Consumer attitude and market responses to GMOs, viewpoint of the stakeholders

Co-Existence Choice or Denial?

S. Barber

Coexistence of genetically modified, conventional and organic crops – freedom of choice

Vienna, 4 – 6 April, 2006

Plant Biotechnology Unit of EuropaBio

EuropaBio

60+ Corporate & Associate Members
25 National Associations (>1500 members)
Red, white and green

http://www.europabio.org

Plant Biotechnology Unit (green)

Arcadia BioSciences
CropDesign
Bayer CropScience
BASF Plant Science
Dupont/Pioneer HiBred
Dow AgroScience
KWS
Limagrain Group
Monsanto
Syngenta

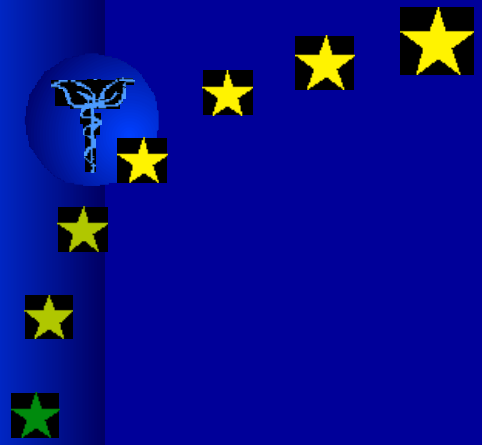
Simon Barber

Farm Worker (1966)
University in UK,
Agriculture/Botany/Ecology
Ag. Extension in Zambia
Post Graduate/Canada
Weed Science/Ecology

1982

Plant Breeding/Canada
Plant Biotechnology
Regulation/Canada
Biotechnology Regulatory
Harmonization/OECD
EuropaBio, Brussels (1999 -)

2006



Choice - it is quite clear:

Some groups do not want to permit choice – their objective is to deny choice

– *NO CHOICE*

- Certain EU Member States have imposed “bans” on EU approved products, without providing scientific evidence to support these
  - *thus breaking the laws MS’s established through co-decision*
- Certain regions in EU Member States have declared themselves “GM-free”
  - *thus breaking the laws MS’s established through co-decision*
- Certain EU Member States have drafted disproportionate and discriminatory rules around coexistence
  - *thus breaking the laws MS’s established through co-decision*

– *NO CHOICE*

Certain international Non-Governmental Organisations have stated “no choice” policies

“……..

for the protection of oceans and ancient forests

- for the phasing-out of fossil fuels and the promotion of renewable energies in order to stop climate change
- for the elimination of toxic chemicals
- against the release of genetically modified organisms into nature
- for nuclear disarmament and an end to nuclear contamination.”

http://www.greenpeace.org.uk/contentlookup.cfm?CFID=4489303&CFTOKEN=39802739&SitekeyParam=C-A

“……..

6. Recommendations

Friends of the Earth Europe is calling for:

- An EU-wide ban of GMOs currently authorised for cultivation and a moratorium on all GMO cultivation until an EU law preventing contamination and establishing strict liability is in place
- In-depth stakeholder consultation on ……”

http://www.foeeurope.org/publications/2006/contaminate_or_legislate.pdf

– *NO CHOICE*

Certain National Non-Governmental Organisations have stated “no choice” policies

“……..

What is the Soil Association (*United* Kingdom) doing?

The Soil Association, which certifies over 70% of the organic food sold in the UK, is strongly opposed to GMOs in food. . ……

……..“

http://www.soilassociation.org/web/sa/saweb.nsf/ed0930aa86103d8380256aa70054918d/d26986bbd35c25a8802570fa005c0ea0!OpenDocument

The EU's lawmakers are pro-Choice

Co-decision based EU law:

- Directive 2001/18/EC – Deliberate Release Directive
- Regulation (EC) No 1829/2003 GM Food and Feed Regulation
- Regulation (EC) No 1830/2003 GM Traceability and Labelling Regulation

Provide for choice through:

- Approvals of safe products for cultivation, import, food and feed use
- The establishment of an EU community labelling threshold of 0.9%
- Consumer choice through mandatory labelling and traceability

