

## The Year of Bt cotton

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Undoubtedly, Mahyco Monsanto Biotech (India) is the market leader as it was the only one with the government's permission to sell Bt cotton in 2003-04. Its Bollgard sales were close to 216,000 packets during the year. Its business on account of sales, royalty, and co-licensing was Rs 54 crore. Only the seeds sales were to the tune of Rs 36 crore.

Though Mahyco was the only one allowed to sell Bt cotton seeds, illegal seeds too found their way into the farms. The exact area of field cultivation was not available. Farmers were found to be using hybrid Bt cotton seeds sold under different brands. When the Central Institute of Cotton Research (CICR), Nagpur carried out PCR and ELISA tests on these cotton seeds confirmed that they had tested positive for the presence of Cry 1 Ac gene. These were not approved by the regulator, the Genetic Engineering Approval Committee (GEAC). But Mahyco estimates that Bt cotton was cultivated in nearly 92,000 hectares.

This July, approvals for trials and commercial production of several hybrids of Bt cotton were given. GEAC has also approved large-scale field trials and seed production for 12 varieties of Bt cotton hybrids developed by Rasi Seeds and Ankur Seeds. These have licensed the technologies from Monsanto. Rasi seeds has launched its cotton recently. The company has priced the packet at Rs 1600. While Mahyco is Monsanto's partner in India, Rasi Seeds and Ankur Seeds are the sub-licensees of Monsanto. Others like Nuziveedu and Prabhat agri have also opted for the germplasm from Monsanto. GEAC has recently permitted Nuziveedu to conduct large-scale trials incorporating a Bt gene for two of its cotton hybrids, NCS 145 and NCS 207. The trials are on for the two Bt varieties. It plans to release the new hybrid Bt varieties in 2005. Further, Nath Seeds, Indo-American seeds, etc., are considering licensing technology from others like Syngenta. Metahelix, a Bangalore-based agribiotech company, is developing its own version, which will be submitted to the GEAC for approval this year.

Certainly seed companies have realized that they have to adapt quickly to the changing market demands. That is why several of them are going to the Monsantos of the world to license the germplasms. Interestingly, some of them are working with multiple companies. Nuziveedu is working with Monsanto, National Botanical Research Institute (NBRI), Lucknow and Metahelix. India's own Bt gene too is ready for transfer. NBRI synthesized two new Bt genes and licensed it to a consortium of seven Indian seed manufacturing companies-Swarna Bharat Biotechnics Pvt Ltd (SBBPL).

While the transgenic seeds market is booming, the biopesticides market has been growing moderately. Biotech International, the largest biofertilizers and biopesticides company, has grown by about 30 percent to Rs 20 crore in 2003-04. But some of the others have grown marginally. The total market for the biopesticides and biofertilizers alone is estimated at Rs 80 crore.

India is emerging as an important destination for biomarkers and validation services too. According to some estimates, the cost of developing a technology in India is quite small. In the US, while the total cost including the development of gene, transformation, screening and regulatory works out to Rs 200 crore. The same in India would work out to Rs 10 crore. About 50 percent of this figure accounts for regulatory approvals. Looking ahead, this year the industry could see four to five companies selling Bt cotton seeds and it is very likely that the Bt cotton seeds would see close to 40 percent rise in sales.