather than its scientific advisory committees. Ms Salmon agreed, given the Committee's specific remit, but re-iterated that consumer perception must not be overlooked in the overall approval procedure for GM-derived foods.

There were a number of further comments from the audience, advocating the consumption of fresh locally produced foodstuffs and the avoidance of GM-derived foods, and referring to reports from the US that linked widespread health problems with the introduction of GM foods. On the last point, the Committee said that much of the data was anecdotal and that there was little or no scientific information to support such a hypothesis.

Q2. Nigel Rogers Flow UK

"My company manufacturers high pressure processing equipment. High pressure processing (HPP) was originally classed under the novel technology under the

Rules Clause 6 and the Regulations. As we speak there are several tens of thousands of fresh quality processed foods available on a yearly basis in America and Mexico. The technology is now producing probably tens of thousands of litres of fresh products that we have here in the UK and it is spreading around the world. Can we officially use such technology, which is nothing really considering the questions you have been raising on GM. Can we get simple technology out of the novel category once and for all?"

The Committee discussed this question and noted that they were obliged to look at any such technology since novel processes were regulated by same legislation as novel foods, (EC) 258/97. However, irrespective of whether the process fell within the definitions in the regulation, any company producing food using HPP was obliged to ensure that they were not injurious to human health, under the terms of the Food Safety Act (1990).

A number of members of the audience were concerned that HPP is yet another process available to food companies at a time when the consumer is looking for less processing in foodstuffs. Committee Members pointed out that HPP was an alternative to existing processes such as pasteurisation and said that there was no evidence to suggest that processed foods were less safe than unprocessed foods.

Note: although not mentioned at the meeting, the European Commission has discussed the status of HPP with representatives from the EU member states. As a result, it has been accepted that the process does not produce any material change in the composition of the food and as a result does not require further assessment under the novel foods procedures. The Food Standards Agency has informed the company of this.

Q3. Dr Jofey Craig, Royal Society

"How does/would the ACNFP assess the use of a GM product in infant food? How does the ACNFP co-ordinate its role with the Scientific Advisory Committee on Nutrition?"

The Committee advised the audience that any novel foods intended for incorporation into infant formulae would be treated with utmost caution, since it was recognised that safety studies that are normally used to assess risk to the general population do not necessarily apply to young infants. However, to date no such ingredients have been considered and there are separate regulations which deal with infant formula ingredients. The Committee also observed that quality control procedures are in

place in the infant formula industry to ensure that only identity preserved non-GM soya is used.

2 Recently completed FSA research on horizontal gene transfer - implications for the safety assessment of GM foods

A discussion on this research programme was led by Professor Phil Dale, Deputy Chair of the ACNFP and an expert in the molecular biology of plants. Professor Dale explained the context in which the research was commissioned. He reminded the audience that DNA from a wide range of sources is consumed in the normal diet. He stressed that the ACNFP was specifically concerned with any implications for the assessment of the safety of foods derived from GM sources. The committee was therefore particularly interested in the general principles that emerged from the research and whether changes were necessary in the way that GM-derived foods are assessed.

Members of the audience had a range of opinions on the results, although some of their concerns were outside the remit of the committee. ACNFP Members explained that the results were reassuring, noting that there are numerous reports that genes can flow at a low frequency from prokaryote to eukaryote genomes. There was no reason why the presence of a GM construct would increase the frequency, and the research demonstrates this.

A number of possible effects of genetic transfer have been postulated. The committee were of the opinion that this was extremely unlikely to occur, but there was a need for continuing research.

Members also reminded the audience that the Committee's concern when assessing GM-derived foodstuffs was from a food safety perspective. No food can be said to be 100 per cent safe and a balanced approach to risk has to be adopted.

An organic farmer in the audience expressed concern that the committee did not take into account the effect that planting of GM crops would have on the production of organic foodstuffs. The committee explained that, although this issue deserved further discussion, the subject was outside the remit of the ACNFP. Such questions were being actively considered by the Agriculture and Environment Biotechnology Commission (AEBC).

3 Testing of novel foods for potential allergenicity

Discussion on this topic was led by Professor John Warner, a paediatrician and expert in food allergy. JW explained that the scrutiny of any novel food (GM or otherwise) involves a careful investigation of the possibility of allergenicity. The heterogeneity of foods means that a cautious step-wise approach has to be used, in line with recent recommendations from an FAO-WHO Task Force². The ACNFP uses a 'decision tree' approach when considering the allergenic potential of novel foods, although the varied nature of individual applications means that they have to be treated on a case-by-case basis

Professor Warner said that there are no validated tests for determining the allergenic potential of foodstuffs and any analysis requires consideration of information from as wide a range of sources as possible, including previous experience of the extent of allergenicity in related foods, DNA sequence homology with known allergens, and the effect of processing on foods.

The audience invited the Committee to comment on the emphasis on assessment of new GM foods while new crop variants, such as wheat produced using traditional breeding practices, may contain significantly higher proportions of constituents such as gluten and gliadin which are known to cause intolerance but are not assessed. Members were of the opinion that although such foods fall outside the current definition of "novel food" this was an issue that should be looked at. Concerns were also raised about the allergenic properties of hydrolysed and partially-hydrolysed proteins used in certain infant formulae. Members agreed that these products fall outside the scope of the Committee's work.

One questioner noted that products derived from lupin had been introduced prior to the current novel foods regulation (EC) 258/97, and the incidence of lupin allergy only came to light several years after it was first marketed. The Committee was asked whether allergenicity testing in humans was appropriate, in order to avoid a similar situation with other novel foods. It was also reported that lupin flour is increasingly used as a non-GM alternative in a number of foodstuffs, particularly in France and there are concerns that some people who are allergic to peanuts also react to lupin proteins. Members agreed that allergenicity of lupin was an issue, but noted that most foods are allergenic to a greater or lesser extent. In their view, evidence of allergenicity would not necessarily preclude a product from being

² . FAO-WHO Codex Alimentarius Commission ad hoc Intergovernmental Task Force on Foods derived from Biotechnology, March 2002

cleared under (EC) 258/97 providing that there were adequate control measures in place.

Conclusion

The Chairman thanked the Session Chairs and asked for any further comments before the meeting closed. A member of the audience pointed out that GM technology was being used to try and reduce the allergenic potential of certain foods. Another participant pointed out that authorisation under (EC) 258/97 is by no means a rapid process and that there are applications dating from the 1990's that have still not received approval, as questions had been raised about the safety of the foods.

The Chairman closed the meeting, saying that she hoped that those attending the meeting were better informed about novel foods issues and the ACNFP's role in the approval process, and thanked all those had attended and contributed to the meeting.