Coexistence is not new

- Coexistence, a matter of product value (economics), has been practiced by farmers and the food/feed chain for centuries
- The need for coexistence measures are “market” driven
- Coexistence of different products, and products of different processes, is managed through setting “tolerance” levels for one product in another:
  - a *ZERO* threshold is unattainable
  - agreed upon thresholds are dependent on acceptability of cost

Coexistence of GM and non-GM

- Is not about safety
- The need for coexistence measures are "market" driven – GM crops will be the same
- Coexistence works both ways – mutual cooperation between farmers has managed this, and will do so with GM
- Farmers should be responsible for meeting their own "self-imposed" standards for GM if these are more stringent than those under legislation
- GM crops don't introduce new liability issues:
    - existing systems defining the boundaries of negligence and due diligence work to enable the coexistence of different crops
    - the same will be true of GM and non-GM crops
- Experience of 10 years of GM crop production shows coexistence is possible in the EU
- The growing science base (Commission's JRC study and others) show that coexistence is possible in the EU

Coexistence of GM and non-GM

The Spanish experience shows this:

- Cumulatively 250,000 hectares of Bt maize grown over past 8 years
- Farmers have experienced economic benefits from growing this
- Produce has been used as animal feed (normally not segregated from non-GM maize feed)
- Some cooperatives have maintained two separate processing chains to provide non-GM feed to customers
- Coexistence has been well managed

- Where are our Spanish farmer colleagues with experience?
- Have they been given an opportunity to share their 8 years' experiences?

Coexistence

How do we gauge consumer attitudes?

TWO “R” words

- Reason
- Rigour

How do we gauge consumer attitudes?

EuroBarometer report "Social values, Science and Technology"
Fieldwork : January - February 2005

- European society is supportive of biotechnology and "high-tec" agriculture

Publication : June 2005

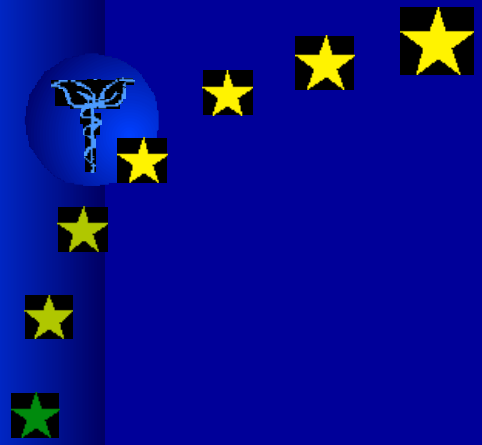
Source questionnaire: Q13

- European citizens are on the whole open to the advances of new technologies and are confident of their positive effect on our way of life in the next 20 years -

On the whole it would seem that European citizens are receptive to the advances of new technologies. In all of the areas covered in this question (with the exception of nanotechnology where the no-response rate was high in all countries), a majority of respondents at the EU level declared their belief that the development of new technologies will have a positive effect on society in the next 20 years.

Q13. I am going to read out a list of areas in which new technologies are currently developing. For each of these, do you think it will have a positive, a negative or no effect on our way of life in the next 20 years? Response: **POSITIVE EFFECT**

	Solar Energy	Computers and Information Technology	Biotechnology and genetic engineering	Space exploration	The Internet	Nuclear energy for electricity production	Nano-technology	Mobile phones	New energy sources to power cars	Air transport	Military and security equipment	High speed trains	Medicines and new medical technologies	High-tech agriculture (Agriculture using new technologies)	Energy saving measures in the home
EU25	91%	87%	65%	67%	78%	52%	48%	66%	90%	80%	52%	75%	94%	66%	92%



