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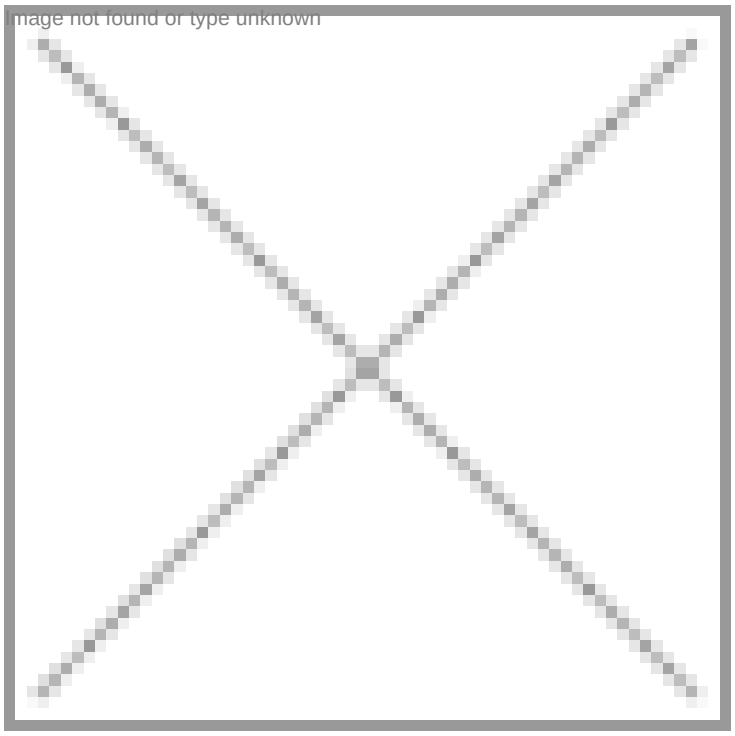
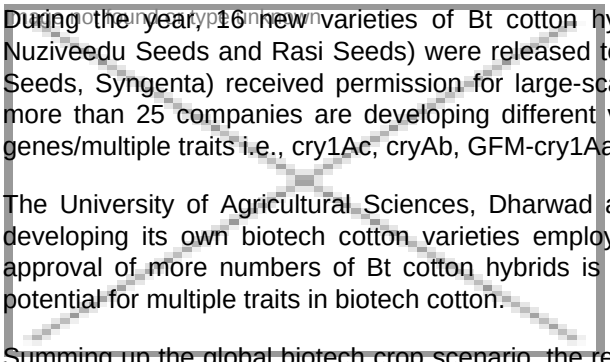


BioAgri

India shows three fold increase in acreage of Bt cotton: ISAAA

Indian farmers plant 1.3 million hectares of biotech cotton, up 160 percent from 2004

India experienced the highest yearly percentage growth rate increasing its Bt cotton area by 160 percent in 2005. The country displayed the largest proportional growth, nearly three-fold, by planting 1.3 million hectares of Bt cotton in 2005 compared to 500,000 hectares in 2004, according to a report authored by Dr Clive James, chairman and founder of ISAAA, the International Service for the Acquisition of Agri-biotech Applications. Around 10 lakh resource poor farmers elected to plant Bt cotton in the northern, central and southern cotton growing zones which is a three-fold increase over 2004. Overall the country grew to the seventh largest adopter of biotech crop, the report revealed.



Source: Clive James, 2005

During the year, 16 new varieties of Bt cotton hybrids belonging to four companies (Ankur Seeds, Mahyco-Monsanto, Nuziveedu Seeds and Rasi Seeds) were released totaling to 20 Bt cotton hybrids. Three companies (JK AgriGenetics, Nath Seeds, Syngenta) received permission for large-scale field trials of biotech cotton with different genes in 2005. Presently, more than 25 companies are developing different varieties of biotech cotton hybrids with different genes and with staked genes/multiple traits i.e., cry1Ac, cryAb, GFM-cry1Aa, Vip-3a, cry1Ac+cry2Ab said the report.

The University of Agricultural Sciences, Dharwad along with the Central Institute for Cotton Research (CICR), Nagpur is developing its own biotech cotton varieties employing Bt gene and is likely to be made available to farmers soon. The approval of more numbers of Bt cotton hybrids is likely to grow further in 2006 and researchers are exploring the future potential for multiple traits in biotech cotton.