List of Attendees

ACNFP Members

Janet Bainbridge
(Chairman)
Phil Dale (Deputy
Chairman)
John Warner
Peter Aggett
Hilary Close
Ruth Chadwick
Neville Craddock
James Dunwell
John Heritage

Peter Lund
Alan Malcolm
Clive Meredith

Ian Rowland

Secretariat

Sandy Lawrie ACNFP Secretary
Clair Baynton Secretariat (Minutes)
Chris Jones Secretariat (Minutes)
Mark Boden Secretariat (Microphone)
Adam Secretariat (Doors)
Hardgrave

Nick Tomlinson FSA Assessor
Elspeth FSA (Scotland) Observer
McDonald

Name	Organisation
Ben Ayliffe	Greenpeace
Louise Ball	DEFRA
Mr Bawa	-
Mr Baxter	-
Ian Black	Hutchinsons
Ralph Blanchfield	Institute of Food Science and Technology
Jofey Craig	Royal Society
Dorothy Cullinane	Sainsbury's
Karen Dell	Secretariat to the Advisory Committee on Animal Feedingstuffs
Julia Davidson	Roche
David Godfrey	Nutragen
Mae-Wan Ho	Institute of Science in Society
Karen Holt	Syngenta
Maurice De Billot	Monsanto
Zoe Dunford	Institute of Food Research
Terry Hector	-
Angus Knight	Leatherhead Food Research
Adrian Koster	-
Julian Little	Bayer Crop Science
Susan Miles	Institute of Food Research
Vivian Moses	CropGen
Eva Novotny	-
Heather Pickett	Compassion in World Farming

Olivia Roberts	Royal Society
Graham Rogers	Marlow Foods
Nigel Rogers	Flow UK Ltd
Patti Rundall	Baby Milk Action
Judith Rylott	Bayer Crop Science
Naomi Salmon	University of Wales
Tracy Sortwell	National Federation of Womens Institutes
John Walls	Centre for Environmental Risk
Andrew Watton	Institute of Science in Society
John Wilkinson	Middlesex University

Public dialogue on GM

The public debate is managed by an independent steering board, which is chaired by Professor Malcolm Grant. It is comprised of members of the Agriculture and Environment Biotechnology Commission and a number of independent members from the biotechnology industry and non-Governmental organisations. Meetings have been held monthly, in public. The steering board agreed its work plan in February, which will include high profile regional events, other regional meetings and grass root events run by local networks. Reconvened focus groups further to the foundation workshops carried out at the end of 2002 will be used to debate the issues more deeply. A tool kit comprising an interactive web site, CD-ROM, video and other material will be used for those people who wish to organise their own debate. These activities will be taken forward from May onwards.

Science Review

The science review is being taken forward by the Government's Chief Scientific Adviser, Professor Sir David King, and Defra's chief scientific adviser, Professor Howard Dalton, with independent advice from the Food Standards Agency. The chairs of two of the Agency's advisory committees (Advisory Committee on Novel Foods and Processes and Advisory Committee on Animal Feedingstuffs) are members of the expert panel in their own right (and not as representatives of their committees). The aim of the review is to summarise the current state of scientific knowledge on the key issues, identify the consensus, what the uncertainties are, how these might be reduced, and where there are gaps in the knowledge so as to inform both Government and the public. The panel is comprised of scientists from academic and research institutions, the biotechnology industry and non-Governmental organisations. As part of the review a series of public meetings have been held on GM food, gene flow³ and GM animal feed.

The Agency's advisory committees (as above) will consider and provide advice on the draft text from the subgroups of the expert panel. This text will also be published for public consultation. The Agency's Chief Scientific Adviser, Dr Jon Bell, will write to Professor Sir David King with the Agency's comments. The science review will be

³ Gene flow refers to the potential for transfer of genes from one species to another. This may include transfer from plant to plant, plant to soil bacteria or plant to gastrointestinal tract bacteria.

completed in June. The panel will reconvene in the autumn to discuss the outcome of the farmscale evaluation programme⁴.

Economics Review

The economics strand is being taken forward by the Prime Minister's Strategy Unit and is undertaking a study of the costs and benefits of GM crops. The primary aim of the study is to provide a comprehensive and balanced analysis of the costs and benefits of growing GM crops in the UK, as a contribution to the public debate and to future decisions about GM crops. The study is an open process, involving input from stakeholders and all stages of the study have been published on the web. The outcome of this strand will be published in June.

⁴ The Farmscale evaluations (FSEs) are a three-year research programme that began in 2000. The FSEs were designed to study the effects, if any, on wildlife of the way weed killers (herbicides) are used with herbicide tolerant GM crops when compared with equivalent conventional crops. An independent scientific steering committee, which is independent of industry, has overseen the running of the FSEs.

FSA focus group work on public attitudes towards GM

HALLAM
Planning & Research

Public attitudes to Genetic Modification in Food
A Synthesis of Qualitative Findings

Prepared for Food Standards Agency

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1. Introduction

This document summarises findings about the general public's concerns, understanding and attitudes towards genetic modification, and particularly genetically modified (GM) foods, contextualised by wider research findings on attitudes and concerns about food in general. Taken together, the source studies^{5,6} represent a robust qualitative research sample covering a range of demographic variables. (A detailed breakdown is appended.)

The findings were delivered in March & April 2002, and thus represent the situation obtaining during the early part of last year.

2. Summary of Findings

Context:

The context of evaluation of food issues was a range of concerns about other aspects of life. These included perceptions of a breakdown of law and order and a general feeling of lack of security (both domestic and international), underpinned by a perception of moral stagnation or decline afflicting both individuals and institutions - government, the royal family, financial services companies, the police and the judiciary, medicine and science (the latter impacting on global environmental concerns). Underlying all of these concerns, there appeared to be a profound loss of trust in authority.

With regard to food itself, attitudes and levels of concern varied depending on degree of interest and expertise. The degree of interest in food in general was felt to both fuel and be fuelled by the expansion in the variety of food available, including ethnic origins, 'convenience', 'luxury' and 'healthy' variants (low calorie/fat/sugar/salt...).

Food Safety:

A corollary of this heightened interest was an increase in concern about the safety of food amongst the largest segment identified – the 'ordinary consumer'. This was amplified by a loss of trust in producers, processors and retailers, and by new and on-going 'scares' in media content. CJD/BSE, salmonella in chicken and eggs, and e-coli had highest salience at this time, with some background level of awareness/concern about additives and colourings. Whilst food was felt to be more

⁵ Public Attitudes to Genetic Modification, Cragg Ross Dawson, March 2002 – Tim Dawson

⁶ Food Fundamentals Report, Cragg Ross Dawson, April 2002 – Tim Porter

fun, it was also taken for granted less than in the past and more likely to be interrogated for reassurance about its ingredients and safety.