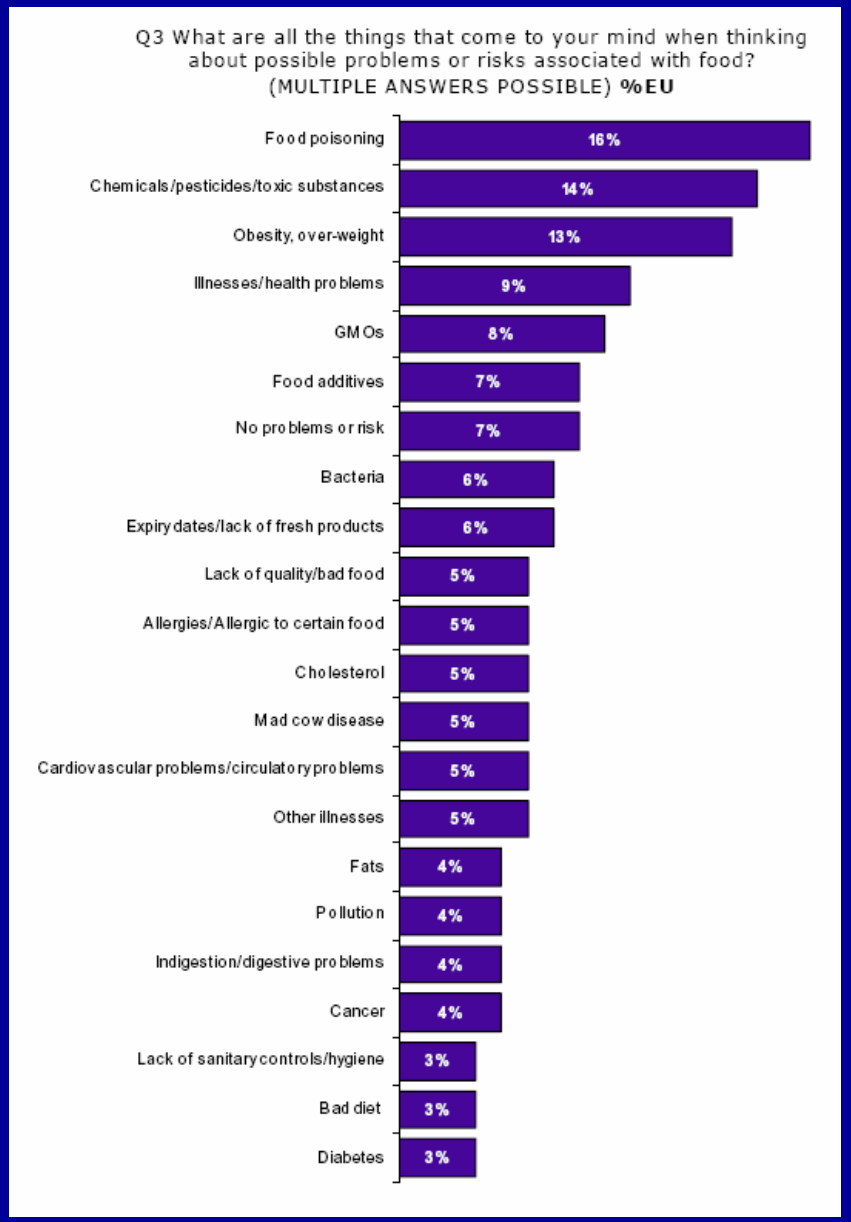
Biotechnology and Genetic Engineering

At the EU level 65% of citizens believe that biotechnology and genetic engineering will have a positive effect on our way of life in the next 20 years. In all countries surveyed with the exception of Austria, a majority is of the opinion that new technologies in biotechnology and genetic engineering will have a positive effect on our society.

High-tech agriculture

Governments and the European Commission have begun to address the question of the applications of biotechnology, in particular in the areas of agriculture, food, pharmaceuticals and health care. **Respondents were asked for their views on high-tech agriculture** in particular. High-tech agriculture would not of course be limited to biotechnology - this is referring to advanced technologies in the broad sense of the term.

At the EU level, a similar result to that observed for biotechnology and genetic engineering emerges here: 66% of EU citizens believe that this will have a positive effect on our way of life in the next 20 years.



Special EUROBAROMETER 238 "Risk Issues" Summary

Vienna, 4 – 6 April, 2006

BUT – this is not the whole story

"If you torture the data long enough, it will confess! "

But even before this, we have to gather data to torture!

- Who do we ask?
- How do we frame our questions?