Summing up the global biotech crop scenario, the report stated that worldwide farmer demand has driven annual double-digit increases in biotech crop adoption since the crops were commercialized a decade ago. In 2005, four new countries and a quarter million more farmers planted biotech crops as part of an 11 percent increase in global biotech crop area. Since initial commercialization in 1996, global planted area of biotech crops has soared by more than fifty-fold from 1.7 million hectares in six countries to 90 million hectares in 21 countries in 2005. The 8.5 million farmers planting biotech crops in 2005 also marked a significant milestone as the 1 billionth cumulative acre or 400 millionth hectare was planted.

Commenting on the adopted traits, it said that the herbicide-tolerant soybeans continue to be the most widely adopted trait, accounting for 60 percent of the total global area. Varieties with stacked traits are growing in popularity, accounting for 10 percent of the global area. In 2005, 100 million "trait hectares" were planted, which better quantifies those hectares planted to varieties with multiple biotech enhancements.

"Farmers from the United States to Iran, and five EU countries demonstrate a trust and confidence in biotech crops, as indicated by the unprecedented high adoption rate of these crops," said Dr James. "The continued expansion of countries growing biotech crops also bears witness to the substantial economical, environmental and social benefits associated with these crops."

Notably, in 2005 Iran grew its first crop of biotech rice, the first biotech planting of this important food crop globally. The Czech Republic planted Bt maize for the first time, bringing the total number of EU countries growing biotech crops to five with Spain, Germany and the Czech Republic being joined by France and Portugal, which resumed planting biotech maize after four and five year gaps respectively. This could signal an important trend in the EU.

Two-thirds or 14 of the 21 countries growing biotech crops achieved "mega-country" status by planting 50,000 hectares or more in 2005, including the US, Argentina, Brazil, Canada, China, Paraguay, India, South Africa, Uruguay, Australia, Mexico, Romania, the Philippines and Spain.

Brazil experienced the most significant growth, increasing its biotech soybean area by 88 percent to reach a provisional 9.4 million hectares in 2005. In India researchers are working on several Genetically Modified (GM) food crops. A total 14 field, vegetable and commercial crops are under advanced stage of development at various institutions in India such as rice, mustard, maize, sorghum, tomato, potato, groundnut, cauliflower, cabbage, chickpea, okra and pigeonpea. The GM eggplant is under near term approval.

State-wise adoption of Bt cotton in India

State	2004 (ha)	2005 (ha)	Rank 2004	Rank 2005
Total	500,000	13,00,000		
Maharastra	200,000	590,000	1	1
Gujarat	130,000	150,000	2	3
Madhya Pradesh	85,000	145,000	3	4
Andhra Pradesh	80,000	280,000	4	2
Karnataka	15,000	30,000	6	6
Tamil Nadu	10,000	25,000	6	7
Northern Zone (Punjab, Hr, Raj)	N/A	60,000	N/A	5

When biotech crops were first commercialized, critics suggested the technology would never be valuable in the developing world. Now, resource-poor farmers in developing countries account for 90 percent of the 8.5 million growers who benefit from biotechnology, while developing nations represent more than one-third of 2005 global biotech area.

"Biotech crops have increased the income of 7.7 million resource-poor farmers in China, India, South Africa, the Philippines and seven other developing countries, helping alleviate them from abject poverty," Dr James said. "The broader commercialization of biotech rice, the most important food crop of the world's 1.3 billion poor and the 850 million hungry and malnourished, can further this effort. Biotech rice could make a substantial contribution to the formidable UN Millennium development goal of reducing poverty, hunger and malnutrition by 50 percent by 2015."

Dr James indicated the future looks promising for continued increases in adoption levels in the next decade.

"I am cautiously optimistic the stellar growth experienced during the first decade of commercialization will not only continue but will be surpassed in the second decade," he said. "The number of countries and farmers growing biotech crops is expected to grow, particularly in developing countries while second-generation input and output traits are expected to become available," he added.

According to the report, other indicators of continued growth include China's expected near term adoption of biotech rice, more nutritional biotech food and feed, products and the anticipated introduction of novel crop products used as renewable resources for more sustainable and affordable production of biofuels. ISAAA projects the global value of the biotech crop market to increase from $5.25 billion in 2005 to $5.5 billion in 2006.