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From the President Lord May of Oxford OM AC Kt PRS
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Dear Sir

GM crop farm-scale evaluations

I welcome this opportunity to comment on the results of the GM crops Farm-Scale Evaluations (FSEs), which were published in Philosophical Transactions of the Royal Society: Biological Sciences on 16 November 2003.

The results from the FSEs are worthy of note, not just for their contribution to the current debate on the commercialisation of genetically modified crops in the UK, but also for their contribution to the scientific understanding of the impact of modern agriculture on the environment. The experiments demonstrated that GM crop technology can be applied in ways that may be better for farmland biodiversity than conventional practices, or that it can be used to further intensify agriculture with a corresponding negative effect on farmland biodiversity. The experiments demonstrated the comparative efficacy of different herbicide regimes for weed management, and provided an unprecedented level of detail about the effect of these regimes on certain aspects of farmland biodiversity. The results clearly demonstrated that it is not the technology of genetic modification but the weed management system associated with it, such as volumes of herbicide used and its persistence, that determines the environmental effects of a particular agricultural system.

Whilst important, the FSEs are just a snapshot comparison of two crop management techniques for three different types of crops, with their environmental impact demonstrated through the use of a subset of environmental damage indicators. For any long-term outcomes to be drawn about the future of the UK agricultural system, however, there needs to be a clearer picture obtained of the current system in the UK and its effect on the environment. Only by measuring the environmental damage caused by existing agricultural practices can an accurate comparison of alternative systems take place. It is important that comparison against this baseline becomes a feature of future assessments of all agricultural technologies, as failure to do so would misrepresent both the positive and negative features of alternative systems.

The most pressing question arising from the FSEs is not whether genetically modified crops are better or worse for the environment than conventional agriculture, but what do we want from modern agriculture? How do we balance the use of crops that are pest-resistant or out-compete weeds with alleviating the damaging effects on field biodiversity associated with conventional agriculture, such as fewer wild plants, fewer insects and fewer birds? The UK has already experienced a pronounced loss of biodiversity, and we need to decide that if this trend is to be halted, how is this best achieved? It could be through working with the grain of nature, such as targeting land for non-agricultural purposes, or by growing our food more efficiently, such as using techniques like genetic modification to develop crops that require fewer chemicals. I discussed this issue in 1999 when I was the UK Chief Scientific Adviser in my report 'Genetically modified foods: facts, worries, policies and public confidence' and in my Anniversary Day speech as President of the Royal Society in 2002. I would like to reiterate the point I made then that, if appropriately used, GM crops could be used to deliberately improve the environment, but that first, much larger questions need to be answered about what kind of world we want to live in. There are social and environmental choices about agricultural practices and their impact that need to be made before we look to science and technology to help provide the solution.

It is unlikely that any future UK agricultural system will consist of a single farming practice, but that instead a number of different farming practices will all feature in the landscape. The issue of the potential co-existence of more than one type of farming practice in the UK environment was not addressed within the FSEs, but is of relevance when considering the future of GM crops and UK agriculture. The Agriculture and Environment Biotechnology Commission is currently producing a report on possible Coexistence and Liability of GM crops with other forms of agriculture within the UK and the issues surrounding genetically modified organisms and the environment, and I look forward to the publication of this report with interest.

Some of the issues outlined above were discussed at our scientific discussion meeting on 'GM crops, modern agriculture and the environment' on 11 February 2003, held as part of our contribution to the debate about the commercialisation of GM crops in the UK. A summary report and full transcript of this meeting, as well as our other reports and statements on this issue, can be found at www.royalsoc.ac.uk/gmplants

I am pleased that ACRE is examining this issue and look forward to the outcome of this inquiry.

Yours

Robert M May