



Ten Reasons Why GMOs Won't Feed the World - The Corner House, UK

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It is often claimed that genetically engineered crops are the only way to feed a growing world population. Yet close analysis suggests that there are at least 10 good reasons why the widespread adoption of genetic engineering in agriculture will lead to more hungry people - not fewer.

1. Feed, Not Food
2. Engineering for Convenience
3. Substituting Tropical Cash Crops
4. Increasing Farm Debt
5. Promoting Inefficient Farming
6. Increasing Destitution
7. Unsustainable Agriculture
8. Lower Yields
9. Increased Corporate Control
10. Misreading the Problem

1. Feed, Not Food

The two main GE crops grown commercially in the United States - soybeans and maize (corn) - are used to feed livestock, not people. This may be good for GE companies and their partners in the grain trade, but it will do little to relieve world hunger.

Indeed, livestock production in many Southern countries has often been at the direct expense of poorer people's diets. Egypt, for instance, encouraged by USAID, invested heavily in livestock from the 1970s onwards. The country now grows more food for animals than for humans. Human supplies of grain have been made up through US imports which contributes to Egypt's external debt. The consistent beneficiaries have been large US grain merchants which have exported US grains at hugely subsidised prices to Egypt.

2. Engineering for Convenience

Much genetic engineering research in food has been directed at meeting the commercial needs of food processors rather than the nutritional needs of poorer consumers. A report by the US Biotechnology Industry Organization suggests that more biotech effort will be devoted to genetic techniques for delaying ripening or rotting of fruits and vegetables and for improving their appearance so that they can be transported over ever longer

distances and kept on supermarket shelves for longer. Maintaining a system whereby food has to travel such long distances may be good news for oil companies, airlines and motor manufacturers, but it is an energy- and resource-intensive system which contributes little to the nutritional health of hungry people in either South or North - and does much to undermine it.

3. Substituting Tropical Cash Crops

Using genetic engineering to create substitutes for tropical cash crops will destroy the livelihoods of the rural poor in many Third World countries - aggravating poverty and hunger. Several applications of biotechnology are aimed at growing tropical cash crops in the North, or at producing in laboratories the substances currently derived from such crops. Canola, for example, has been genetically-engineered to produce oils which would replace coconut and palm oils. Coconut oil provides seven per cent of the total export income of the Philippines, the world's largest exporter of coconut oil, and direct or indirect employment for 21 million people, about 30 per cent of the country's population. Other tropical crops at risk include vanilla and cocoa. Although some of these cash crop producers will be able to switch to growing other crops, many will not. With their income from export earnings slashed, few Southern countries will be in a position to compensate such workers and farmers. They will be left to fend for themselves: many are likely to become malnourished for lack of cash to buy food.

4. Increasing Farm Debt

Unlike many of the seeds currently grown by Third World farmers, GE crops do not come free. Attempts through legislation and genetic engineering techniques to sterilize seeds, and to deny farmers' their ancient right to save and exchange seeds from previous harvests will force them to buy their seeds every year. In addition, farmers will also need to buy chemical herbicides and fertilizers; without these the GE seeds will fail to achieve viable yields. Many small farmers, who are already hard pressed by competition from heavily-subsidised food imports from the US and by the removal of subsidies on water and energy under structural adjustment programmes, will slide into debt. The result is likely to be yet another wave of farm bankruptcies, leading to landlessness for poorer farmers and an increased concentration of land as wealthier farmers and speculators buy up bankrupted farms. By threatening the farm livelihoods of the very poor, GE crops can only undermine the food security of small producers - hardly a policy for "feeding the world".

5. Promoting Inefficient Farming

Proponents of genetic engineering in agriculture argue that farm bankruptcies are a regrettable but necessary price of greater efficiency in agriculture. In terms of output per unit of labour, small farms are less "efficient" than large modernised ones. But in terms of gross output per unit of land, smaller farms often outdo larger ones. In Thailand, holdings under one hectare have been found to be almost twice as productive as holdings over 40

hectares. Arguments for replacing "inefficient" small producers with "efficient" large producers also fail to take account of the key role that small farms (particularly household gardens invariably tended by women) play in efficiently supplying informal household networks with food. To displace such networks would almost certainly result in a dramatic fall in the amount of unmarketed food available to poorer people.

