

The Precise Problem with GM Foods

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Much of the public debate around the genetic engineering of crops tends to be framed by the contrasting notions of precision and uncertainty. Proponents of the technology emphasise the great 'precision' and control associated with these techniques compared with earlier plant breeding methods, and they like to portray critics as 'ill-informed'. On the other hand, the more common criticisms of genetically modified crops tend to emphasise the unpredictability and risks associated with the release of these crops.

There certainly is a great deal of precision in being able to transfer or modify the particular genes or genetic characteristics of a plant. But what this ideology of precision conceals is that there is in fact great imprecision and unpredictability in these scientific techniques, as well a range of potential health and environmental risks and hazards associated with the release of these plants into the environment.

Firstly, genetic scientists do not precisely know the position the new genes will occupy on the plant's genome, nor what is the relationship between the introduced genes and other genes. There is also great uncertainty as to how the genetic modifications might alter the composition of the crops produced and other characteristics of plant growth, as well as of the broader environmental consequences of their release.

The more common criticisms of GM crops — and those usually highlighted in the media — tend to focus on these potential health and ecological 'risks' and hazards. This includes the possibility — or likelihood — that the modified genes will spread to other crops or weeds, thus 'contaminating' non-modified crops. Other unpredictable outcomes are where the genetic modification detrimentally alters the nutritional content, chemical constituents and allergenic properties of the food, and the risks associated with inserting antibiotic-resistant and viral genes into plants. The obvious need for more caution and adequate testing is currently being over-ridden by imperatives to quickly commercialise these crops.

To speak in these terms is to counter the proponents' language of precision and control with notions of uncertainty, unpredictability and risk. But aside from these unpredictable — and in some cases likely — outcomes, there are a range of other 'problems' associated with GM crops that are in fact much more knowable and predictable in character. In particular, the GM crops currently being developed and commercialised will almost certainly exacerbate the already existing agricultural, ecological and socio-economic problems and injustices associated with contemporary chemical-industrial agriculture.

For example, the engineering of herbicide-tolerant crops, as well as crops that produce their own insecticides, is all about finding ways to maintain and expand large-scale, chemical-intensive, monoculture farming systems, rather than about ways of shifting to more ecologically sustainable farming practices and cultures, such as those characteristic of organic and traditional agricultural forms.

Proponents of GM herbicide-tolerant crops continue to claim that they will enable a reduction in the use of chemical herbicides. But these crops will further entrench and possibly expand herbicide usage in the long term. They are primarily being developed in order to deal with the growing problem of herbicide-resistance in weeds, by enabling the shift to new 'broad-spectrum' herbicides which kill all plants they come in contact with. These new herbicides will also simplify the increasingly complex cocktail of herbicides currently being used by chemical-industrial farmers. Any reductions, if any, in herbicide usage are likely to be only short term until the weeds develop resistance to these herbicides, as they have already begun to do.

GM crops and their accompanying industrial farming practices will also accelerate the erosion of seed diversity and the tendency towards seed uniformity, and to intensify existing soil erosion and salinity problems.

The claims by the biotech industry that we need these crops to feed a growing and hungry world population are also fanciful. To the extent that GM crops will favour the expansion of large-scale, chemical and capital-intensive, labour-replacing, corporately-controlled and export-oriented agriculture, then the food security of small-scale and poor farmers and subsistence communities will be further undermined. It is this undermining of the livelihoods of the rural poor — who make up much of the world's hungry population — that leads to poverty, unemployment, landlessness, and ultimately hunger. That is why many thousands of small-scale farmers and farmer organizations in Third World countries are actively campaigning against these crops.

In a number of ways GM crops will simply further entrench and intensify chemical-industrial forms of agriculture, and the existing ecological and socio-economic problems associated with them. Of this we can be fairly certain.