However, for most, food safety was one element within a constellation of variables and associations embedded within a rich psychology surrounding food. Associations and evaluations included: value, convenience, quality, freshness/shelf-life, allergies, nurture, nutrition, health, interpersonal/intra-familial relationships, roles, status, control and, fundamentally, enjoyment (both in its own right and as a prelude/accompaniment to other sources of pleasure).

For many people, food safety within this constellation occupied a fairly minor place for most of the time, outside of 'urgent' media imperatives. Food was assumed to be fairly well regulated, and safety risks were felt to be small. However, *interest* in this topic appeared disproportionately high, reflecting perhaps the impact of previous food chain deficits/media treatments.

Within this context of low ('real') concerns about food safety, concerns about GM food were found to be very low – a small subset of a subset. People within this sample did not identify GM as a selection criterion for purchase or consumption of food.

3. Attitudes to GM Food

Awareness:

Spontaneous awareness appeared to be fairly low, even within the context of a discussion about food safety, and where discussion of the topic was precipitated spontaneously, it was not perceived as a food safety issue. Rather, comments were value-neutral, and loosely in the area of food production or expanded choice, with some residual memory of GM being an issue because of crop-trial protests a few years ago. (Few people had an accurate recall of the nature of these, attributing them to 'radical environmental activists'). Subsequent lack of media content seems to have allowed the issue to atrophy, leaving only a generalised understanding of the area.

Most felt that they did not know enough about GM or the extent of its use to have strong views on the subject. Feelings about GM were thus largely ambivalent and in the absence of more detailed information, many suspended judgment. However, perhaps reflecting the desire for stability/general xenophobia, given a straight choice with no price/performance benefit most people felt that they would eschew GM foods in favour of non-GM 'traditional' foods.

Information about GM came almost exclusively from the news media and was viewed with robust skepticism. There was considerable mistrust in the media's ability to present facts on this and other food safety issues in a balanced and non-sensationalist light. There appeared to be an impression that little information had come from government, retailers, producers or the medical or scientific professions. The lack of information from these sources was taken as an absence of anything significant to say rather than anything sinister.

With regard to where people felt information could be obtained, trustworthiness and credibility was seen to depend on who it came from. Generally the most trustworthy sources were felt to be organizations that were viewed as independent from government and who had no vested interest in championing GM technology, and/or might suffer a penalty (financial or to reputation) through poor/incorrect advice. These included: leading supermarkets; non-political government agencies; leading scientific specialists as long as their independence was unquestionable; and (possibly) heavyweight current affairs programmes such as Panorama. Least trusted included the press (particularly the tabloids), the GM producers and politicians.

The FSA was mostly an unknown quantity, but the idea of an independent publicly funded body charged with ensuring food safety conjured the idea of a trustworthy and appropriate organization.

Awareness of the extent of use of GM technology in food production, and awareness of GM food on sale was low. Some felt that its presence was likely to be minor, given that they had little awareness/information. Others suggested that GM content was probably widespread and that they were probably eating GM food without realising it, since some manufacturers and retailers (notably Iceland) had made a point of labeling some products/ranges as 'GM free'. (It was apparent that awareness of the position with regard to labeling was low.)

Understanding of GM:

There was virtually universal prompted recognition of the term "GM", with many understanding the abbreviation correctly. (Exceptions tended to be found amongst older women and the lower end of the social scale). GM was generally familiar in two broad contexts: primarily with regard to food and secondarily the environment in relation to GM food crops. There was little knowledge of gene modification in other roles.

Only a small minority (typically the more educated and/or higher social grade) was confident about the scientific basis of GM technology, understanding the process as

manipulating genes to alter attributes in living things. Most saw GM more generally as a process in crop production, with some assuming application in livestock farming.

Aside from a few people who drew parallels with established practices of crossbreeding, conceptions of GM were unclear, but most prompted associations were unfavorable. Commonly held beliefs about the process included exposure to chemicals or radioactivity, or other human (i.e. unnatural) intervention, such associations leading to risk perceptions. Other strongly-felt (though presumably prompted) concerns were more diffuse, centering on the uncertainty surrounding the technology given the lack of long-term assessment (with BSE cited as a potent parallel) combined with unease at the 'unnaturalness' of the process/'GM substances'. Environmental concerns tended to be less widespread, with little sympathy for environmental protesters, but where they did exist they were seen as the more pressing, given the catastrophic potential of contamination of wild species.

Some people expressed concern that the power represented by GM technology may be abused by its exponents, for example that in spite of GM being sub-standard, it would supplant 'natural' foods by weight of marketing force (the benefits going to the producer/retailer in the form of increased profit). The employment of questionable commercial practices by producers in developing economies was also mentioned by some in this context.

There were no observed differences in attitude towards and concerns about GM food across the socio-economic grades in the sample, with all voicing the same types of concern.

The absence of any examples of GM produce causing harm in itself, together with wider usage in, for example, medicine, washing powder and cotton (though these uses were relatively unknown) tended to allay doubts centered on human/personal consumption, presenting GM neutrally as a tool with the potential for benefits.

In terms of benefits of GM technology, people identified potential advantages for both producers and consumers: increased production, especially in the developing world; increased resilience and disease & drought resistance (and thus less dependence on/use of pesticides and cheaper food); improvements in nutritional properties; increased shelf life, consistency, appearance, taste; novel varieties (especially flowers and plants). For some, the main benefits were seen as profitability for producers. Few were aware of benefits in other fields such as medicines and non-food crop production.

Respondents had no confident knowledge of the pattern of GM technology use in other countries, though a few were aware that use in the United States was more extensive and seemingly free of controversy.

Information Requirements:

Given the foregoing, it is perhaps not surprising that demand for information was at a low level. However, once the issue was raised, the range of responses suggested that the need for information would rise if the topic were put more firmly on agenda for whatever reason, such as increased use of GM or another outbreak of media attention. Key questions arising included: what is GM, what does it do, and how? What are the benefits? What are the risks, and how thoroughly have they been assessed? How can people detect GM food/ingredients so as to be able to make an informed purchase decision?

A range of facts concerning GM was used as stimulus for discussion. Key learnings from this included:

- *What is GM?*

A simple explanation of GM reassured even the more skeptical, ridding people of misconceptions about chemicals and radioactivity. Though generally comprehensible, some more basic education concerning genes – their role, and the ‘naturalness’ of genetic material – would have benefited some people. Non-food GM use, especially medical use, was felt to demystify the subject further

- *Is GM being used in food sold in UK?*

There was universal surprise at how little GM food is available in the UK, suggesting to some that it may not be entirely safe/proven, and/or raising the question as to whether the actual extent of use was somehow being deliberately disguised.

