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GM: it's safe, but it's not a saviour

Denis Murphy, a leading British expert on biotech, says GM food is very beneficial - but it won't solve the food price crisis.

Rob Lyons

In June, the UK environment minister, Phil Woolas, told the *Independent* that it was time for the nation to take a fresh look at the issue of genetically modified (GM) crops in the light of the surge in food prices over the past few months. Yet as Denis Murphy - a leading biotech expert - tells *spiked*, while a more positive attitude from government is a good thing, the idea that GM will solve these short-term problems is 'bullshit'.

Woolas told the *Independent*: 'There is a growing question of whether GM crops can help the developing world out of the current food price crisis. It is a question that we as a nation need to ask ourselves. The debate is already under way. Many people concerned about poverty in the developing world and the environment are wrestling with this issue.' (1)

In fact, people have been debating GM for years. Indeed, if anything there has been far too much talking and not enough growing. On one side, there has been a sustained campaign against GM foods by eco-campaigners and scaremongering journalists, who claim that GM is unnatural and unsafe. The anti-GM lobby has extrapolated from isolated studies about the effect of GM crops on butterflies to declare that GM is 'bad for the environment'. In 1999, there was the case of Arpad Pusztai, a research scientist at the Rowett Institute in Scotland, who went directly to the media to share his concerns about the effect of GM potatoes on rats. The headlines he generated about the health risks of GM were in no way matched by the subsequent declaration of the Royal Society, Britain's leading science association, which said that Pusztai's study was flawed and no conclusions could be drawn from it (2)

On the other side, there are those who, reacting against the anti-GM, anti-technology outlook, claim that GM is the only way we can feed the growing world population. For example, the founder of Sense About Science, Dick Taverne, wrote in *Prospect* magazine in December 2007: 'In delaying cultivation, the anti-GM lobbies have exacted a heavy price... delay has caused the needless loss of millions of lives in the developing world. These lobbies and their friends in the organic movement have much to answer for.' (3) While Taverne is absolutely right to slam the irrationality of anti-GM groups, his own take on the matter suggests that solving hunger is a matter of scientific development rather than being a political and economic question.

In the midst of this, the New Labour government has tiptoed towards approving GM. In 2003, the government arranged a series of public meetings and debates called 'GM Nation?' to canvas public opinion (4). In 2004, the government announced that GM crops would be allowed - but only on a 'case-by-case' basis. Thus, each individual GM variety would have to jump through a series of hoops to prove its safety. Given that GM crops have been grown, without harm, in other parts of the world for over 10 years, New Labour's approach was never going to win any medals for policy valour. Not surprisingly, there are still no GM crops in commercial production in the UK.

The government clearly recognises that there is no reason to be afraid of GM, and plenty of reasons why it is bad news if Britain does not encourage a vibrant plant biotech industry. Yet, while it is good to see ministers *finally* making some sort of stand for GM, dressing up the technology as a solution to the immediate crisis is a mistake.

'The cynic in me thinks that they're just using the current food crisis and the fuel crisis as a springboard to push GM crops back on to the public agenda', says Professor Denis Murphy, head of biotechnology at the University of Glamorgan in Wales. 'I understand why they're doing it, but the danger is that if they're making these claims about GM crops solving the problem of drought or feeding the world, that's bullshit. That's the kind of thing that might come in the next 15 years, but you can't deliver it now.'

Murphy is no eco-warrior or anti-capitalist protester; he's an advocate for GM technology who has worked both in academia and in the biotech industry. Previously, he worked at the world-renowned John Innes Centre developing new crops. The problem, he says, is that current GM varieties haven't been developed for the purpose of increasing yields.

'There are only two types of GM crop that are being grown on any large scale, developed by companies like Monsanto and DuPont, which are resistant to herbicides and resistant to pest infections like insects', Murphy tells me. 'They've been developed for commercial reasons because the companies can easily leverage profits from them. No company has concentrated on yield so far as a commercial characteristic because yields have been high enough anyway to give farmers a good return. Yield hasn't been part of the equation until very recently.'

For Murphy, GM is simply a technology that allows us to gain greater control over the development of new crops. He says: 'There's nothing intrinsically unsafe about GM technology. Certainly to my knowledge, all of the crops developed to date have no safety implications that I'm aware of. They've actually been grown for 10 years and eaten by millions of people with no effect whatsoever that I'm aware of on health.'

