



# Global Adoption of Plant Biotechnology

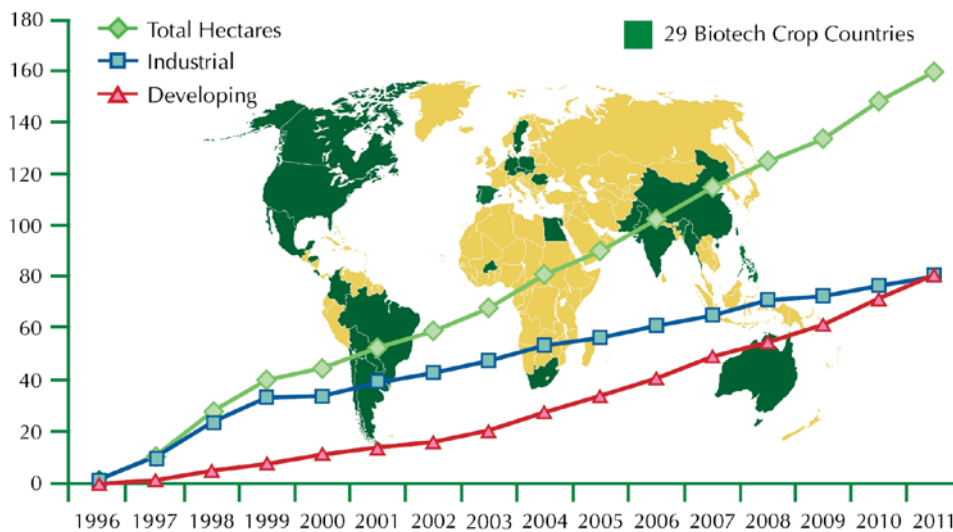
“Prior to the use of biotech cotton, we had nominal production of about 20 quintals per acre and we faced many difficulties since income was inadequate. But after we started planting biotech cotton, our lives are markedly different. Our production has increased to 15-20 quintals per acre.”

– Gogineni Brahmayya, cotton farmer in Ravipadu Village, Andhra Pradesh

**P**lant biotechnology has been adopted at a higher rate than any other agricultural practice in history. In 2011, biotech crop varieties were grown by 16.7 million farmers on 160 million hectares in 29 countries, including 19 in the developing world. This represents a 94-fold increase in hectarage since 1996. This remarkably high adoption rate applies to both large and smallholder farmers. In fact, developing countries, including India, represent the largest growth segment of biotech crop plantings, adopting the technology twice as fast as industrialized countries in recent years.<sup>1</sup>

In India, biotech cotton varieties have been cultivated for a decade with impressive growth rates and notable benefits. Since first being grown there in 2002, plantings of *Bacillus thuringiensis* (*Bt*) cotton have increased from 50,000 hectares to more than 10.6 million in 2011 – a 212-fold increase.<sup>1</sup> Biotech cotton varieties have also decreased pesticide applications and improved incomes for 7 million smallholder farmers. In addition, *Bt* cotton has helped transform India from an importer of cotton to the second largest producer of this crop in the world.<sup>2</sup> It is also now India’s most profitable crop. New biotech varieties in India have the potential to offer similar benefits to farmers, families and communities in the future.

## Global Area of Biotech Crops Million Hectares (1996-2011)



A record 16.7 million farmers, in 29 countries, planted 160 million hectares (395 million acres) in 2011, a sustained increase of 8 percent or 12 million hectares (30 million acres) over 2010.

*Source: International Service for the Acquisition of Agri-biotech Applications*

## » FAST FACTS

### Worldwide:

- From 1996 to 2011, farmers in 29 countries worldwide planted more than 1.25 billion hectares of biotech crops.<sup>1</sup>
- Of the 16.7 million farmers growing biotech crops in 2011, 15 million were smallholder farmers in developing countries.<sup>1</sup>
- More than 90 percent of farmers repurchase biotech seed year-after-year due to successful results.<sup>3</sup>

### India:

- Since *Bt* cotton was introduced, the number of cotton farmers in India has increased by 60 percent.<sup>1</sup>
- In 2011, for the first time, plantings of *Bt* cotton in India surpassed the historical milestone of 10 million hectares, occupying 88 percent of the record 12.1 million hectare cotton crop.<sup>4</sup>
- The average Indian *Bt* cotton farmer grows 1.5 hectares of the crop.<sup>1</sup>

<sup>1</sup> James, Clive. 2011. Global Status of Commercialized Biotech/GM Crops: 2011. ISAAA Brief No. 43. ISAAA: Ithaca, NY. <http://www.isaaa.org/resources/publications/briefs/43/executivesummary/default.asp>

<sup>2</sup> Brookes, Graham and Barfoot, Peter. 2012. Forthcoming. GM Crops: Global socio-economic and environmental impacts 1996-2010, PG Economics Ltd, Dorchester, UK.

<sup>3</sup> Biotechnology Industry Organization Fact Sheet. "Agricultural Biotechnology Delivering Benefits for

Farmers, Consumers, and the Environment." [http://www.getbiotechsmart.com/sites/default/files/student/agricultural\\_biotechnology\\_delivering\\_benefits\\_for\\_farmers\\_consumers\\_and\\_the\\_environment.pdf](http://www.getbiotechsmart.com/sites/default/files/student/agricultural_biotechnology_delivering_benefits_for_farmers_consumers_and_the_environment.pdf)

<sup>4</sup> Choudhary, Bhagirath and Guar, Kadambini. 2010. "Bt Cotton in India: A Country Profile." [http://www.isaaa.org/resources/publications/biotech\\_crop\\_profiles/bt\\_cotton\\_in\\_india-a\\_country\\_profile/download/Bt\\_Cotton\\_in\\_India-A\\_Country\\_Profile.pdf](http://www.isaaa.org/resources/publications/biotech_crop_profiles/bt_cotton_in_india-a_country_profile/download/Bt_Cotton_in_India-A_Country_Profile.pdf)

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