"Which" Magazine
UK Consumers' Association – May 2004

- 61% agreed: "I am concerned about the use of GM in food production;"
- 73% agreed: "I am concerned that not enough is known about the long-term health consequences;"
- 64% agreed: "I don't think enough is known about the environmental impact of GM;"
- 64% agreed: "I don't think enough is known about the impact of GM on food safety;"
- 61% agreed: "I am concerned that I may be eating GM foods without knowing;"
- 68% agreed: "I think retailers and manufacturers should use non-GM animal feed;"
- 58% agreed: "I try to avoid GM foods and ingredients;"
- 33% agreed: "I am satisfied manufacturers have removed GM from their food;" and
- 26% replied positively to the question "Do you think GM crops should be grown in the UK?"

UK Food Standards Agency

- Some 3000 people are surveyed every year. This survey has been supported by a range of qualitative work, including two large focus group projects that helped to frame the subsequent activities commissioned by the Agency on GM food. There were, in total, 20 different groups that contributed to the Agency's qualitative and deliberative activities.

- A citizens' jury that investigated the question 'Should GM foods be available to buy in the UK?' in April 2003 resulted in a majority of nine jurors (60%) concluding that GM food should be available to buy in the UK while a minority of six jurors (40%) felt that GM food should not be available to buy in the UK .
- FSA research has shown that concern in the UK about GM food has decreased over the past three years.

- For many people any consumer benefits from GM food remain unclear and unproven.
- The potential impact of growing GM crops on the environment has been the issue of most concern. The safety of GM food appears less of an issue, but suspicion and concern still surround the subject.

In answer to these FSA questions, over 3000 respondents each year expressed concern about foods with GM ingredients, as follows:

Q1. Apart from meat & eggs, do you have any concerns about the safety of any particular types of food? (first spontaneous answers, then prompted by certain areas of possible concern)

	spontaneous	total (includes prompted)	% change
2000	8%	27%	
2001	5%	21%	- 6%
2002	6%	23%	+2%
2003	8%	25%	+2%
2004	5%	25%	0
2005	5%	19%	- 6%

Summary:

Concern about safety of GM food declined 6 percentage points over the last year and by 8 points since 2000

Less than 20% of those surveyed were concerned about the safety of GM foods

Q2. Apart from meat & eggs, do you have concerns about particular wider issues of food?

	% concerned with GM Foods
2000	43%
2001	38%
2002	36%
2003	38%
2004	38%
2005	37%

http://www.food.gov.uk/science/surveys/foodsafety-nutrition-diet/

Coexistence

How do we gauge consumer attitudes?

TWO “R” words

- Reason
- Rigour

UK Government funded "GM Nation" Public Debate – 2003

- public workshops
- numerous "town" meetings and discussions
- "in depth" focus group sessions,
- responses of many thousands of UK citizens through a questionnaire (mail and e-mail)

- Headlines on the final report included;
  - '*5 to 1 against GM crops in biggest ever public survey' (The Guardian)*
  - '*Gm Crops? No thanks: Britain delivers overwhelming verdict after unprecedented public opinion survey' (The Independent)*
  - '*Frankenstein Food Revolt: 9 out of 10 vote NO to GM crops' (The Daily Mail)*
  - *'A wary public says no to GM crops' (The Daily Telegraph)*
  - *'We don't want GM crops in Britain' (The Evening Standard)*, and
  - *'UK public remains hostile to GM crops' (Birmingham Post)*

University of East Anglia "A Deliberative Future?" Conclusions from an in depth review of the processes used to elicit views of citizens together with commentary on the outcome were summed up as follows:

- **It (The GM National Debate) was methodologically innovative**
- **It was meaningful and enjoyable for most participants**
- **……..**
- **……..**
- *There was a failure to engage with the broad mass of hitherto disengaged members of the lay public*

- **Stimulus materials produced specially for the debate were bland and unsatisfactory**
- **It proved not possible to arrange for the development of 'joined up' media coverage, linking TV, radio and print journalism with internet and live events**
- **…….**
- **…….**
- *The preparation of the Steering Board's final report on the debate was over-hasty and under-resourced, and featured a methodologically worrying analysis of the findings. Our survey findings broadly mirror a number of the key conclusions of the debate, particularly regarding the widespread levels of concern about the risks of this technology and the need for independent regulation. However, our analysis also shows that the extent of outright opposition to GM food and crops amongst the UK population is probably lower than indicated in the GM Nation? findings*

Risk in context:
The importance of various personal (P) and social (S) issues (%)