- *GM and the food chain*

The paucity of GM products available was clearly a surprise, again suggesting that there may be some uncertainties with the process. The apparent acceptance of GM products in the US was reassuring to many, not least because of the assumption that the US authorities were stricter than our own.

People had difficulty grasping the notion of GM being used in ingredients but not appearing in the final product. Also, some felt that offering reassurance that the refining process removed GM material presupposed that they needed removing and thus suggested that there is something inherently dangerous about the material.

With regard to GM animal feed, people routinely drew analogies with BSE and reassurances that had been given.

-How do we know if GM is used in food?

People were generally reassured by the fact that the presence of GM ingredients must be labelled. The exceptions listed were acceptable to most people but there was some unease concerning the 1% tolerance, which was seen as 'generous'. The accidental presence of GM material suggested to some that producers have insufficient controls, raising concerns.

Labelling distinctions between GM ingredients and an ingredient made from a GM crop but containing no GM material were seen as vague and confusing, with a tiered labelling system suggested, and symbols/icons to make comprehension easier.

- How safe is GM?

Although people were unsure how the safety of GM foods could be assessed, and some had concerns over standards and quality control varying with provenance within the EU, information on testing was widely welcomed.

- What about the environment?

More reassurance was felt to be needed, since there were doubts about DEFRA's ability to assess and police effectively the environmental impact of GM technology and ensure no adverse effects. People were not confident that these things could be achieved, especially with regard to cross contamination. Doubts regarding environmental issues were not assuaged.

An Analysis of the Levels of Consumer Concern about GM Food

Source: Consumer Attitudes to Food Standards 2000- 2002⁷

Concern over Food Safety Issues

In 2002 there was a high level of prompted concern over food safety issues amongst consumers in the UK; 68% of UK adults claimed to be very or fairly concerned about food safety issues. 2002 did see a small but significant decrease in concern compared to the previous 2 years of the survey when 71% of adults had been very or fairly concerned.

Between 2000 and 2002 females had maintained a higher level of concern over food safety issues than males. In 2002, 72% of females claimed to be very/fairly concerned about food safety issues compared to 64% of males. Highest levels of concern have been consistently recorded amongst the age group (36-65) and amongst the higher social groups AB.

Following on from general attitudes to food safety the survey examines concerns with the safety of food types eg meat, fish etc and wider food safety issues eg BSE, Food Poisoning etc. This paper concentrates on concern about the safety of *food with GM ingredients* and the food safety issue of *GM Foods*.

Concerns over Food with GM ingredients⁸

There has been a significant decrease in prompted concern about the *safety of food with GM ingredients between 2000 and 2002*. In 2000, 27% of all adults claimed to be concerned about the safety of *food with GM ingredients*; this decreased significantly to 21% in 2001 and increased but not significantly to 23%, in 2002⁹

Spontaneous concern about *foods with GM ingredients* is very low with only 5% of all adults spontaneously mentioning it in both 2001 and 2002 (this question was not asked in 2000). Spontaneous concern was slightly higher amongst the age group (36-65) and ABs.

The spread of prompted concern across the demographic groups was reflective of concern about food safety in general with concern greater amongst females, middle age groups and ABs. Table 1 shows the demographic breakdown of concern about food with GM ingredients in 2002.

⁷ The Consumer Attitudes Survey is commissioned by COI Communications on behalf of the Food Standards Agency. A UK representative sample of 3100 adults 16+ is interviewed face-to-face annually. The survey tracks changes in attitudes, knowledge, behaviour and awareness of a number of key food related issues.

⁸ Question – Do you have concerns about the safety of any particular types of food? (spontaneous and prompted)

⁹ The decrease in concern in 2001 should be viewed in the context that concern about all specific food issues decreased; a possible hypothesis given at the time for this was the coinciding with the fieldwork with 9/11.

**Table 1: Concern about safety of Foods with GM Ingredients
Demographic Breakdowns 2002**

All	Male	Female	16-25	26-35	36-49	50-65	66+	AB	C1C2	DE
23%	22%	23%	21%	24%	29%	28%	7%	34%	24%	14%

Females; age groups (36-49) and 66+ and social group DE have been the main drivers of the decrease in concern since 2000. Although decrease in concern has been seen across all demographic groups, females; age groups (36-49) and 66+ and DEs are the only groups where the decrease has been significant. The shaded areas in table 2 show where the significant changes occurred.

Table 2: Concern about the safety of Foods with GM ingredients

Significant changes 2000-2002

	Females	36-49	66+	DE
2000	29%	35%	24%	21%
2001	22%	26%	11%	23%
2002	23%	29%	7%	14%

Concern with GM Foods¹⁰

There was a significant decrease in consumer concern about *GM foods*, between 2000 and 2002. In 2000, 43% of all adults when prompted claimed to be concerned about *GM foods*, by 2001 this had seen a significant decrease to 38% and in 2002 a further, although not significant fall to 36%.

Spontaneous concern with *GM food* as a food safety issue has been measured since 2001; there has been no significant change in levels of spontaneous concern. Spontaneous concern about *GM food* remains low, with 7% spontaneously concerned in 2002, compared to 6% in 2001. Table 3 shows the demographic breakdown of spontaneous concern. The pattern remains largely unchanged since 2001 with the exception of (C1C2)s where there has been a small but significant increase in spontaneous concern from 6% to 8%.

**Table 3: Spontaneous Concern about GM Food
Demographic Breakdowns 2002**

All	Male	Female	16-25	26-35	36-49	50-65	66+	AB	C1C2	DE
7%	7%	6%	4%	8%	10%	9%	2%	9%	8%	4%

Concern with *GM foods* also follows a similar demographic pattern as for concern over food safety issues in general. Prompted concern has been greatest amongst females; age group (36-65) and higher social groups.

¹⁰ Question – Thinking more widely, not only about particular types of food, are there any issues related to food that you have concerns about? (asked spontaneously and prompted)

Since 2000 most demographic groups have seen a significant decrease in concern with *GM foods*; the exception being (50-65) age group. Table 4 shows the levels of prompted concern between 2000 and 2002, the shaded areas highlight significant changes from one year to the next.

Table 4: Prompted Concern about GM Foods Demographic Breakdowns 2002

Year	All	Male	Female	16-25	26-35	36-49	50-65	66+	AB	C1C2	DE
2000	43%	40%	46%	30%	48%	52%	44%	38%	55%	41%	40%
2001	38%	35%	41%	32%	41%	42%	43%	29%	50%	41%	27%
2002	36%	35%	37%	25%	39%	43%	45%	21%	43%	39%	26%

Does Concern about GM Foods affect eating habits?

