GM crops and foods: promises, profits and politics

Empty promises of bountiful, designer foods are used to foist Genetically Manipulated (GM) crops and foods onto reluctant governments, farmers and shoppers. GM cannot 'feed the world' and may even worsen hunger. The UN FAO says there is now enough food to feed 12 billion people but unfair trade, our economic priorities and social conflicts allow a billion people to starve. GM technology cannot right this injustice, but false promises take scarce resources away from finding durable solutions to feed, house and clothe us all. Independent scientific evidence also shows that some GM foods may pose risks to human and animal health and the environment, but industry hides the truth.

GM promise to Feed the World: a cruel hoax:

The cruelest lie about GM crops and foods is that they can 'feed the world' (Bell et al 2010).

GM bully Monsanto launched commercial GM soy, corn, canola and cotton in 1996, in the USA, with two novel traits - herbicide tolerance (so crop plants over-sprayed with herbicide are unharmed, while weeds are killed) and in-built insect toxins (Bt (*Bacillus thuringiensis) toxin produced in the plants kills the caterpillars of Lepidoptera moths that eat it)*.

In 2011, the main commercially available GM varieties are the same four broad-acre crops, containing the same two GM traits. Over 90% of GM crops are still grown in North and South America, with around 70% of these being Monsanto's Roundup tolerant soybean (ISAAA 2010) used mainly for animal feed and biofuels.

"Failure to Yield", a report by the Union of Concerned Scientists (UCS), analysed official data from all the GM crops grown since 1996 and found, except for some Bt corn, that GM crops yielded less than the best conventional varieties. UCS concluded that traditional breeding had contributed much more to crop yield gains than gene manipulation (UCS 2009), refuting claims that GM crops are needed or able to 'feed the world'.

United Nations Food and Agriculture Organisation (FAO) figures show that since the first commercial release of GM crops in 1996, the number of starving people in the world has climbed from 788 million (FAO 2008) to 1.02 billion in 2009 (FAO 2010). The UN special Rapporteur on the right to food, Jean Ziegler, also reported that: *'the world already produces enough food to feed every child, woman and man and could feed 12 billion people, or double the current world population.'* (FAO 2008 2) Everyone could eat well if the available food were fairly distributed and not wasted, but global trade sends food to market where it is most profitable, and where geopolitics dictates.

In 2008 the World Bank and the United Nations (UN) published the International Assessment of Agricultural Science and Technology for Development (IAASTD)), a vision for future farming and secure food supplies. The 400 scientists involved in the three-year project recommended core changes in agricultural practices and systems to assuage soaring food prices, hunger, social inequities and environmental catastrophe. They proposed a global shift from oil-dependent industrial agribusiness to sustainable farming systems, with research and development to augment local traditional knowledge and help farmers optimise use of soil and water resources.

The IAASTD report also concluded that GM crops have no useful role to play in solving climate change, biodiversity loss, hunger or poverty. Fifty-eight countries adopted the IAASTD's findings but the GM companies that helped set up the review rejected them. The Australian, United States and Canadian governments also *'did not fully approve the Executive Summary of the Synthesis Report.*' (IAASTD, 2008)

Hidden GM risks and hazards:

No holds are barred in the corporate quest for GM domination of farming and food. The Scientific American journal (August 2009) and Nature Biotechnology (October 2009) report that GM companies prohibit independent researchers from accessing the GM material needed for environmental and health research, and censor adverse findings. Despite the hurdles, several published papers show some GM soybean, corn, canola and other food crops harm experimental animals and may therefore pose risks to people who eat them.

For instance, an Australian National University team found that CSIRO Plant Industry's GM field peas, containing a gene from a bean, made foreign proteins that provoked immune and inflammatory responses in mice (Prescott et al 2005). French researchers also concluded that rats fed three different kinds of GM maize showed 'significant' signs of liver and kidney damage. (de Vendomois 2009) The *Committee for Research and Independent Information on Genetic Engineering (*CRIIGEN) revealed a lack of scientific consensus on the food safety assessment studies used in the approval process for MON810 GM corn (CRIIGEN 2008). And Stanley Ewen and Arpad Pusztai of the Rowett Institute, Scotland, also found damage to the intestines and immune systems of rats fed GM potatoes. (Ewen and Pusztai 1999)

Those who publish data challenging claims that GM food and crops are safe are often vilified or shunned by members of the scientific establishment associated with the GM industry. They sow doubts about the expertise, credibility and motives of GM critics. Celebrated science historian, Naomi Oreskes asserts the need to "*roll back the rug on this dark corner of the American scientific community, showing how ideology and corporate interests, aided by a too-compliant media, have skewed public understanding of some of the most pressing issues of our era."* (Oreskes et al 2010) Oreskes argues, for instance, that campaigns against government action on global warming use the same tactics as the tobacco lobby and are run by the same small coterie of influential senior scientists. These scientists assume the mantle of general experts, to isolate and ostracise scientific dissenters and whistle blowers. (ABC Radio National 2010) Many scientists who publicly voice their concerns about GM suffer the loss of their professional standing, jobs and careers, as a warning to others who may disagree with the corporate sponsors of science.

Conclusion:

GM crops can't deliver on their false promises of plentiful food and fibre. Despite the expenditure of billions of dollars of public and private money over the past 30 years, the promises of commercial GM crop varieties with increased yield, drought and salt-tolerance, enhanced nutrition, nitrogen-fixing grain, longer shelf life or other traits have not come true. GM techniques are too crude and inexact to cut and paste the multiple genes that regulate such complex traits. But empty claims divert scarce research and development resources from the key task of creating sustainable, ecological farming and food production systems that can feed, house and clothe everyone well, in perpetuity. With oil and phosphate reserves diminished and global climate changing, replacing industrial agricultural practices with ecological farming systems based on healthy soils must be a national and global priority.

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