

GM foods: is rational public debate possible?

My wife and I were dining with a politician and his wife and the subject of GM foods came up. I thought Charles might be interested in the tenor of the conversation. True to form, he had just been to a university lunch where biotechnology was the subject of the talk. His immediate response was:

‘Both the women were passionately opposed!’

‘Yes, you’ve got it in one!’ *I replied.*

‘Why?’ *he asked.*

‘I wasn’t quite clear,’ *I replied,* ‘it seemed to me that they gave numerous but ill-considered reasons. These were either without evidence or they applied possible specific problems to genetic modification in general, foods being a good example.’

‘Didn’t they accept that there may be arguments in the other direction?’

‘Whilst they said they did, clearly emotionally they did not,’ *I replied.* ‘They complained that international companies with evil financial motives were responsible for the counter arguments, making them invalid.’

‘Have they not heard of the Rotamsted Research Institute, which is renowned for its work on all forms of plant breeding? Most of the basic work is done in universities such as Cambridge and government-funded institutions.’

‘I suspect not, or perhaps they prefer to forget.’

‘And to forget that the same companies, as pesticide manufacturers, have much to lose as well as gain if the plants are successful!’

‘None of us thought of that!’ *I admitted.* ‘They also held that we don’t need GM foods.’

‘Even in the developing world, Coe?’

‘Apparently not,’ *I replied,* ‘They were also obviously heavily influenced by the antagonists’ use of the word “contamination” as though genes could spread through the plant kingdom by some magical form of transmission.’

‘And what about the politician himself?’

‘He took little part in the conversation but clearly recognised the difficulty of public debate.’

‘And tried to fudge all the issues?’

‘True, but how would you handle the debate?’

‘I would clearly separate the general from the specific. There is an entirely metaphysical problem as to whether genetic modification is justified. The question is not specific to GM, but potentially applies to all manipulations of nature. It is concerned with man’s relationship to creation. This is relevant whether you are a theist, or effectively a pantheist masquerading as an atheist. Moral issues are extremely important and I have every sympathy with people who are opposed to GM technology on these grounds, provided that they do not attempt to justify their position with scientific arguments which are necessarily irrelevant to their case.’

‘But there are scientific arguments,’ *I replied.*

‘Yes,’ *he said.* **‘But these are essentially specific to each genetic modification and few if any are solely applicable to the introduction of genes, as opposed to breeding to select genes.’**

‘You’re talking about the problem of rapid volunteer spread of oil seed rape in Canada?’

‘Yes, that’s a good example, it could have occurred with conventional breeding, or any introduction. Think of the prevalence of European grasses and broom in New Zealand,’ *he replied.* **‘Nevertheless, I do feel there is one fear that might be justified, although it is not strictly specific to GM and might be relevant to genes introduced or selected in other ways. I am talking about the fear that genes may sometimes be transmitted other than in a strictly hierarchal manner through reproduction within species through microscopic vectors.’**

‘Yes, I think that was one of their major fears and what they really meant by “contamination”. Actually bacteria are used for manufacture and transmission of genes in biotechnology but I am unaware of this as a problem in the natural environment.’

‘That does not mean it couldn’t happen and don’t forget that there are those who think that this sort of thing with viruses and bacteria might have been

important in the evolution of the first multicellular organisms,' he countered.

'Theoretically, I suppose, yes,' *I replied.*

'So, Coe, we must accept that close monitoring is necessary, and the time scale very long?'

'Yes to both,' *was my reply.*

'Let's turn to the other things, first of all the question of motive.'

'The views about this were very strongly held,' *I agreed.*

'Surely it is dangerous to question your opponent's motives during an argument. First, because it weakens your objectivity, making it more likely that you will come to the wrong conclusion and secondly, because it is extremely embarrassing when you are proved wrong. Having said that, if you doubt the motives then you may cautiously reduce the weight of that evidence. But once that reduction has been made, further evaluation must depend on the evidence put forward.'

'And what about the view we don't need GM foods because we don't need to intensify agriculture any further?'

'Even if food could be produced without intensification, you shouldn't forget that intensification of agriculture is not always bad for the environment, particularly in the developing world.'

'Why not?' *I asked.*

'Well, land that is used for agriculture can't be used to maintain large scale natural habitats.'

'So you would encourage reasonable intensification of agriculture, whatever the basis?'

'Yes,' he said, 'the old-fashioned English countryside may be idyllic but so are the plains of the Serengeti!'

'So, if you're not ethically opposed to genetic modification, then take each individual application on its merits?'

'Yes,' he said, 'but don't forget the niggling fears, which are not entirely groundless.'

'But should we take any risks?' *I asked and added,* 'and can we cope with them, Charles?'

'I personally would take some risks, but it is probably too much to expect modern society, which demands certainty, to cope with. The BSE debacle has been disastrous in this

respect. Politicians will chicken out in the name of "societal concerns". It would be a pity if the human species loses its curiosity and other species their habitats for fear of something that just *might* happen. This was certainly the view of our lady speaker at the university lunch, to whom I am very grateful for clarifying my understanding of the issues. She put in context the value of the public debate when she said one third of people thought that non-GM tomatoes don't have genes, one third thought they did have them and one third didn't know.'

I was left wondering whether rational public debate was possible and whether politicians will have the courage to lead down the appropriate path if they are concerned further work should be done.

Coemgenus