

Phoenix to release new GM insect terminator

In summer 2001 Phoenix will carry out the first release of a genetically modified insect which should protect cotton against harmful insects. The GM insect, dubbed terminator by farmers, is sterile but sexually active and, it is hoped, will breed with the harmful insects thus reducing mating between non-sterile insects so that eventually there are no offspring. Around 3600 larvae will be released in a sealed field. The terminator has been given a fluorescent jelly fish gene in order that the process can be monitored. Greenpeace is opposed to the experiment, saying that because insects breed quickly mutations could arise which might be difficult to control. It also has doubts as to whether the insect is truly sterile.

GM maize in Austria

An EC scientific committee for plant evaluation has made public its opinion against the prohibition in Austria of a genetically modified (GM) maize which is tolerant to the herbicide glufosinate-ammonium (Liberty). The maize, supplied by Aventis, was approved by the EU in 1998. The committee reports that it can find no scientific justification for the ban. The Austrian government has argued that the maize may have a negative impact on the alpine ecosystem. This is the third time that an EC committee has been opposed to decisions made by member states regarding the banning of GM crops.

GM crops in China

In China several genome-research centres are being spun-off from state-run academies and institutes. Other Asian countries, notably Japan, Korea and Singapore are recognising China's potential and seeking collaborative projects. But such projects will suffer from a poor domestic legal framework, weak enforcement of intellectual property rights and poor compliance with international standards; for example, market analysts are sceptical about China's signing of the International BioSafety Protocol. There are concerns about the spread of genetically modified (GM) crops in China. The country has been cautious about edible GM crops but has

rapidly commercialised non-food crops such as GM cotton and tobacco.

DuPont seed ruling

A federal judge has determined that a licence held by DuPont to sell seeds containing Monsanto's Roundup herbicide-tolerant technology was terminated by DuPont's acquisition of Pioneer Hi-Bred on 1 October 1999. Monsanto says the ruling means that all sales of Roundup Ready soybean and canola seeds by Pioneer since October 1999 were unauthorised. DuPont is to appeal.

Syngenta funds sequencing of a key wheat pathogen

In an attempt to find leads for new, more specific and environmentally friendlier ways of protecting crops from attack by fungal pathogens, Syngenta has signed an agreement with Plant Research International on a project to sequence the genome of the pathogen *Mycosphaerella graminicola* (*Septoria tritici*). A key part of the project will also examine the interactions between the fungus and the pathogen with a view to its exploitation to develop wheat cultivars with a durable resistance to the pathogen.

Enhancing natural defence mechanisms

It has been known for many years that plants produce a number of natural chemicals that help to protect them from attack by insects and pathogens. Many of these chemicals are produced in trichomes on the leaves and recent work reported in *Nature Biotechnology* (April 2001) has demonstrated that modification of the levels of trichome-specific cytochrome P450 enzymes gave a 20-fold increase in the levels of diterpenes in the trichomes and this increased the plant's resistance to attack by aphids.

Mosquito genome to be sequenced

The 260 million base pairs of the mosquito (*Anopheles gambiae*) are to be sequenced in a joint programme between Celera Genomics and Genoscope. The genome will be broken into fragments and each piece

will be sequenced. Celera will then reassemble these into the complete genome. It is expected that the project will cost less than \$10 M and that it will be completed by the end of 2001.

Genes for resistance to soybean nematodes identified

Soybean cyst nematode causes losses of \$1 billion annually and they are very few varieties that show resistance to all 14 nematode races. Workers at the US Agricultural Research Service are examining soybean genes that are associated with resistance. Using microarrays, 1200 genes from six different soybean cultivars have been screened for activity in nematode challenged and nematode free plants. This technique allows the workers to identify all genes that are associated with nematode attack and thereby to isolate gene products that are important in resistance (and susceptibility).

UK "Farm Scale" Trials

Concerns have been expressed by environmental groups over GM maize to be grown in Warwickshire as part of the UK Government's official farm-scale trials. The site is within 2 miles of Europe's largest research center for organic crops at Ryton, near Coventry, by the Henry Doubleday Research Association. The centre is home to one of the world's foremost organic seed banks, and protestors fear possible contamination of the seed bank.

US biotechnology

Monsanto revealed that in the USA 54% of the soybean area and 61% of the cotton area in 2000 were sown to genetically modified (GM) crop varieties; equivalent figures as forecast by the US Department of Agriculture for 2001 are 63% and 64%. However, Monsanto's GM NewLeaf potatoes, modified to be resistant to Colorado beetle, have been withdrawn after McDonald's withdrew support.

Thailand halts GM crop trials

Thailand has extended its ban on the commercial growing of GM crops to cover their testing in the field. It is expected that the move will end trials by Monsanto on GM maize and cotton.

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