His problem is with making unsupportable claims about where we're at with the technology. 'As a researcher, I do think we should try to develop the technology, we shouldn't stop farmers growing these crops, because I don't think there's anything wrong with them. The only thing I object to is people claiming that they're going to feed the world. That's nonsense.'

So, if not through GM, how will the world deal with the current crisis - and expand production to meet the needs of the growing population? Murphy argues that the fashion for biofuels is the major short-term factor in rising prices: 'Biofuels have taken out food crops very suddenly in the last two or three years. I've seen this in Malaysia where 10million tonnes of palm oil which is edible has been diverted to bio-diesel. The Americans have been growing maize for ethanol and the Brazilians have been growing soy. This is all being driven by public subsidies, by America and European governments. I think that is the major culprit at the moment.' (5)

Murphy believes that biofuels are a mistake. But he also recognises that there are long-term demand trends - like the economic growth of India and China - that need to be addressed, too. He believes that plant breeding will play a part in meeting this demand, but that economic arrangements will have a major role, too.

'A liberal economy, bringing down tariff barriers, allows farmers to grow what they want in a free market. Vietnam has shown how successful this can be; it liberalised about 10 years ago. They went from being importers of rice to being one of the major exporters of rice - and that was because the state got out of controlling agriculture. Every farmer became an entrepreneur. Farmers were able to manage their own fields, yields increased because they were more efficient, they were more motivated.' The result has been to encourage farmers to borrow to invest in machinery, fertilisers and so forth in order to improve yields, says Murphy.

Not that he believes that the free market is a panacea for all ills; it's more that governments 'usually make a mess of things'. However, even a completely liberal market would not solve this problem. The question remains: if we can produce enough food to feed the world, why do so many go without? Capitalism has revolutionised society and production, but ultimately will only promote activities that make a profit, even if this approach irrationally ignores desperate human need. When people live on less than a dollar per day, for example, their needs are irrelevant to the market system since they cannot generate a profit for producers.

The monopoly situation in plant biotechnology, where just a couple of companies control almost all of the GM crops that are grown, is also bad for innovation. Murphy believes this is exacerbated by officialdom's regulatory environment where testing new strains costs millions of pounds. The result is that small companies go out of business or are swallowed up by the big boys. He argues that there needs to be a more cooperative environment where ideas are shared freely, as has happened with 'open source' software, and closer links between academia and industry.

Murphy's views provide a welcome relief from the current, black-and-white debate on GM. The technology has the potential to be enormously useful in developing the plants we need in the twenty-first century, but it cannot feed the world on its own, particularly given the commercial and political constraints placed upon it by cowardly, green-leaning governments.

Making sure that we have enough food, not just to avoid starvation, but to actually give everyone a proper, varied and nutritious diet, requires that we question the social relations under which

food is produced. We need to remove the barriers that prevent us from growing the food we need and providing sufficient wealth for everyone to buy it. Allowing farmers to sell their food without having to compete against market-distorting subsidies and tariffs would be a good start. Challenging the low horizons of many development agencies and environmentalists would be beneficial, too.

We need another 'green revolution', it is true, to provide the technical basis for feeding humanity. It can be done if we're ambitious. Murphy strikes a hopeful note: 'I'm pretty optimistic that we can sustainably feed 10 billion people indefinitely.' But new technology alone is not enough; we'll need to revolutionise how society works, too.

Rob Lyons is deputy editor of *spiked*.

Denis Murphy is author of *Plant Breeding and Biotechnology: Societal Context and the Future of Agriculture*, published by Cambridge University Press. (Buy this book from [Amazon\(UK\)](#)).

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- (1) [GM crops needed in Britain, says minister](#), *Independent*, 19 June 2008
- (2) For more on these, and other cases, see [GM: where the science doesn't count](#), by James Heartfield
- (3) [The real GM food scandal](#), *Prospect*, December 2007
- (4) For a critique of GM Nation?, see [A genetically modified survey](#), by Scott Campbell
- (5) For another take on the biofuels debate, see [Food price rises: don't blame biofuels](#), by James Heartfield

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