

New gene that may help reduce risk of GM crops identified

Toronto, Feb 21:

Researchers, including those of Indian-origin, have identified a gene that may help reduce contamination of conventional crops by genetically modified (GM) crops. The plant gene discovered by the University of Guelph scientists might help farmers reduce the risk of GM contamination and quell arguments against the use of transgenic food crops, Sherif Sherif, lead author of a new research paper describing the findings, said.

This is believed to be the first-ever study to identify a gene involved in altering fruit trees that normally cross-pollinate — needing one plant to fertilise another — into self-pollinators, he said.

Sherif said researchers might one day insert this gene into GM crops to prevent their pollen from reaching other plants.

“There are a lot of transgenic crops worldwide,” said plant agriculture professor Jay Subramanian, Sherif’s PhD supervisor and a co-author on the paper.

“There is concern about pollen from them being able to fertilise something in the wild population, thus creating ‘super weeds,’” Subramanian said.

The researchers found a gene making a protein that naturally allows a small handful of plants to self-pollinate and make fruit before the flower opens.

Peaches, for example, have closed flowers, unlike their showy-flowered plum and cherry cousins that need pollen from another tree to fertilise and set fruit.

Other co-authors on the paper are Guelph professors Jaideep Mathur, Department of Molecular and Cellular Biology and Gopi Paliyath, from Department of Plant Agriculture, along with Islam El-Sharkawy, a former research associate with Subramanian; and colleagues at the National University of Singapore.

Besides aiding crop farmers and food producers, their discovery might be a boon to perfume-makers, Subramanian said.

Used in fragrant perennials such as jasmine, the gene might keep flowers closed and allow growers to collect more of the aromatic compounds prized by perfume-makers.

“That’s when volatile compounds are peaking. When the flower opens, you lose almost 80 per cent of those volatiles,” said Subramanian.

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