6. Increasing Destitution

Many vulnerable smallholder producers displaced as a result of growing genetically-engineered crops are likely to find themselves in a saturated labour market. If they could get jobs, they would probably be low-paid, insecure ones in the cities or on larger farms where workers are generally paid piece rates. In today's global supermarket, food goes to those who have the money to buy it. Only those who have the income to translate their biological needs into "effective demand" get to eat. Those whose incomes are too low - who cannot grow food for themselves - inevitably wind up malnourished. The overall result of displacing "inefficient" small farmers is thus likely to be increased famine and malnutrition - not a reduction in hunger as the proponents of genetic engineering promise.

7. Unsustainable Agriculture

Genetic engineering in agriculture is likely to have adverse environmental impacts which are in turn likely to undermine the ecological basis of food production. Genetically-engineered crops will stimulate the evolution of "superweeds" and "superbugs" which will necessitate higher doses of chemicals and make food supplies more vulnerable to pest damage. The outcrossing of engineered traits to other plants also poses a major threat to food production. In addition, the adoption of genetically engineered crops is likely to reduce genetic diversity, resulting in fewer and fewer types of food crops; the narrowing of the genetic base of food adds to the likelihood of pest and disease epidemics. Many of these problems stem from the fact that genetically-engineered crops will be grown in industrial monocultures. Other forms of agriculture offer far safer, proven and ecologically-benign means of protecting crops against pest damage.

8. Lower Yields

The genetically-engineered crops now being cultivated do not have significantly increased yields. In some cases, yields are lower than those for conventional varieties of the same crop. In the first large-scale field trials in Puerto Rico in 1992 of Roundup Ready plants, Monsanto scientists found statistically significant reduced yields, averaging some 11.5 per cent, in three of seven trials. Many of the first growers of Roundup Ready cotton in the Mississippi Delta of the US complained in 1997 of low yields and poor quality, noting that bolls dropped prematurely and were deformed. Over 50 growers filed complaints with the newly-formed US Seed Arbitration Council; Monsanto has since paid out substantial compensation. Several analysts conclude that any

further increases in crop yields in modern food crops will almost certainly come from building on traditional breeding methods - not from transgenics.

9. Increased Corporate Control

Mergers, takeovers, joint ventures and licensing agreements between plant breeding companies, seed distributors, grain traders, chemical companies and genetic engineering interests have resulted in some genetic engineering companies gaining near monopoly control over the growing and marketing of some agricultural commodities. Just ten multinationals (including Monsanto) have now cornered nearly 40% of the world seed market. Monsanto itself estimates that half the US grain industry is now using its genetically-engineered seed; it expects that by the year 2000, all soybeans planted in the United States will be of its Roundup Ready variety. Seed companies may well take conventional varieties off the market or use existing seed and patent legislation to restrict farmers growing such varieties. The result could be a drastic reduction in farm biodiversity - with a consequent increase in the vulnerability of crops to disease. Again, hardly a way to ensure food supplies for the future.

10. Misreading the Problem

Underlying the biotech industry's claim that GE foods are needed to feed the world lies a fundamentally flawed analysis of the causes of world hunger. More food will undoubtedly have to be grown in future if the increasing numbers of people in the world are to be adequately fed. But the claim that GE crops have a positive contribution to make is only plausible if one mistakenly assumes that the hungry must be hungry because there is not enough food. In fact, more than enough food is already being produced to provide the world with a nutritious and adequate diet - according to the United Nations' World Food Programme, one-and-a-half times the amount required.

If one in seven people currently go to bed hungry, it is not because of an absolute shortage of food, but because inequalities in political and economic power deny food to people. As long as access to food depends upon money, and as long as poorer people are excluded from food markets or from land, significant numbers of people will be malnourished, hungry and starving - whatever happens to the global food supply, and whatever happens to the number of people in the world. Far from addressing these underlying structural causes of hunger, genetic engineering will do much to exacerbate them. Ensuring food security worldwide requires an approach to agriculture that is, in almost every respect, the reverse of that being promoted by biotech companies and their allies in government and regulatory authorities.

 "Ten Reasons" is extracted from "Food? Health? Hope? Genetic Engineering and World Hunger", a 28-page briefing prepared by:

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