

BIOTECHNOLOGY AND GM CROPS ON THE WEB

Heath Malcolm of CEH, Monks Wood, UK, selects some useful sites

The debate on genetically-modified products has been vociferous with the opinions of scientists, legislators, consumers, pressure groups and biotechnology companies freely available on the internet. In fact due to the large number of sites, each written from a different perspective, it may be difficult to find sites which offer a balanced view on the subject. The following sites may prove useful to anyone seeking an overview of the area.

UK Government

The official UK site on GM crops and related biotechnology entitled "Gene Modification Issues" is at <http://www.gm-info.gov.uk/>. This site gives details of:

- latest Government press releases on the GM issue, including the farm scale evaluations of GM crop trials
- Ministers with responsibilities for GM crops, food, biotechnology and health
- Government policy on the assessment of GM foods and labelling
- key facts on the approach to the assessment of GM crops
- how GM technology relates to biotechnology
- the role of GM technology in human health issues
- links top key policy documents and other GM websites

This site is an excellent starting point for any study on what is going on in the UK with regard to GM.

The Advisory Committee on Releases to the Environment (ACRE) has a site at <http://www.environment.detr.gov.uk/acre/>, which gives details of the procedures and risk assessments of the use of GM crops in the UK. This site also includes the GMO Public Register and a definitive list of the trial sites where GMOs may be released during 2000.

US Government

The United States Department of Agriculture (USDA) have recently launched a biotechnology site (<http://www.aphis.usda.gov/biotechnology/>). Biotechnology in the United States is regulated by three Federal Agencies, the USDA, the US-EPA (US Environmental Protection Agency) and the FDA (Food and Drug Administration) who work together in a co-ordinated system to ensure that new products are safe for both the environment and the health of both humans and animals. The USDA site highlights the benefit of biotechnology products to both farmers and consumers, while

expressing some concerns on the potential problems of GM products. The corresponding FDA and EPA sites can be found at <http://vm.cfsan.fda.gov/~lrd/biotechm.html> and <http://www.epa.gov/opptintr/biotech> respectively.

Australian and New Zealand Governments

In Australia, Gene Technology is currently regulated by the Therapeutic Goods Administration (TGA) (<http://www.health.gov.au/tga/genetech.htm>), although the Federal Government is the process of setting up an Office of the Gene Technology Regulator which is due to be fully operational in January 2001. The TGA web site provides a full overview of the control of GMOs in Australia. All releases of GMOs in field trials or general release are listed on the web site for public consultation.

From New Zealand the "Genetically Modified Food/Organisms Index" website (<http://www.maf.govt.nz/MAFnet/index/gmfindex.html>) provides information on the situation in New Zealand and good links to information around the world.

Natural Environment Research Council

The UK Natural Environmental Research Council (NERC) have issued a briefing note on their web site (<http://www.nerc.ac.uk/publication/gmo/gmo.html>) which gives an overview of GMOs and the Environment. It explains the science behind genetic engineering and describes applications where such biotechnology has been used successfully. One of the unique aspects of this site is a list of concerns regarding the effects of GMOs on the environment, along with a summary of the data currently available and the data still required in order to answer each concern. Concerns raised include what happens when genes are transferred to other organisms? Can the modified organisms develop undesirable characteristics? Can transferred genes escape from their host organism and if so, does it matter if genes escape? Will herbicide-resistant crops lead to a reduction in biodiversity?

Global Environmental Change

A report entitled "The Politics of GM Food, Risk, Science & Public Trust" is available on the Global Environmental Change Website (<http://www.gecko.ac.uk>). Global Environmental Change is a 10 year research programme funded by

the Economic & Social Research Council. The report aims to provide a balance between pro- and anti- GM views.

The Royal Society

The Royal Society has produced a report “Genetically Modified Plants for Food Use” which reviews current regulatory controls both in the UK and in Europe, and addresses questions of gene transfer from GM crops, other specific concerns of environmental harm, and issues related to GM plants as food (http://www.royalsoc.ac.uk/st_pol40.htm).

The Institute of Biology

The Institute of Biology have produced a downloadable 8 page fact sheet, Genetically Modified Food – All you ever wanted to know about GM foods but were afraid to ask (<http://www.iob.org/pubs.html>). The fact sheet provides a balanced overview of both the scientific and philosophical aspects of the GM debate.

John Innes Centre

The John Innes Centre at Norwich, UK, provides useful balanced information on biotechnology. “GM Issues” (<http://www.gmissues.org/frames.htm>) and “Biotech Bytes” (<http://www.jic.bbsrc.ac.uk/exhibitions/bio-future/byteshp.htm>) present a range of views, FAQs and links to many other related websites.

CropGen

A scientific panel set up by Aventis CropScience, Dow AgroSciences, Monsanto and Novartis Seeds to be called CropGen, “to help achieve a more balanced debate about genetically-modified crops.” A website is being set up at <http://www.cropgen.org>.

Monsanto

Monsanto, the principal company involved in the development of GM crops, has an article on the web entitled “Food Safety Background Information And Reference Materials” which provides information about the regulatory background to GM crops, including those relating to food safety (http://www.monsanto.com/monsanto/mediacenter/background/00mar09_safety.html). Also on the Monsanto website is a copy of “The Benefits And Politics Of Biotechnology” – a submission by Senator Christopher Bond (R,

Missouri) in front of the U. S. Senate on 26 January 2000, presenting the U.S. position prior to the Montreal summit. Both these Monsanto offerings give many useful links to other sites of interest.

Other organisations

The popular science journal New Scientist provides a website called “Living in a GM World” (<http://gmworld.newscientist.com/>)

- The British Crop Protection Council (BCPC) has produced a report “Biotechnology in Crop Protection: A BCPC Appraisal of Progress and Prospects” which can be downloaded from <http://www.bcpc.org>
- National Centre for Biotechnology Education, maintained by the University of Reading offers resources for biotechnology education (<http://134.225.167.114/NCBE/GMFOOD/menu.html>)
- The Natural Law Party has a website <http://www.btinternet.com/~nlpwessex/Documents/gmagric.htm>
- Bio tech info Net at <http://www.bioorg/food&ag/main.html>
- Ag BioTech InfoNet at <http://www.biotech-info.net/>
- Friends of the Earth have a campaign website site on GM at <http://www.foe.org.uk/camps/foodbio>
- Greenpeace also have a campaign Genetic Engineering website at <http://www.greenpeace.org/~geneng/gehome.htm>

Linksite

A good link site with information on GM from around the world can be found at <http://environment.about.com/newsissues/environment/msubgmfoods.htm>. Separate sections can be found for Canada, USA, Europe and the World.

This list is by no means exhaustive. Other sites like <http://www.connectotel.com/gmfood> give literally hundreds of links to news reports on GM food from around the world. However, if you have any particular website which you would like brought to the attention of readers please send details to the staff editor.

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