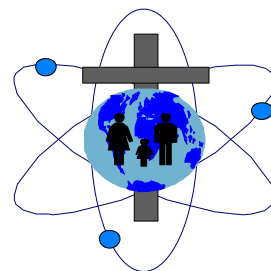


# SOCIETY, RELIGION AND TECHNOLOGY PROJECT

Church of Scotland



## GENETICALLY MODIFIED FOOD

Some see genetic modified crops opening up opportunities in agriculture, food & medicine. For some it's a threat to something basic about ourselves and the natural world - harmful, unnecessary, and benefiting big business at others' expense. But for many people, there are so many competing claims it's hard to know what to think. So what are the main issues?

### The Objections

#### **Should we be modifying genes at all?**

- It's 'playing God' or unnatural to mix genes from radically different organisms
- We don't know enough about what we're doing to switch genes around in food

#### **GM is too risky**

- We have not done enough to evaluate the risks to health or the environment
- GM varieties can reduce biodiversity
- GM genes will spread to non-GM varieties
- GM contamination threatens organic farmers

#### **We don't need genetically modified food**

- Agriculture is already too technological. This will only make it worse.
- There better ways to improve pest resistance and reduce chemicals on the land.
- GM is no advantage to farmers if consumers don't want GM food

#### **It's bad for developing countries**

- GM is just going to provide luxuries for rich, and won't feed the poor and hungry
- Poor farmers need sustainable incomes not multi-national high tech seeds
- GM is a technical fix diverting resources from exploring better indigenous solutions

#### **It's bad for democracy**

- Most people don't want GM crops grown
- Big business is imposing on our freedom under the guise of free trade.
- We must not allow the WTO or EC to force unwanted GM products on UK citizens.

### The Case in Favour

#### **We shouldn't be afraid of biotechnology**

- We have been altering plant genetics for centuries through selective breeding
- Adding 2 genes doesn't violate an organism.
- Why draw the line at GM, not elsewhere?

#### **Risks are no worse than existing foods**

- We have many safeguards in place.
- Health risks have been badly exaggerated
- GM can improve the environment by using less chemicals and less soil tillage.
- With due care, GM and organic can co-exist

#### **Look at the opportunities for good**

- Better resistance to weeds, pests disease, yields, more efficient use of land
- Better texture, flavour, nutritional value longer shelf life, easier shipment.
- GM can offer farmers reduced costs to compete on a global market

#### **GM crops can help developing countries**

- GM is a tool we will need to help feed a growing world population
- China and India are already growing GM on a large scale
- 'Golden rice' offers a potential solution to vitamin A deficiency in poor communities

#### **The democratic Case**

- The public don't rule out future uses of GM
- With labelling, adequate protection can be given for those who object.
- Britain can't object to GM at the EC or WTO without clear scientific evidence.

## **Should we be doing Genetic Modification?**

Some Christians object in principle to genetically modified food, as an unacceptable intervention in God's creation, violating barriers in the natural world. Others think using God's gift of our technical skills to change one or two genes is not wrong in itself, unless the change caused a major disruption in the organism. Such basic changes in genes and food require due precaution on food safety and environmental risk, but not out of proportion. SRT has a separate sheet on GM animal issues.

### **The GM Crisis**

A UK GM tomato paste, introduced in 1996 and labelled in response to consumer advice, sold well until public attitudes changed in 1999. It began when the EU accepted US GM soya and maize imports used to make soya oil and maize flour for many processed foods. The companies refused to segregate supplies or label products as GM, being more concerned with winning markets than public attitudes. Questions were also raised about potential risks to health, gene flow to non-GM crops, and a loss of biodiversity. When people realised they were eating GM foodstuffs whether they liked it or not, with perceived risks but no tangible benefits, and with no say in the decisions, a consumer backlash wasn't surprising. This led to an unofficial UK moratorium on growing GM crops till 2004.

### **Taking the Public Seriously**

The mistake was in failing to see that making novel genetic changes in what we are offered to eat requires great care to listen to the public and to respect their views. The 2003 'GM Nation?' debate and other surveys show there is no public mandate to begin growing GM crops commercially in the UK yet. Most people seem not to be fundamentally opposed to GM as such, so much as sceptical and want more reliable evidence about long term risks. Many think that future GM applications might offer benefits in medicine, developing countries or economically, but are suspicious about the role of big business and 'free' trade. Most GM so far has been for production efficiency to benefit seed companies and farmers not consumers. Those with basic objections to GM food must be given the option of not eating it, and should not have to pay more for what till now has been 'normal' food. EU legislation now requires labelling for all foods where GM processes have been used. And if there is no current public mandate we should not have GM products forced on us by the EC or the WTO.

### **Re-evaluating GM Crops - Government Studies and Trials in 2003**

Government reports in 2003 concluded that economic benefits of GM crops to UK farmers would be depend on consumer acceptance, and that scientific risks should be weighed up, case-by-case. Thus the Government rejected the growing of herbicide tolerant GM oil seed rape and sugar beet after the farm scale trials showed these reduced field biodiversity compared with non-GM crops. It allowed a company a licence for GM maize for animal feed, which improved biodiversity, albeit compared with an old, aggressive weed killer. In doing so the Government ignored the results of its own public consultation, undermining its purpose. It considers that scientific evidence, not public opinion, is the only valid basis to reject a crop at the EC. But, for now, no GM will be grown commercially in the UK. The company abandoned its plans because of uncertainties about liability and its economic case.

### **Will Genetic Engineering really 'Feed the World'?**

Many Christians are concerned that the driving forces of biotechnology create products for western indulgence, neglecting real food shortages elsewhere in the world. The causes of hunger are more about poverty, war, political and social issues than inefficient production. Often better answers may come from better breeding with indigenous resources, than high tech solutions. Yet GM might help in some situations. GM vitamin A rice might help malnourished communities with no access to fresh vegetables. If genes could be altered to enable staple crops to grow in marginal conditions, it might make a difference to countries which struggle to feed themselves. But useful applications are often hard to engineer and offer no profits to private industry. GM has so far mostly been rich man's technology. To be serious about 'feeding the world' means radically reorienting research investment to put top priority on meeting the specific needs of marginal agriculture, using a diversity of old and new technologies. GM might be one tool amongst many. But will anyone take up that challenge?