In 2002 almost three-quarters (74%) of those who were concerned about the issue of GM Foods claimed that it did affect their eating habits; this was an increase, although not significant, from 72% in both 2001 and 2000. Of the 74% claiming concern did affect eating habits, the majority claimed it affected eating habits a little (40%) compared to 35% a lot.

Again the pattern of affect on eating habits, in terms of demographics, reflected those for concern. Females; age group 36-49 and ABs were more likely to claim that eating habits had been affected by their concern about GM Foods. Table 4 shows the demographic breakdown from 2002 for those claiming that concern affects eating habits. This pattern has remained largely unchanged since 2000, with the only significant change amongst the 26-35 years age group. In 2000 68% of the 26-35 age group claimed eating habits were affected by concerns about GM food this had increased significantly to 78% in 2002.

Table 4: Does concern about GM Foods affect Eating habits? Demographic Breakdowns 2002

All	Male	Female	16-25	26-35	36-49	50-65	66+	AB	C1C2	DE
74%	70%	79%	62%	78%	80%	76%	63%	79%	75%	68%

Background information on the FSA new qualitative activities

Schools Debating Competition

The Agency sponsored the Durham Union Society Schools Debating Competition. This competition has been hosted by Durham University for the past 14 years and attracted approximately 200 students from a mixture of state and private schools across the UK and a Canadian school. As a sponsor of the event the Agency set the motion for the final of the competition and also provided a bursary, which enabled seven schools who would not have otherwise taken part to attend the event. The motion - 'This house would eat genetically modified foods' - was debated by the four teams who reached the final of the competition. The winners of the competition, selected by a panel of independent judges for their skills in debating the issues relating to GM food, were from Robert Gordon's School in Aberdeen who argued against the motion. After a floor debate, the motion was passed by the majority of students. The video of the final debate can be accessed from the FSA web site. Two members of the FSA Board, Richard Ayre and Robert Rees, attended the debate in order to listen to arguments about GM food in the formal debate and the views of the young people expressed in the wider floor debate.

The key themes raised in the debate were the impact of GM food and crops on consumers, the environment, farmers and developing countries. The proposition considered that GM foods should be controlled in the same way as other foods, that GM crops and food could benefit society and that people should be free to make an informed choice. The opposition highlighted the potential health risks from GM foods, the threat to biodiversity from GM crops, and developing countries lack of need for GM food aid or crops.

Arguments for the motion

- GM foods should be treated as normal without the need for further food legislation.
- No evidence that they are a special case.
- The current regulatory system has been shown to work.

- No scientific evidence of harm from GM foods.
- Experiments feeding GM potatoes to mice, that purported to show risks of GM food, have been disputed.
- No one has died yet from GM foods, unlike Salmonella.
- The World Health Organisation considers that the evidence supports the safety of GM food.
- No food can be considered 100% safe.

- GM is good for developing countries and the benefit outweighs any small risk.
 - If we eat GM food then farmers from developing countries would be more likely to grow GM crops, which might benefit them, eg by surviving drought better.
 - GM crops could give farmers greater self-sufficiency and even allow them to export food.
 - GM crops could build up the economy because fewer farmers would be needed.
 - Farmers won't buy seeds that are not beneficial to them.
 - The initial period of high investment on GM in the West will benefit developing countries in the future.
- GM crops could benefit UK farmers by making farming more viable because GM crops are more resistant to pests and diseases and less likely to fail, so making production cheaper.
 - GM crops benefit the environment because fewer pesticides are used.
 - The impact on biodiversity is over-stated because current crops are not very diverse anyway.
 - GM only speeds up the process of natural cross-pollination.
- Consumers could benefit from GM by ensuring a constant supply of cheaper food with fewer pesticide residues.
 - Students want cheap food.
 - The decision should be given to consumers as to whether to eat GM food, based on informed choice.
 - GM foods are in the consumers' interest and can benefit society, eg rice with increased Vitamin A.
- There should be a choice for people who want to eat GM foods.
 - Main problem for acceptance is that GM foods are new.

Arguments against the motion

- The health risks from GM foods cannot be reduced in the same way as other risks from eg BSE and food poisoning.
 - We don't know enough about GM food to be able to say that it is safe to eat.
 - There is no evidence of its safety because sufficiently stringent tests have not yet been conducted.
 - The EU's decision to phase out antibiotic resistant marker genes demonstrates that there are safety risks.
 - Allergens could be introduced into food.
 - Consumers won't know what genes are in their food.
 - GM food is different from conventional food and therefore needs to be controlled in a different way.
- Unnatural crops could lead to environmental scares. Ecosystem is being changed in the United States as demonstrated by effects on monarch butterflies.

- GM allows cross-breeding that wouldn't happen in nature.
- There is not enough space in the UK to separate GM and non-GM crops therefore cross-pollination can't be stopped.
- Cross-breeding could lead to super-weeds.
- GM crops would reduce biodiversity and lead to a risk of crop devastation.
- GM crops add to the existing risk from pesticides.

- Current levels of food supply in the world exceed demand and so there is no need to send GM food as aid to developing countries.
- People in developing countries will not believe that GM food and crops are safe just because the developed world eats GM food.
- Farmers in developing countries who are dependent on aid will not have a choice if all aid is GM.
- If supply increases lead to falls in the price of produce then farmers will receive less money and so will be no better off than now.
- GM crops are not a benefit to developing countries as they are capital intensive.
- GM crops benefit multi-national firms.
- Only well-off farmers can afford them.
- Terminator genes in GM crops prevent seed saving and forces farmers to buy seeds each year.
- GM seed commercialisation can lead to "bundling" with other products that the farmers have to buy from the same firm, which could lead to economic damage for the farmers.

- Choice is important.

Points made in Floor Debate

- Some farmers in Pakistan went into debt to buy GM seed but then couldn't sell the crops for enough money to afford the next year's GM seed.
- GM technology violates natural law for economic gain.
- Fair trade and fair prices should be enforced, then GM aid wouldn't be needed by developing countries.
- GM food is unpredictable.
- GM crops will only worsen developing countries debt to First World banks.
- Cross-contamination between GM crops and other plants has happened in the US.

- GM should be given as aid where it could save lives.
- Can't prove something safe until proved otherwise. The burden of proof is with the opposition.
- If GM foods are banned then we should be consistent and ban other synthetic foodstuffs.
- GM aid and crops will not wipe out local infrastructure.
- Only GM crops may be able to survive in sub-Saharan Africa.

- There should be a pharmaceutical level of testing on GM food combined with labelling to give consumers information.
- Labelling should be used to give choice.

