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Commercialisation of ICAR transgenics likely by 2008

Field trials completed for seven GM varieties

Harish Damodaran
New Delhi, July 24

The Indian Council of Agricultural Research (ICAR), increasingly under scrutiny for "not doing enough" in the field of genetically modified (GM) crops, claims that it is well on course towards commercialising its first set of transgenic varieties in the next couple of years.

Speaking to *Business Line*, the Director-General of ICAR, Dr Mangala Rai, said: "There are seven GM varieties on which field trials have been completed under the supervision of the Department of Biotechnology's Review Committee on Genetic Manipulation (RCGM)."

FIRST TRANSGENICS

He added: "This season we will be seeking the Genetic Engineering Approval Committee's (GEAC) permission to undertake large-scale trials and seed production. If all goes well, our first transgenics will reach the farmers' fields by 2008 or 2009."

The seven transgenics, which have crossed the RCGM-stage of approvals, include *Helicoverpa armigera* or American bollworm-resistant cotton, yellow stem borer-resistant rice, fruit and shoot borer-resistant brinjal, leaf curl virus-resistant tomato, protein-enriched potato, and salinity-cum-drought tolerant tomato and mustard.

GM BRINJAL

For cotton and rice, the ICAR and its public sector affiliates have used the cry1Ac gene – a variant of Monsanto's Bollgard, also derived from the soil bacterium, *Bacillus thuringiensis* (Bt) – while the GM brinjal incorporates the cry1Ab gene.

In potato, the gene deployed is AmA1, which is cloned from the protein-rich Amaranth seed (*ramdana*).

For imparting salinity and drought tolerance in tomato and mustard, the osmotin protein gene has been employed.

For leaf curl virus-resistant tomato, a "replicase gene in antisense construct" has been mobilised.

EXCELLENT BACKGROUNDS

According to Dr Rai, one advantage of the ICAR system's GM products would be the "excellent backgrounds" in which the alien genes are being incorporated.

"One reason for Bt cotton not performing up to expectations everywhere is the poor background of the underlying hybrids. In our case, we have chosen in-bred varieties that are certified and very popular among farmers."

For cotton, the varieties that have been genetically transformed are Bikaneri Narma, LRA-5166, Sahana, and RG-8; Kufri Chipsona-1, Chipsona-2 and Badshah for potato; Pusa Jaikisan for mustard; Pusa Purple Long for brinjal; and Pusa Early Dwarf and Pusa Ruby for tomato.

TO INDUCE COMPETITION

Expeditious commercialisation of GM crops in the public sector is expected to benefit farmers in the long run, as it would induce competition.

So far, the Government has approved 59 GM hybrids (all cotton) for commercial release.

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