



PRESS RELEASE

LOST OPPORTUNITIES IN CROP PLANT SCIENCE IN EUROPE

07 December 2005

The current lack of investment in European crop science, which may be due to Europe's long-standing scepticism about genetically modified plants or 'GM', has led to a neglect of broader genomics-based approaches for improving crop plants, notably 'marker-assisted breeding'.

These are the conclusions Prof. Steve Hughes, co-director of the ESRC Centre for Genomics in Society, draws in an opinion piece published in the *Plant Biotechnology Journal*. Hughes responds to several recent reviews of crop plant science in Europe that reveal a picture of resource deficit and missed opportunity.

"GM may have swung people's attention away from genomics and crop plant science, but marker-assisted breeding has the potential to be translated into real crop improvement, both for the first and third worlds".

While long-standing skepticism about genetically modified crops or 'GM' in Europe may be responsible for the slip of crop science from the priority areas of the European Research Framework Programme, as well as for the withdrawal of much industrial research in this area to the United States, Hughes—instead of defending GM—insists on a distinction between GM and genomics-based approaches for crop plant improvement, notably marker-assisted breeding and selection.

Instead of introducing a single gene into a crop plant genome, the approach taken in GM,

marker-assisted breeding identifies genetic markers that are associated with favorable traits across the genome. The application of these molecular markers allows to breed crops with more robust disease resistance more rapidly. Recent reports by the BBSRC, the European Academies Science Advisory Council (EASAC), as well as the European Plant Science Organisation (EPSO) all identify marker-assisted breeding as a key technology for crop improvement.

As crop plant breeding is not a high profit-margin business, Hughes also recommends that more crop plant science should be carried out in public-private partnerships and that the resources and enablements generated should be shared among breeders. "Molecular markers for breeding can be equally applicable to rich and poor people's crop plants, and research funding bodies should make resource sharing a condition of support" he says. Specifically, he also recommends that European funding agencies should collaborate with programmes such as 'Unlocking Genetic Diversity in Crops for the Resource-Poor', recently floated by the Consultative Group for International Agricultural Research (CIGAR).

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Notes:

1. Egenis is the ESRC Centre for Genomics in Society, a research centre at the University of Exeter funded by the UK's Economic and Social Research Council (ESRC) to the study of the meaning and social implications of contemporary genomics. Website: www.centres.ex.ac.uk/egenis/.
2. 'Genomics and crop plant science in Europe', by Prof. Steve Hughes. Published online *Plant Biotechnology Journal* 24 November (doi: 10.1111/j.1467-7652.2005.00164.x), print publication January 2006.
Website: <http://www.blackwellpublishing.com/journal.asp?ref=1467-7644>
3. Prof. Steve Hughes Steve Hughes has 20 years experience as a research and innovation manager in the food, agriculture (plant breeding) and biotechnology industries. His current research focuses on the impact of advanced genomics-based tools for agronomy, plant breeding and food production on local agricultural practices. Website: <http://www.centres.ex.ac.uk/egenis/staff/hughes/index.php>