Citizens' Jury

The FSA commissioned Opinion Leader Research (OLR) to run a Citizens' Jury on GM Food. This is a deliberative process allowing informed debate and decision making. The Citizens Jury model enables citizens to explore the issues in depth and make informed decisions for several reasons:

- Time to understand and debate the issues arriving at informed views
- Sufficient information will be presented to the jury as needed to brief them on the topic and the alternative viewpoints
- The jury will hear evidence from experts/people representing different interests
- Opportunities for participants to discuss with witnesses and amongst themselves
- The status of the 'group' is independent of the commissioners and any other interested parties

A jury of 15 members of the public participated in this Citizens' Jury and considered the question: "Should GM foods be available to buy in the UK?"

Professor Kathy Sykes, the new Bristol University Collier Professor in the Public Engagement of Science and Engineering, which seeks to communicate scientific and technological research in a user-friendly way to the public, introduced the three-day event in Slough. She is also one of five presenters of BBC 2's Rough Science programme.

Citizens' Jury members were recruited by OLR using well-established methods and reflected the local population. They heard evidence from a wide cross-section of experts in the field, and were able to question the experts and ask for additional evidence, before formulating a response. The jury were also asked to explain the reasoning behind their decision, including any conditions or recommendations.

Witnesses from the following organisations presented evidence to the Citizens' Jury and answered questions from jury members: Institute of Food Research; Genewatch; United States Food and Drug Administration; Sainsbury's; Europa Bio; New Scientist; Consumers' Association; Friends of the Earth; Aventis Crop Science & Agricultural Biotechnology Council; Somerset County Council; BEUC. Biographies of all witnesses and details of the sessions in which they presented evidence are available on the FSA website: www.food.gov.uk/gmdebate. Witness presentations were published on the FSA website as they took place.

To ensure transparency, the Citizens' Jury proceedings were broadcast live on the internet and all evidence presented to the jury will be published on the FSA website.

The jury, socially representative of the population of Slough, included an accountant, two students, a housewife, taxi driver, driving instructor, and a minister of religion.

Thousands of people watched the live internet broadcast of the Jury on the FSAs website over the three days, with over 1000 viewers watching the jurors deliver their verdict to the FSA. The Jury's deliberations in reaching a verdict are available to watch as Video-on-Demand on the Food Standards Agency website: www.food.gov.uk

School video

The FSA commissioned a professional film-maker to work alongside a group of secondary school students at Acland Burghley, North London to produce a short video on GM foods. Using the technical and editorial support of the film-maker, the students were asked to represent the views of their peers on the topic. Acland Burghley was chosen as it is a large, inner city comprehensive with a diverse school population.

The production of the video is the work of the students themselves (with support from the film-maker and their tutors) from the original storyboarding through to editing and the views expressed were their own. They were given a completely free hand to reach either a particular conclusion or represent a number of differing views.

During their research the students drew on the work of their peers in the science department and with the help of their science teacher were able to understand the rudiments of gene-splicing. The FSA input has been to supply copies of the 'GM food opening up the debate' booklet at the school's request. Apart from the FSA booklet, we understand that information incorporating a range of views were used by the students during the making of the video which included, materials from Consumers' Association, BBC, Friends of the Earth and Greenpeace websites and the 5 Year Freeze leaflet.

Although most of the filming took place on school premises, additional filming was undertaken at a local health food store, a local café and a local supermarket.

Nearly all the activity was completed during the normal school day with some additional input in out of school hours.

The students also conducted a survey of 53 of their peers (11-16 year olds) within the rest of the school to solicit their views and the findings are presented in the video and outlined below:

Q1 Do you think GM food is safe?

12 - Yes

24 – No

17 – unsure

Q2 Do you agree with the genetic modification of food?

10 – Yes

29 – No

14 – unsure

Q3 Would you ever eat food that had been genetically modified?

19 – Yes

27 – No

7 – unsure

Q4 Do you think that GM foods should be separated from other foods?

44 – Yes

3 – No

6 – unsure

Q5 Do you see GM foods as part of the future?

31 – Yes

11 – No

11- unsure

Qualitative discussion groups with young people and people on low incomes, Scotland

The Food Standards Agency Scotland held a series of qualitative discussion groups as part of the GM debate, targeted at young adults in the tertiary education sector and low-income consumers, to consider issues of acceptability and consumer choice. Four discussion groups took place during March in Glasgow, Edinburgh and the Scottish Borders. FSAS commissioned the Scottish Civic Forum (SCF) to organise and facilitate the groups. The SCF is a membership organisation committed to building a culture of active citizenship, in which Scottish people have opportunities to be more involved in shaping policies that may affect them. The Forum exists to build links between Scottish people, their Parliament and between different parts of civic society, and its role is to support small and poorly resourced organisations in engaging with Government. The process is described in the Executive summary drafted by the Scottish Civic Forum in Annex 6.

The innovative approach of using the SCF as organisers and facilitators and an independent external speaker ensured that those contributing were impartial and independent. FSAS staff were on hand to provide any factual clarification where required.

The SCF found it more difficult than anticipated to attract participants to the discussion group meetings. However, as planned, a total of 50 people took part in the four discussion groups, and the exchanges were generally lively and informative. Most of those who took part found the groups interesting and challenging, and reported being much better informed about the topic as a result.

Executive Summary of Report from Citizens' Jury drafted by Opinion Leader research

**FOOD STANDARDS AGENCY
CITIZENS' JURY ON GENETICALLY MODIFIED FOOD**

EXECUTIVE SUMMARY

The Question **SHOULD GM FOOD BE AVAILABLE TO BUY IN THE UK?**

Dates: 3rd, 4th, 5th and 7th April 2003

Location: Slough

Jurors: 15 members of the public

Key areas and speakers: GM Food Briefing Session Professor Kathy Sykes,
University of Bristol

GM Food and Safety	Professor Mike Gasson, ACMSF Dr Sue Mayer, Genewatch James Maryanski, Food and Drug Administration (USA)
GM Food and the Consumer	Andy Coghlan, New Scientist Sue Davies, Consumer's Association Simon Barber, Europa Bio Alison Austin, Sainsbury's
GM Food and Society	Pete Riley, Friends of the Earth Paul Rylott, Bayer CropScience
GM Food and Choice	Stuart Musgrove, Somerset County Council Beate Kettlitz, European Consumers Organisation

The Process

Fifteen jurors selected randomly from the electoral register in Slough, and chosen to represent the demographics of the local area, came together for three and half days to consider whether GM food should be available to buy in the UK. During the three days the jurors heard from, and questioned expert witnesses from both sides of the argument and discussed various related issues in small groups and plenary sessions. The issues considered included effects on human health, potential changes to the environment, opportunities and threats to UK farming and the economy, potential benefits and disadvantages to different consumers and issues surrounding current and future labelling of GM food.

