FOOD, THE ENVIRONMENT AND GENETICALLY MODIFIED ORGANISMS

Current intensive farming practices rely on the use of artificial chemicals and, unlike organic farming methods, inflict significant environmental damage. Genetic engineering represents an escalation of these intensive farming practices. It threatens the environment and potentially human health and will contaminate non-GM and organic crops. (1)

The Greenpeace 'True Food' campaign has three key aims:

- **To ban GM food and crops**
- **To phase-out artificial chemical inputs in farming**
- **To promote a UK wide conversion to sustainable organic agriculture**

1. Genetically Modified Crops: The Risk

No-one knows what effects genetically modified organisms will have on our future health or on our environment. Scientists do not fully understand what happens when the DNA of one organism is disrupted by genes from another organism with which it would never naturally breed, such as a toad gene that was fused with a potato. (2)

We do know that GMOs can have an unpredictable and undesirable impact on the environment. For example, laboratory experiments at Cornell University, published in 'Nature' in spring 1999, showed that monarch caterpillar larvae were unexpectedly killed by pollen from GM maize that produces its own insecticide. (3) This GM crop is widely planted in the United States. Monarch butterflies are much prized and are considered by some to be a flagship species for conservation.

Evidence also shows that gene changes in food create unexpected allergies in humans. A soybean was genetically modified with a gene from a brazil nut. Tests on blood taken from individuals allergic to brazil nuts unexpectedly revealed that they had a similar reaction to the GM soybean (4).

Agrochemical companies are playing with unpredictable, living organisms that self replicate - and are releasing them into the environment without any means to control their spread. The Government has accepted that GM crops will 'inevitably' cross-pollinate with conventional and organic crops (5). Whether GM crops are grown for human and animal consumption or on an experimental basis, the environmental risks associated with their release are the same.

(1) The John Innes Centre, Organic Farming and Gene Transfer from Genetically Modified Crops, June 1999
(2) Researched by The Institute for Crop and Food Research in New Zealand.
(3)John E. Losey, Linda S. Rayor, Maureen E. Carter, Nature, 20th May 1999, page 214.
(4)Nordlee, J.D., Taylor S.L., Townsend, J.A., Thomas, L.A., and Bush R.K., 1996. Identification of a Brazil nut Allergen in Transgenic Soybeans, New England Journal of Medicine, Vol. 334 (11) p. 688.
(5) The John Innes Centre, Organic Farming and Gene Transfer from Genetically Modified Crops, June 1999

2. Medical applications

Greenpeace is not opposed to medical applications of GM technology, providing its use is fully contained and does not involve releases of manipulated DNA into the environment. Individuals that derive some benefit from medical applications of GM technology also bear the associated risks.

3. Sustainable Agriculture

The future of agriculture lies in the development of a sustainable organic farming sector that is not reliant on artificial chemical inputs and does not wreck the environment. Consumer demand for organic food has increased by 40% per cent for the second year running (6) and already far outstrips current domestic supply. Over 70% of organic produce has to be imported (7) – an absurd situation when UK agriculture is in depression. GM crops, whether planted commercially or as 'trials', will inevitably contaminate non-GM and organic crops (8).

Cross-pollination, especially from corn and rape, has become a headache for some non-GM farmers in the US, such as Percy Schmeiser, who claims his conventional oil seed rape crop became contaminated by a neighboring GM rape crop. Monsanto is currently suing him for not paying them to grow GM rape, even though he planted a conventional crop and never intended to grow GM rape. Contamination is also causing problems for GM free producers such as 'Apache Biochips', the organic tortilla makers that had to recall a batch of GM contaminated tortilla chips.

Research shows that the artificial chemicals on which industrial farming methods depend contaminate our water supply (9) and leave high levels of chemical residues in much of our food (10). There is also widespread concern that the use of antibiotics has led to the emergence of antibiotic-resistant strains of bacteria in humans (11).

There is no evidence to suggest that GM crops will reduce the amount of artificial chemicals used in industrial farming. Charles Benbrook, former Executive Director of the Board on Agriculture for the US National Academy of Sciences, said: "Experiments in the field in 1999 strongly suggest that the use of Roundup Ready this year will rise perhaps fifteen per cent to twenty five per cent above 1998 in terms of average pounds of Roundup applied per acre" (12). He also believes that growing GM

soybeans is proving to be “the most expensive soybean seed and weed management system in modern history”(13).

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(6) Organic Food & Farming report, The Soil Association, 1999
(7) Organic Food & Farming Report, The Soil Association, 1998
(8) The John Innes Centre, Organic farming and gene transfer from Genetically modified crops, June 1999,
(9) Nature, 19 November 1998, ‘The Greening of the Green Revolution’
(10) Pesticides Trust, Pesticides News 39
(11) The Soil Association, The Use and Misuse of Antibiotics in UK Agriculture, 1998.
(12) Charles Benbrook, “Evidence of the Magnitude and Consequences of the Roundup Ready Soya Bean Yield Drag from University based Varietal Trials” 1998.
(13) Synthesis/Regeneration 19, Spring 1999 p. 15

4. Farm scale trials

Farm scale trials involve the release of GMOs – a form of living pollution - into the environment. GM pollution cannot be recalled and its effects on the environment and human health are unpredictable. GM pollen is carried by the wind and animals and can cross breed with other crops and wild relatives. Research reveals that it also contaminates honey produced in the vicinity (13). The DNA from the GM crop could transfer to soil organisms with unpredictable results (14).

