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The chequered story of Bt cotton

Hyderabad, March 22

The story of Bt cotton in India is riddled with twists and turns. Those who are pro-Monsanto and those who oppose it have been engaged in animated arguments ever since the GM seed was introduced by the multinational through Mahyco in 2002. The GM cottonseed vertically split seed companies, the scientific community, farmers and NGOs, with both the sides supporting and opposing the genetic manipulation of the seed.

Bt cotton: how it flowered and is losing lustre now

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The story of Bt cotton in India is full of twists and turns. Those with Monsanto and those opposing it have been at loggerheads ever since the GM seed was introduced by the multinational, through Mahyco, in 2002.

"The first two years of Bt cottonseed had not been encouraging. It didn't take off as the initial hybrids that used the Bollgard-I (or BGI) technology were old. The results were not very great," Ram Koundinya, who has been a staunch supporter of the GM seed, told *BusinessLine*.

Once deployed in a variety of hybrids in subsequent years, it never looked back. Bt cotton spread like wildfire and every cotton growing area quickly adopted the BGI seed. There was hardly a farmer who had not used the new-generation seed.

"Adoption reached its peak in 2007-08, and from a net importer of cotton in 2002, the country emerged as an exporter of the fibre by 2008-09. This was possible because of the adoption of biotechnology," says Ram Koundinya, Managing Director, Advanta

India Ltd, who is associated with the Association of Biotech Led Enterprises-Agriculture Group (ABLE-AG).

Acres jumps

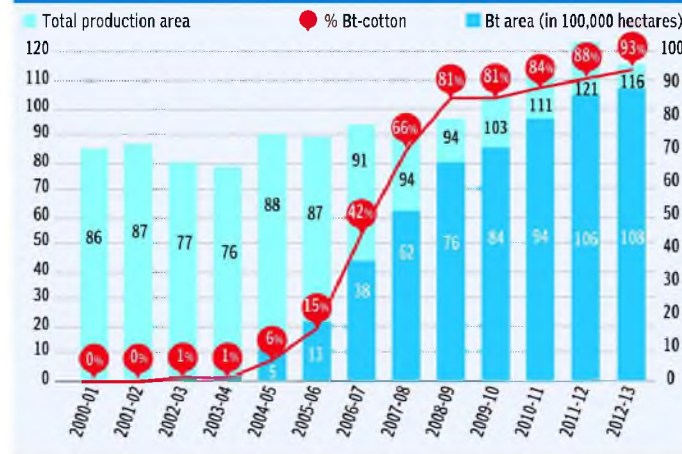
Cotton cultivation increased from 45,000 hectares in 2002-03 to an estimated 80 lakh hectares in 2008, owing to the adoption of Bt cotton.

While a section of scientists embraced the technology, some other scientists and NGOs launched a spirited attack on Monsanto and Mahyco Monsanto (which sub-licensed the seed to Indian firms), blaming the technology for the acute agrarian crisis in cotton-growing States such as Maharashtra and Telangana.

"Bt cotton is all false claims and lack of liabilities. Cattle death in Warangal, pink bollworm resistance in several States and contamination of genetic diversity all show how science fails us when driven by greedy business interests," says GV Ramanjaneyulu, Chief Executive Officer of the Centre for Sustainable Agriculture (CSA) and a bitter critic of GM cottonseed.

On the other hand, ABLE-AG, an

Blooming acreage



Source: Industry Statistics

association of biotech-led seed firms, has been arguing that Bt cotton has changed the fortunes of farmers by significantly reducing input costs.

The Centre for Economic and Social Studies (CESS) had carried out a study on the economic impact of Bt cotton about seven years ago.

It said yields had gone up and cost of production had come down after farmers shifted to Bt

cotton. According to the study, yields went up by 32 per cent in 2004-05 for Bt cotton vis-à-vis non-Bt cotton.

The study found that the cost of production had come down to ₹1,563/quintal in 2006-07 from ₹2,012 a couple of years earlier.

The worm strikes back

Call it negligence or lack of interest by seed companies, almost all of the Bt cotton area went without

refugia (cultivation of non-cotton or non-Bt crops around the main crop), which led to the worm developing resistance to the technology, resulting in huge losses to farmers.

Monsanto quickly launched BG-II to win back the confidence of farmers. However, no lessons were learnt from the bitter experience, and farmers lacked awareness about the importance of sowing refugia crops.

BG-II, too, fell prey to the virulent pink bollworm, leaving farmers with virtually no defence.

Legal, regulatory issues

Scores of legal cases are pending in different High Courts, with Monsanto and Mahyco Monsanto on one side and farmers' unions and State governments on the other fighting over the quantum of royalty to be paid to the seed firms. The most recent one is Mahyco Monsanto's plea in the Delhi High Court challenging the Centre's Cottonseed Price Control Order.

The 15-year-old journey of Bt cotton is beset with endless regulatory and legal issues, too. Regulator GEAC (Genetic Engineering Ap-

proval Committee under the Union Ministry of Environment and Forests) has also been at the receiving end of criticism from GM technology detractors.

They allege that permissions are shrouded in secrecy, denying the public the right to know what is happening on the GM front.

While several State governments and farmers' unions have waged pitched battles against Monsanto on the quantum of royalty, the BG-II licensee firms want a higher share from the profits as their hybrids were at the heart of the Bt success.

NSAI argument

The National Seed Association of India (NSAI) has argued that the government must have a pipeline of technologies in place to avert such situations. Monsanto restricts seed licencees from using other technologies.

"The seed firms were forced not to try other alternative technologies, leading to monopoly. It also led to the faster development of resistance by the worm. The government should encourage alternative technologies," says NSAI President M Prabhakara Rao.