
THE TABLET

Feature Article, 23 August 2008

No way to feed the world

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At first glance genetic modification seems a godsend in a world of spiralling food costs. But scratch the surface of such claims and a different picture emerges; one that places the starving firmly in the pockets of global agri-corporations and ignores food security

Malnutrition is a risk for at least 14 million people in east Africa this summer in one of the worst food crises of the past decade. Thousands upon thousands of people are queuing at feeding centres run by charities, their only hope of keeping starvation at bay. And the aid agencies warned this week that the situation is likely to get worse.

The lack of spring rains has been blamed, as has the rapidly rising global cost of food, high fuel prices and conflict. In the middle of such a terrible farming crisis, surely crops that are hardier, and able to withstand disease, seem a godsend? And if so, why do people such as the Prince of Wales decry genetically modified (GM) crops, lambasting them, as he did in an interview in *The Daily Telegraph* last week, as deeply harmful to the planet? Are they not, literally, life-savers?

A beguiling argument for GM crops is that since before the dawn of history, agriculturalists have altered the DNA of plants and animals through selective breeding. GM merely enables this to be done more rapidly and accurately.

However, the methods used until now have always been those of nature itself. With GM crops, traditional agricultural and horticultural techniques are abandoned for techniques developed in the lab, involving genes transferred between completely different species. One technique involves transferring genes from a bacterium so that the plants act like insecticides and kill pests that usually eat them, while another involves making a plant tolerant of a particular herbicide so that when it is applied the crop remains healthy while other plants and weeds surrounding it are destroyed. Then there is the creation of crops that have had their nutritional properties enhanced.

Animals, too, have been genetically modified, with spinach genes implanted in pigs to produce lower-fat bacon, spider genes implanted in female goats so that their milk will be rich in silk proteins and nematode worm genes implanted in mice so that they produce omega-3 fatty acids. In another article in *The Daily Telegraph* 10 years ago, the Prince tellingly complained that this took us "into realms that belong to God and God alone".

Although these new genes will stay with the organism they were meant for while it remains in the laboratory, once on the farm they can spread to others, threatening plant diversity by contaminating crops elsewhere. Eventually GM crops could well reduce the huge range of local plant varieties and animal breeds across the world to a handful of standard global types. That poses ecological dangers in itself.

Pollen can be blown on the wind for dozens of miles. Researchers in Sweden and Denmark have found transgenic plants growing in a field planted with GM rapeseed more than 10 years previously. In Mexico, genes have spread from GM to traditional maize. One of the dangers is that GM crops engineered to produce pharmaceuticals could accidentally cross-breed with food varieties.

Opponents of GM crops have also warned that in the long term they do not require fewer herbicides and pesticides. There is only a short-term benefit when they require fewer chemicals than conventional crops. Some farmers have also reported that they have had to pay fees to biotech firms when their crops have become contaminated by GM products. Tom Wiley, a North Dakota farmer, quoted in a Soil Association guide, said that "farmers are being sued for having GMOs [genetically modified organisms] on their property that they did not buy, do not want, will not use and cannot sell".

There is also a political question: who is in charge of the process? GM seeds are commercial products patented by companies such as Monsanto and Syngenta, which also sell chemical sprays to farmers. Their responsibility is obviously to their shareholders, rather than to advance what is today known as food security - people's constant access to safe and nutritious food - or reduce world poverty. The traditional farming practice in many countries would be for farmers to select, save and share their seeds but biotech companies often ban farmers from sharing their seeds and oblige them to buy extra seeds - and any additional agrochemicals - from them.

GM crops would also rival a well-established system that develops seeds for poorer countries. A network of 15 research centres includes the International Maize and Wheat Improvement Center in Mexico, better known by its Spanish acronym Cimmyt, the International Rice Research Institute in the Philippines, the International Center for Agricultural Research in Dry Areas based in Syria for dry-area agriculture, the International Crops Research Institute for the Semi-Arid Tropics, whose headquarters is in India, and the International Food Policy Research Institute in Washington DC. They are open to the public and accountable.

During the 1990s there was a long struggle to get the "precautionary principle" accepted, so that new processes could be introduced only after establishing that they were environmentally safe. It was enshrined in the Cartagena Biosafety Protocol of 2000. So far, the European Union has stood by the precautionary principle in this area and refused to permit widespread use of GM seeds, but their resistance is wearing thin under a campaign to link GM with greater food production. In the developing South, several countries including Sudan, Angola, Malawi and Zambia have rejected GM crops despite biotech companies claiming that they are the solution to world hunger. Zambia set a precedent by refusing American food aid that might contain GM crops.

What matters even more than food production is food security. For despite the food protests earlier this year, there is enough food for everyone on the planet. But when prices go up, fewer can afford it. In Britain and the rich world we may grumble about higher grocery bills, but they are not life-threatening. But in countries such as Bangladesh, Burkina Faso, South Africa and Egypt, where people demonstrated and rioted, they are. In Haiti the Government fell.

International aid policies have prevented many poor countries from holding food reserves, while ripping down their tariffs on food imports. This pitted their local farmers against global conglomerates. In sub-Saharan Africa, net imports of wheat and rice shot up to 26 million tons by 2005. Even before the prices rose, this was more than the region could afford. The biggest recent increase in commodity prices has not been for oil or cereals but for fertilisers. Phosphates now cost five times what they did in 2006. This is because of increased demand generated by higher crop prices, and a series of supply shortages. Oil and fertilisers are the main inputs of industrial farming, and the price surge shows what strain that model is under. But further use of GM would only take the model further: there is indeed a chain that links biotechnology eventually with climate change.

In East Africa, the plight of the malnourished exposes the real problem of food security. Even now, when rains have fallen, and there are lush green fields of maize, people are hungry and their cupboards bare. Political violence, inflation and the high prices paid by others are squeezing the poorest out of the equation.