Greenpeace believes GM farm-scale trials must be banned because:

- Like commercial plantings, they release GMOs into the environment.
- They will irreversibly contaminate organic and conventional crops in order to ‘test’ crops that a majority of consumers are opposed to.
- They allow the government and agrochemical companies to continue planting GM crops (permission has been granted to grow up to 12,350 acres for oil seed rape alone from the year 2000 (15)) in the name of ‘scientific testing’.

5. GM Animal Feed

“As European consumers balk at food made from genetically modified crops, industry analysts say livestock feed may be the next flash point in the debate over whether such products are safe for the environment and human consumption.” (Reuters 22nd October 1999)

Despite widespread public rejection of GM food and crops, GM crops are still getting into the food chain through imported animal feed. Most comes from the United States where GM crops are not segregated from non-GM crops before they are exported. This has led MAFF to state that, ‘a substantial proportion’ of the soya and maize ‘could contain material

derived from unsegregated GM varieties.'(16) Maize by- products from breweries and distilleries, maize gluten and soya are the main GM ingredients that are fed to livestock. 95% of world soybean production is used for animal feed (17).

Announcements by major supermarket chains this year that they will not stock GM food products did not refer to meat and dairy products from livestock reared on GM crops. Food producers and retailers are not legally required to label such products and there are no labelling requirements of the feed itself.

(13) Tests conducted in the Genescan lab in Freiburg, Germany. The results were published in "Oekotest" March 22, 1998.
(14) F.Gebhard & K. Smalla (1998)', Transformation of Acinetobacter sp. Strain BD413 by transgenic sugar beet DNA'. Vol. 64, pp 1550-1559
(15) DETR release consent 98/R19/18.
(16) MAFF report, Food Contaminants D, 11 March 1999-11-10
(17) Farming News, 16th July, 1999. US producers rule out GM-segregated EU soya.

The only way to guarantee that meat, poultry and dairy products are not from livestock reared on GM feed is to buy organic produce or selected food products from supermarkets that have started to source food products from livestock reared on GM- free animal feed: Iceland Frozen Foods and Marks and Spencer.

Greenpeace believes that:

- All supermarkets and food producers should make a public commitment to selling meat and dairy products that are from livestock that has not been reared on GM feed.
- All GM and non-GM crops should be segregated at source.
- GM food and crops should be banned.

6. International Regulation

The World Trade Organisation (WTO) will be meeting in Seattle from November 30th 1999 to discuss further liberalisation of trade. Both Canada and the U.S. want to have GMOs introduced into the WTO trade agreements to make it harder to control the global traffic in GM crops. The WTO negotiations are held behind closed doors. Environment, health and social concerns are unlikely to feature highly in these proposals and could lead to such dissent at the WTO that an international trade war becomes a real possibility.

The European Union does not regulate the use of GM crops in animal feed at all. The European regulation, which governs GM food, does not cover animal feed. A novel feed regulation, mooted since 1996, is still being

delayed. Attempts by the international community to agree a legally binding Biosafety Protocol to regulate the export and import of GM crops have so far failed. GMO exporting countries are refusing to include the trade of GMO commodities in this protocol under the Convention on Biological Diversity. They are also refusing to agree an international liability regulation for GMOs. The next Biosafety Protocol meeting takes place in Montreal in January 2000.

7. Labelling

GM crops will eventually contaminate non-GM crops making it impossible to find any GM-free food. Labelling of GM food, therefore, only gives consumers a choice in the short term. The only label consumers really want to see is 'GM free' or 'certified organic', but organic certification will become meaningless when contamination occurs.

8. 'Feeding the Third World'

"We strongly object that this image of the poor and hungry from our countries is being used by giant multinational corporations to push a technology that is neither safe, environmentally friendly nor economically beneficial to us." (16).

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(16) African Delegation to the United Nations, as reported in The Independent, 25th July 1998

Despite claims by the agrochemical industry that GM crops will 'feed the world', there is no evidence that the technology will tackle the underlying social and political problems that result in food shortages. Nor will it ease problems of food distribution. The world today produces more food per inhabitant than ever before. The EU alone spends £600,000 a day destroying food surpluses and £27 million a week paying farmers not to grow crops. (17)

Agrochemical companies' motives are not to make third world agriculture more productive, but rather to generate profits. They do not intend to overcome health and environmental problems, but manage them in a lucrative manner. As Robert Farley of Monsanto said: "The business logic of sustainable development is that population growth and economic development will apply increasing pressure on natural resource markets. These pressures and the world's desire to prevent the consequences of these pressures if unabated [i.e. international aid], will create vast economic opportunity." (18).

GM technologies intensify farmers' dependence upon seeds protected by so-called "intellectual property rights," which conflict directly with the age-old rights of farmers to reproduce, share or store seeds. The only real solution to global hunger is reform that enables farmers to control their

own destiny. GM crops could have the opposite effect by concentrating agricultural power in the hands of a few multinational companies.

There are many examples of successful, sustainable agricultural practices in the developing world that do not rely on GM technology or artificial chemical inputs, such as the wetland rice farmers in Bangladesh, China, India, Indonesia, Malaysia, Philippines, Sri Lanka, Thailand and Vietnam that have cut pesticide use while still increasing their yields by about 8 to 12 per cent. (19)

Both Christian Aid and Action Aid have criticised GM technology aimed at the Third World which they believe will undermine a sustainable future for farmers in developing countries. As Andrew Simms of Christian Aid said: "Monsanto's claims of a tomorrow without hunger thanks to their genetically engineered products are cruelly misleading." (20)

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(17) Parliamentary Question by Alan Simpson MP, 14th July 1999
(18) Dr. V. Shiva, Monsanto's Expanding Monopolies; From Seed to Water
(19) Jules Pretty 'The Living Land' 1998
(20) As quoted in The Independent, 25th July 1998