

Technology to detect GM products in India

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Scientists argue that genetically modified (GM) crops are engineered to convey favorable traits such as disease resistance. However, at the same time, the labeling and identification of genetic modifications in commercial products have become a global concern. In India, the ministry of consumer affairs, food and public distribution on January 1, 2013, formally implemented a rule which stipulates that every package containing food derived from products of biotechnology shall bear at the top of its principal display panel the letters "GM".

With this kind of regulation in place, it is the implementation part that has become important for the authorities. At present, in India, there is availability of a technology that may be of help to the industry, especially agri-biotech sector and the regulators. This technology "Fluidigm Biomark HD System with Dynamic Array Integrated Fluidic Circuits (IFCs)" priced between Rs1-2 crore depending on the specific system, has been brought to India by New Delhi-based Premas Lifescience, the biosupplier division of Premas Biotech.

The researchers through a study have claimed to demonstrate the utility of this system, which is also called as qdPCR 37K (37K) IFCs for real-time GM detection. The real time analysis provided Ct values that identified false positives and provided greater data confidence. They used *Gossypium hirsutum* genome (cotton; C=2.40; GM free) and GM event GHB 614 (614) detected by their respective TaqMan assays, to determine the limit of GM detection on the 96.96 IFC and 192.24 IFC for real-time PCR and the 37K IFC for quantitative digital PCR (qdPCR). In this case the pre-amplification was not found to be necessary. The study has concluded that the system enabled fast and accurate methods of low-level GM contamination detection in a high background of GM-free plant gDNA.

The executive director of Premas, Mr Praveen Gupta looks at it as an important step towards offering choice to consumers. Revealing his targeted market to BioSpectrum, he explained, "The market we are looking at includes seed companies, GMO testing labs, agri-genetics research universities and institutes. The technology will be used to assure purity and segregation of different events and to trace the genetic modifications by the seed companies and food industry. Also the enforcement agencies can use it to ensure compliance with legislation."