The jurors spent the afternoon of the final day drawing together their conclusions and forming the Jury's verdict. Three jurors were then elected to present the findings of

the Jury to Dr Jon Bell, Chief Executive of the Food Standards Agency, and Neil Martinson, Director of Communications of the Food Standards Agency.

The Verdict

A majority of **nine** jurors concluded that GM food should be available to buy in the UK. A sizeable minority of **six** jurors felt that GM food should not be available to buy in the UK.

Key Findings

Below is a summary of the reasons why nine jurors feel that GM food should be available to buy in the UK:

- There are trace elements of GM products in processed foods currently on sale in the UK
- The Food Standards Agency and the Government are trusted to make a responsible decision in relation to the sale of GM food and to monitor it effectively
- Although there may be risk associated with GM foods, there is a need for the United Kingdom to keep up with the rest of the world. Allowing GM foods to be sold in the UK would be a form of progress
- There are potential benefits of GM food for consumers' health and the environment.
 - Food gets broken down in the gut and there is very little chance of DNA getting into the body
 - The consumption of GM food in other countries such as Canada and the USA has acted as a trial. There has been no known deaths or illness related to GM food in those countries
- GM foods will offer the consumer other benefits including reduced prices, improved and consistent quality and increased variety and choice
- There is not sufficient proof regarding the negative effects of GM foods on either health or the environment, to make a case against allowing GM food to be sold in the UK
- More people would agree to the sale of GM food if they knew more about genetic modification and had access to the relevant information
- Making GM food available to buy in the UK will enhance customer choice and clear labelling will allow consumers to choose not to buy GM food

“There always will be an element of risk. We will always have a risk whatever we try but we must try new technology”

“There is very little risk and in the long term I think the benefits will be astronomical”

“We feel we should, and do, trust the Food Standards Agency and the Government”

Below is a summary of the reasons why six jurors feel that GM food should not be available to buy in the UK:

- Politicians and the Government cannot always be trusted to do what is best for the country
- Consumer choice could be threatened
 - There is a possibility that those on low incomes will be forced to buy the lower priced GM food without full knowledge of the possible implications
- There is not presently enough information available to make a confident decision in favour of GM food and therefore we should err on the side of caution
- How far are we going with GM technology? Scientists and society might not know when to stop
- There are potential long-term damaging effects on the environment
- Not enough research has been carried out into potential health problems caused by the consumption of GM food – particularly in relation to toxicology and allergies
- GM food is not necessary and there is not enough evidence of the benefits it might bring
- Genetic modification of food is dangerous because it is “messing with nature”
- We might lose original or conventional food and lose control of what we are eating

“There are negative things about where mankind has interfered with nature. We should just wait a little bit longer- so we know that it is completely safe”.

“I don’t trust the politicians – the Government has broken so many promises”

“On the first day I was for progression but I think about the ethics and from knowledge I totally think we should wait”

“We are fine without all this GM nonsense“

The jurors unanimously agree on wider issues related to GM food:

- More time is needed to understand the long-term environmental implications of GM crops before farmers start to grow them in the UK
 - Growing GM crops in the UK would be irreversible and that it might eventually reduce choice
- There is very little information available to the general public about GM food. If it is to be widely available consumers need to understand all the related issues before choosing whether or not to buy it
 - The public needs to know what GM means and what tests are being carried out to ensure it is safe
 - The public needs to know more about the regulating bodies and their responsibilities
- There should always be a choice between GM, non-GM and organic food and labelling is an extremely important issue in relation to choice
 - There should be a GM logo on every product that contains GM foods or derivatives, or that has been made using a GM processing agent

- There should be clear labelling on meat and milk from animals that have been fed using GM foods
- There are ethical concerns about the progress of GM food and how far we are going to take this scientific process
 - There is particular concern about genetically modifying animals as well as crossing barriers between animals and plants

The Jurors' Experience

The jurors all enjoyed the experience of sitting on a Citizens' Jury and were confident that they had heard sufficient and informative evidence from a varied and balanced range of witnesses.

After the jury 12 jurors thought that GM food is a very important issue and all jurors agreed that a Citizens' Jury is a good way of involving the public in issues like GM food. The majority believed it would have an affect on what happens in the future.

"Yes, I was pretty naïve about the whole thing until I listened to the witnesses. Now I can ask a lot more questions, which has enabled me to come to a better conclusion and give a proper verdict"

"We have had an education over the last few days. Exposure in the media has been very negative which has biased people so really the awareness that we have seen should really be going out there"

"We have had the chance to get both sides of the argument and we have been lucky to have such a concentrated education and can make such an informed decision"

"There have been a lot of grey areas which we have been forced to look at but we've all put heart and soul into thinking about it"

"Yes, the more we heard, the more we were able to understand. It was like a jigsaw falling into place"

"This is real democracy – letting the layman have their say"

Report from the Scottish Civic Forum

	<p>Scottish Civic Forum 21 Queen Street Edinburgh EH2 1JX</p> <p>Tel 0131 225 6789 www.civicforum.org.uk</p>
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Consultation March 2003

Discussion groups on attitudes to GM food and consumer choice

Report edited by Peter Reid, with contributions from Debbie Wilkie and Niall Hermiston.

Executive Summary

Why is the agency doing this – The UK government is carrying out a wide-scale public debate on GM. As its independent contribution to this debate, the Food Standards Agency has sought to establish the views of consumers to GM food. Within Scotland, the Food Standards Agency Scotland (based in Aberdeen) has sought to target low income groups and people in Tertiary education, to establish the views of these seldom consulted groups.

The role of the Scottish Civic Forum – In order to ensure the independence of the process it was decided by the Agency Scotland use the Scottish Civic Forum. The Forum was established at the same time as the Scottish Parliament, and aims to increase the amount and effectiveness of participation in the running of Scotland. In particular the Forum engages with civic groups, and facilitates their engagement with the Scottish Parliament and Scottish Executive. The Forum has established itself as a trusted and non-partisan voice in a wide variety of debates, impartially reflecting the views of civic society.

Form of events – The Food Standards Agency in Scotland recognised that the debate on GM had become polarised, and therefore sought to provide an impartial

briefing and then seek the views of people who had not previously engaged in the debate. Those attending were provided with a short briefing paper, the FSA booklet “GM food – opening up the debate” and a presentation by Dr Donald Bruce. Dr Bruce is the Director of the Church of Scotland, Science, Religion and Technology Project which looks at the ethics of technology for a new millennium. He is also joint editor of the acclaimed book “Engineering Genesis” which impartially pulls together the differing strands of the debate on GM. In addition to Dr Bruce, FSA staff were in attendance at events to answer any technical questions that participants might have. The briefing material, both written and oral was repeatedly praised as being clear, interesting and unbiased.

