

Stricter EU GM labelling

The European Parliament has voted to introduce strict labelling on foods containing genetically modified (GM) ingredients. Under current EU rules, only food with more than 1% of GM ingredients has to be labelled.

The new proposals, which still need to be agreed by EU environment ministers, would mean that food containing GM derivatives which do not necessarily show up in testing, such as sugar and oils, would still have to be labelled.

But the parliament failed to agree on extra measures demanded by some Members of the European Parliament (MEPs) to label milk, meat and eggs from animals reared on GM feed.

Correspondents say the new rules are likely to cause a trade dispute with the United States, where the export of GM crops is worth billions of dollars.

Friends of the Earth has welcomed the vote, but those involved in the industry say the proposed rules would set them back by decades.

GM oilseed rape

Herbicide tolerant oilseed rape will be the leading GM crop seeking approval for commercialisation in the UK. Aventis is developing glufosinate-tolerant oilseed rape (Liberty Link) and maize varieties and Monsanto glyphosate-tolerant sugar beet (Roundup Ready) and fodder beet. A potential problem has arisen after years of GM rape cropping in which volunteer plants with multiple resistances develop; the conventional use of other contact herbicides such as paraquat and diquat would be the answer. A controversial problem that remains is the genetic contamination of neighbouring conventional crops.

GM pasture

Work being undertaken at the Department of Natural Resources and Environment in Melbourne, Australia could lead to commercially available GM pasture within two years. The work is targeted at increasing grass digestibility, reducing greenhouse gas emissions from cattle and sheep and allowing the rearing of more animals on less land. Meanwhile in the USA, GM grass has been sown at 14 secret locations at golf courses. The objective is

to introduce glyphosate-tolerance to creeping bent grass (*Agrostis stolonifera*) so that greens can be kept clear of weeds with over-the-top applications of Roundup.

Paper from GM trees

The first paper has been made from poplars genetically modified so that their lignin would break down more easily during the chemical pulping process, despite damage to the trees by environmental activists back in July 1999. Claire Halpin from the University of Dundee and colleagues have published results from field trials (*Nature Biotechnology*, 2002, 20, 607-612), which showed that the best variety of poplar required 6% less alkali to process, while pulp yield was up by 3%. The trees grew normally, although their roots decomposed more easily. Environmentalists have expressed concerns over the effect of GM trees on forest ecosystems, while others question the hardiness of the GM trees to insect attack.

First GM insect release

At a secret location in Arizona GM modified pink bollworms (*Pectinophora gossypiella*) have been released under netting in cotton fields. If successful this sterile insect would be further modified and released in cotton fields as an alternative to the use of GM cotton resistant to the bollworm. The modified insects will breed but produce no viable offspring

Increasing natural protection against light and heat

Peter Horton and colleagues of the University of Sheffield, UK, have increased the natural ability of the model plant thale cress to protect itself against intense light and heat. They engineered the weed to produce more xanthophylls, that divert damage from the build-up of reactive oxygen species (under conditions of intense heat and light) away from plant tissues onto itself.

It remains to be seen whether a similar approach will enable crops such as maize or potatoes to be grown in hotter, more exposed areas. But the study shows the potential of genetic engineering to boost a plant's processes without the introduction of foreign genes (*Nature*, 2002, 418, 203-206).

GM potatoes

Russian scientists at the Center of Bioengineering in Moscow have developed three varieties of potatoes resistant to Colorado beetles. The potatoes require extensive testing and approval is at least 3 years away. The issue of GM crops has not yet produced much public debate in Russia.

Intestinal DNA transfer

Five recent studies commissioned by the UK Food Standards Agency have shown that under highly artificial conditions there is an extremely low probability for DNA transfer into intestinal bacteria or cells (<http://www.foodstandards.gov.uk>)

Snippets

...the US House of Representatives has voted by a large majority for the passing of legislation aimed at supporting research on plant biotechnology. The bill will provide an investment total of \$26 M over the next 3 years and aims to provide regional plant genome research centres.

...a request by Aventis CropScience for a licence to run GM field trials of a herbicide-resistant oilseed rape has been rejected by Belgium. According to a health ministry statement, bees can transport pollen over 4 km, presenting a threat to conventional crops.

...workers at John Innes Centre in Norwich have reported the discovery of the gene that controls interactions between plants and micro-organisms. It is suggested that the gene may make the design of plants that can fix their own nitrogen easier than has been imagined.

...a tomato has been developed at Purdue University, Indiana, which has been genetically engineered to contain high levels of lycopene, an antioxidant considered by many to help prevent heart disease and some cancers.

...The European Union has ratified the Cartagena Protocol, agreed in 1999, which sets rules on exchanging information when trading GM commodities. It must be ratified by at least 50 of its 110 signatories to come into force.