Using a 5 point scale, from *Not at all important – to – very important:*

	Not at all important		Neither/ Nor		Very Important	Don't know
Your Health (P)	0*	0*	2	10	87	0*
Partner and Family (P)	1	1	4	10	85	0*
Law and Order (S)	0*	1	3	16	80	0*
Personal Safety (P)	0	0*	4	18	77	0*
Education (S)	1	2	4	17	75	0*
Being Independent (P)	0*	1	6	23	69	0*
Your Privacy (P)	1	1	6	26	65	0*
Terrorism (S)	1	2	9	24	63	1
Environmental Protection (S)	0*	2	7	31	59	0*
Having a Comfortable Life (P)	0*	1	7	33	58	0*
Personal Finance (P)	0*	1	7	36	56	0*
Social Relations/Friends (P)	0*	1	8	34	56	0*
RADIOACTIVE WASTE	3	3	14	26	53	1
Animal Welfare (S)	2	3	14	31	49	0*
The Economy (S)	1	2	12	37	46	1
Excitement/Fun (P)	2	2	18	36	40	0*
Work (P)	9	4	14	32	40	1
Tackling World Poverty (S)	3	3	20	36	37	0*
Tackling Human Rights (S)	2	3	20	42	33	1
Population Growth (S)	3	5	29	32	29	1
GENETIC TESTING	5	5	25	33	29	3
CLIMATE CHANGE	3	5	25	39	28	1
RADIATION FROM MOBILE PHONES	8	7	29	27	26	2
GM FOOD	**9**	**8**	**33**	**26**	**21**	**3**
Religion (P)	17	11	35	17	19	0*

Source: UEA/MORI GM Food Survey 2003 (Weighted dataset, n=1,363); Note: *) These non-empty cells (<0.5) were rounded to 0.

Some analysis of the *GM Nation?* report by Scott Campbell and Ellen Townsend.
Institute for the Study of Genetics, Biorisks and Society (IGBiS),
University of Nottingham.

The randomly selected control group showed that the larger survey was flawed

Data from the 13 questions asked of both the large Open Debate group, and the small random group, were not compared side-by-side anywhere in the *GM Nation?* main report, or anywhere else in the masses of supporting documents. We have located the data for each group, and compared them side-by-side. The huge differences shown here are reason enough to discard the Open Debate data.

(Note that the main report said that the Narrow-But-Deep group was a "control group" on the Open Debate group. Strictly speaking, though, 'control group' is not the right term - 'a measure of reliability' is a better way to put it.)

Table 1
GM Nation? data comparison of Open Debate group (N=36, 557) vs Narrow-But-Deep group (N=78) (% agreeing and disagreeing with questions)

	Agree		Disagree	
Question	Open group	Narrow-But-Deep	Open group	Narrow-But-Deep
1) Cheaper food (I believe GM crops could help provide cheaper food for consumers in the UK)	14	43	70	14
2) Negative environment (I am concerned about the potential negative impact of GM crops on the environment)	91	57	7	14
3) Help British Farmers (I believe that GM crops could improve the prospects of British farmers by helping them to compete with farmers around the world)	9	40	79	23
4) Profit driven (I am worried that this new technology is being driven more by profit than by the public interest)	93	69	6	9
5) Happy eaters (I would be happy to eat GM food)	8	36	86	35
6) Lowers pesticides (I think that some GM crops could benefit the environment by using less pesticides and chemical fertilisers than traditional crops)	14	54	71	12
7) Producers benefit (I think that GM crops would mainly benefit the producers, and not ordinary people)	85	56	8	24
8) Not know enough about health (I don't think we know enough about the long term effects of GM food on our health)	93	80	5	7
9) Medical benefits (I believe that some non-food GM crops could have useful medical benefits)	23	32	41	12
10) Regulated carefully (I am confident that the development of GM crops is being carefully regulated)	7	21	87	44
11) Contamination risk (I am worried that if GM crops are introduced it will be difficult to ensure that other crops are GM free)	93	64	5	17
12) Unacceptable interfere nature (I feel that GM interferes with nature in an unacceptable way)	84	37	10	29
13) Help developing countries (I believe that GM crops could benefit people in developing countries)	13	50	75	18

