In 2015, China planted 3.7 million hectares of biotech crops: 3.7 million hectares of biotech cotton, 7,000 hectares of virus resistant papaya, and 543 hectares of Bt poplar.

Bt cotton was planted by an estimated 6.6 million small, resource-poor farmers in China in 2015.

The total biotech cotton plantings in China in 2015 were estimated at ~3.7 million hectares, which is 96% of its 3.8 million hectares total national cotton area.

The adoption rate of Bt cotton in China was estimated at 96% in 2015, compared to 93% in 2014.

Virus-resistant biotech papaya plantings decreased from 8,475 hectares in 2014 to 7,000 hectares in 2015 due to over supply of papaya in 2014, but the adoption rate remained high at ~90%.

Guangdong is the main province for papaya production in China. Hainan Island planted in 2012, and Guangxi province in 2014.

Bt poplar has been planted in China since 2003. By 2015, 543 hectares of poplar have been planted.

The economic benefit to China from biotech cotton for the period 1997 to 2014 is US$17.5 billion and US$1.3 billion for 2014 alone.

China has planted Bt cotton since 1997, as well as small hectarages of GM papaya and poplar. Biosafety certificates for Bt rice and phytase maize were issued in 2009, which were renewed in late 2014. In 2015, Bt cotton plantings decreased to 3.7 million hectares, compared to 3.9 million hectares in 2014.

**COUNTRY PROFILE**

Population: 1,376 million  
GDP: US$8,227 billion  
GDP per Capita: US$6,900  
Agriculture as % GDP: 10%  
Agricultural GDP: US$822.7 billion  
% employed in agriculture: 35%  
Arable Land (AL): 114.7 million hectares  
Ratio of AL/Population*: 0.4

Major crops:  
- Rice, paddy  
- Sweet potato  
- Vegetables, fresh  
- Cotton  

Commercialized Biotech Crops:  
- Bt Cotton  
- Bt Poplar  
- PRSV Papaya

Total biotech crop area and (%) increase in 2015:  
3.7 Million Hectares  
(-5%)  
Increased farm income, 1997-2014: US$17.5 billion

*Ratio: % global arable land / % global population
Agricultural Sciences are developing a high yielding salt tolerant rice variety. The initial results showed that the biotech rice could produce 6 tonnes per hectare. The harvest in October 2013 also showed one variety has similar output as those varieties grown in normal farmlands.

China's homegrown biotech maize (Bt or phytase maize) will be commercialized in the next three years, opening up an enormous potential market of 35 million hectares of maize. Biotech crops could help China become less dependent on increasing imports of soybean and maize, over 90% of which are biotech.

**FUTURE PROSPECTS**

Origin Biotechnology, a subsidiary of Origin Agritech Ltd., has reached a comprehensive, worldwide agreement with the Institute of Plant Protection, Chinese Academy of Agricultural Sciences (CAAS) for the exclusive rights of the Bt gene developed by CAAS. Origin Biotechnology has the rights to this genetic trait in China, and has been passing this product through the Ministry of Agriculture regulatory trials.

Scientists at Hainan University and Hunan Provincial Academy of Agricultural Sciences are developing a high yielding salt tolerant rice variety. The initial results showed that the biotech rice could produce 6 tonnes per hectare. The harvest in October 2013 also showed one variety has similar output as those varieties grown in normal farmlands.

China's homegrown biotech maize (Bt or phytase maize) will be commercialized in the next three years, opening up an enormous potential market of 35 million hectares of maize. Biotech crops could help China become less dependent on increasing imports of soybean and maize, over 90% of which are biotech.

**BENEFITS FROM BIOTECH CROPS IN CHINA**

A study led by KM Wu in 2008 suggested that the potential number of small farmers actually benefiting indirectly from Bt cotton in China might be 10 million more, which was confirmed by a separate study led by WD Hutchinson in 2010. The research estimated that the 10 million beneficiary farmers are those cultivating 22 million hectares of crops other than cotton, which also host cotton bollworm, but where infestations have decreased to up to 10-fold, because of lower infestations in Bt cotton.

The most promising benefit that the farmers derived from Bt cotton adoption is the reduction of pesticide use, which was evident in all of the four provinces. In Hebei, where the adoption rate for Bt cotton is at 100%, the farmers now spray pesticide only 4 times compared to more than 25 times before adopting Bt cotton. Majority of farmers also reported that planting Bt cotton enabled them to use less labor input, but higher yield with good cotton quality. This reduced their farming cost compared to the conventional cotton.

Based on studies conducted by the Center for Chinese Agricultural Policy (CCAP), it was concluded that at the farm level, Bt cotton increases yield by 10%, reduces insecticide use by 60%, and generates a substantial US$220 per hectare increase in income which makes a significant contribution to their livelihood as the income of many cotton farmers can be as low as around US$1 per day (Jikun Huang, 2008, Personal Communication). At the national level, it is estimated that increased income from Bt cotton was approximately US$1 billion per year in 2011.

**SOURCES**


For more information, contact:

ISAAA SEAsiaCenter
GS Khush Hall, IRRI
Los Baños, Laguna 4031 Philippines
Telefax: +63 49 5367216
Email: knowledge.center@isaaa.org

www.isaaa.org