The event was deliberately structured to allow people a variety of ways in which to convey their views. These included an initial session using electronic communicators to qualitatively assess people’s existing knowledge on GM prior to the discussions, and their initial views on consumer choice, full “plenary” sessions of the whole group, where a facilitated discussion took place. Breakout sessions were also used where smaller groups worked with a facilitator. Within the breakout sessions, attention was focussed on two areas, to stimulate discussion, around whether GM food should be available and whether consumers felt they could make informed choices.

Although there was one strongly hostile response from an Edinburgh Health Inequalities worker when contacted in relation to the events, that the Agency had already made up its mind on the issue and he would not legitimise its actions by participating, in general those contacted were either enthusiastic about promoting it, or did not see the topic as being of sufficient interest to be worth their while promoting.

Strong efforts were made to promote the events as widely as possible and efforts were made to reduce any barriers to attendance, by offering to fund travel, childcare, or even organise minibuses for groups to attend. Despite this extensive promotion of the events to relevant groups, the forum had difficulty in attracting interest to the initial events, so minor modifications were made.

The two main events, Anniesland College (25 HNC students of Social Care and Counselling) and Drumchapel (18 low income/disadvantaged people targeted by an external contractor) were supplemented by smaller events in Edinburgh and Galashiels (Borders) where participants were generated through contacts with local civic organisations.

The topic of GM Food did not initially prove to be of interest to people in the target groups, although some contacts outwith the target groups did find the topic of interest. It therefore seems fair to conclude that this is not a subject that immediately concerns people within these groups. This impression is broadly confirmed by responses at the events.

Key Findings – Findings are inevitably qualitative, and can be repetitive and contradictory. A full analysis of findings is provided in annex, however strong messages were clear

- **strong views once issue is raised** – although this was clearly not a subject that people initially had a strong interest in, once briefed, people quickly engaged enthusiastically with the variety of technical and ethical issues involved, bringing in their previous knowledge of a variety of press stories and wider issues. Parallels have been made with the issue of Privacy and Data Sharing <http://www.cabinet-office.gov.uk/innovation/2002/privacy/report/annex-c.htm>
- **Safety** – opinions on safety ranged very widely, from a complete confidence in the safety of GM foods, to recollections of experiments on rats where their brains disintegrated. The example of BSE was frequently cited, and had led to or fostered concerns about changes in food processes, and side effects. It had also led to a distrust of science and government. Many people were concerned about a lack of evidence and the limitations of existing evidence and animal testing, it was widely expressed that long term testing and monitoring was required.
- **Choice** – once again a range of opinion from those who would avoid GM under any circumstances, to those who were uncomfortable buying GM, and those who simply bought on the basis of cost. There were also general observations that shoppers would always have priorities above GM and that choice was a luxury. Concerns about a lack of choice were expressed by coeliacs and those who wanted to buy organic produce. There was also a view that through cross pollination and lack of segregation it would become impossible to avoid GM. Finally there was strong support for clear labelling of GM foods supervised by the government, and the feeling that labelling (and the removal of GM products from supermarkets) had helped stigmatise GM. It was also felt that GM producers should bear the costs of labelling and segregation.
- **Benefits** – possible benefits ranged from ensuring the survival of the banana through GM, reducing allergies, reducing pesticides, low cholesterol foods, and improving shelf life. However the overall view was that GM offered little benefit to UK consumers. Clear benefits were seen to science and the UK research base. Although GM was not perceived to offer benefits to Scottish farmers, potential benefits were seen for farmers in the Third World. These ranged from making more food available, adding vitamins to food, or growing food in previously infertile area. However this was countered by views that the problems of the Third World were not as simple as a lack of food, but were problems like poor government and economics.
- **Concerns** – a wide variety of concerns were expressed, for example gene transfer, cross pollination, and unwanted side effects. There was also a general perception that GM was unnatural and it was compared to cloning. Concerns were also expressed that greed was driving this issue, with it benefiting producers over consumers and further concentrating wealth and power. There were strong concerns over the long term effects of GM products, and unease about where the technology would lead in future.
- **Information** – there was strong support for finding out more about GM, but it had to be provided in an unbiased and accessible format. There remained a general distrust of government on the issue. People welcomed the impartial and informative format of the event that they had attended.

Common themes arising from the more recent Food Standards Agency's work on consumer attitudes to GM food

The recent qualitative work taken forward by the Food Standards Agency has shown that most people do not have entrenched views (pro or anti) on GM foods and that through providing information the activities have produced thoughtful debate and a balanced opinion. In comparison the simple quantitative surveys, which tend to provide a yes or no answer, do not reveal this richer texture. The following points represent common themes, which have been raised by participants during the schools debate, the citizens' jury, the school video and the Scottish work with young people and those on low incomes. A range of views and concerns were obtained from these activities.

The Board might wish to consider including some or all of the points below in the letter to Ministers outlining the outcome of the Agency's activities.

- *Consumer choice* – consumers want an informed choice between GM, non-GM and organic; they also felt that it is essential that labelling is clear – possibly by using a logo to allow GM ingredients to be clearly identified. Consumers also questioned whether GM food was necessary although some also considered that it could bring consumer benefits in the future in terms of nutrition and quality
- *Information and education on GM issues* – consumers considered that basic facts about what genetic modification involves and how it is done would benefit most people. Many considered there is very little public information about GM foods. There was uncertainty as to which information sources could be trusted and a need for this information to be unbiased and accessible. Concerns were raised about how far genetic modification might be taken, particularly regarding GM animals.
- *Confidence in safety measures* – consumers considered that further information on the safety tests carried out on GM food needed to be made publicly available and that they wanted to know more about the regulatory bodies who take forward the assessment and approval process. There continued to be concerns about who to trust where there is uncertainty; the BSE crisis had left some people with

a distrust of scientists and Government. However, there was also a degree of confidence in current safety measures.

- *Monitoring of GM foods* – concerns were expressed by consumers regarding the potential long-term effects and uncertainty of consuming GM foods. Some felt that there is not sufficient proof of the effect of GM foods on health or sufficient research into potential health problems by consumption of GM food. However there was recognition that GM foods have been consumed outside of the EU for a long period with no indication of any health problems.
- *Impact on the environment and biodiversity* – these issues represented the areas of most concern to consumers, including those who were generally receptive to the consumption of GM foods. Although not within the Agency's remit it is clear from this work that consumers do not compartmentalise GM issues into separate topics and consumer acceptability of GM foods is linked to perceptions as to the environmental impact
- *Impact on developing countries* – again, not within the Agency's remit but throughout these activities the issue came up regularly. Again, consumers have a very wide range of views on these issues both as to perceived positive benefits in relation to economic effects and negative impacts with regard to sustainability.