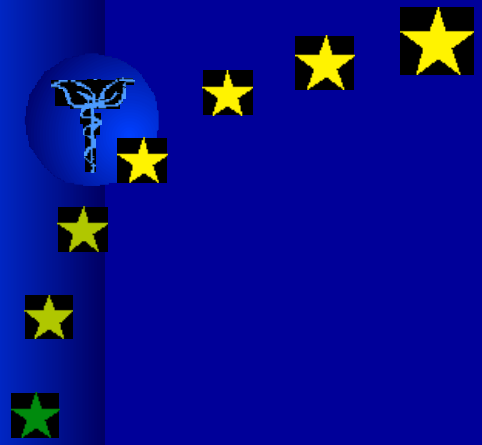
Coexistence in the marketplace

How do we gauge consumer *behaviour*?

Surveys of *behaviour – are RARE*

"Consumer purchasing behavior towards GM foods in the Netherlands" L. Marks, N. Kalaitzandonakes and S. Vickner

- Divergence between attitudes and purchasing behaviour is not uncommon
- Looked at purchases in Netherlands over 267 weeks : mid-April 1997 to mid-May 2002
- Went from non-GM, to GM, to labelled GM to no GM (thus no labels)
- Looked at labelled and unlabelled produce, e.g., soups, frozen pizza, frozen processed meat products and frozen processed fish
- "Lack of *any* statistically significant change in consumer response towards foods with GM labels – could not detect any immediate or gradual response to the introduction of GM labels, or to their removal."



The *Mantra*:

"The European Commission seems determined to force genetically modified foods down consumers' throats even when there are serious questions marks about their long term safety. Their actions are undemocratic. ***People in Europe have made it consistently clear that they do not want to eat genetically foods. It's time the Commission listened and took action to keep Europe GM-free."***

Friends of the Earth, September 2004

Who is really represented here in Vienna?

How will the “outcome” of this meeting be considered by policy makers?

Why bother with plant science at all?

"……..
for the protection of oceans and ancient forests
for the phasing-out of fossil fuels and the promotion of renewable energies in order
to stop climate change
……..
……..."

http://www.greenpeace.org.uk/contentlookup.cfm?CFID=4489303&CFTOKEN=39802739&SitekeyParam=C-A

- **Genetic modification is ONE plant science technology**
- **The plant products of GM are varied and provide for improved**
  - **"input" traits**
  - **"output" traits**
- **The past 10 years of growing crops with novel traits introduced using GM is positive – 2005: 90 million ha, 9 million farmers**

Why bother with plant science at all?

- for the protection of oceans and ancient forests
- for the phasing-out of fossil fuels and the promotion of renewable energies

  in order to stop climate change (*The innovative bio-based economy*)
- to provide a consistent sufficient and safe food and feed supply

"Input" and "output" traits are important in achieving these objectives:

- GM technologies are not new and GM crops have been grown around the world commercially for 10 years. They have been consumed for over 10 years with not one single recorded negative health incident.
- On the contrary: improved yields and increased food security have been attained while cutting the use of spraying, minimising the soil erosion that conventional weed control methods entail, and reducing carbon emissions through reduced reliance on fuel-intensive crop maintenance.
- In a study by PG Economics[1] published last October farmers using the technology increased their income by US$27 billion during the period 1996 to 2004 with significant, additional environmental benefits delivered; the accumulative economic benefits during the nine years to developing countries ($15 billion), exceeded benefits to industrial countries ($12 billion).

[1] GM Crops: The Global Economic and Environmental Impact - The First Nine Years 1996 - 2004. AgBioForum 8 (2&3): 187-196 (2005) (PDF 242 kb)
http://www.pgeconomics.co.uk/pdf/v8n23a15-brookes.pdf

Consumer attitude and market responses to GMOs, viewpoint of the stakeholders

Co-Existence Choice or Denial?

- EU law provides for safe products to be offered to the market – AND for choice
- 10 years of GM crop production shows benefits accrue to farmers and society at large
- Practical experience and research show that coexistence is possible in the EU
- The market must be allowed to operate – EU farmers and consumers must be allowed to decide on GM products
- To provide for this choice, coexistence rules must:
  - conform with democratically developed EU law
  - NOT discriminate
  - be pragmatic and science based