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FACT SHEET

PEST RESISTANT EGGPLANT: INDIA, BANGLADESH, PHILLIPINES

EGGPLANT BORER PESTS

Although the eggplant is a valuable crop grown in S. Asia, the UN Food and Agriculture Organization observes that eggplant crop productivity remains relatively low in these areas. The climate in this region unfortunately makes eggplants susceptible to many pests, the most troublesome being fruit and shoot borers (FSB). These insects can reduce yields by 50% and force farmers to apply heavy amounts of pesticide. Significant losses may still occur with pesticide applications.

Eggplant in India

BIOTECHNOLOGY

USAID, in cooperation with the Maharashtra Hybrid Seed Company (MAHYCO) and Cornell University, has been funding the development of fruit and shoot borer resistant varieties of eggplant. These crops have been bioengineered to naturally produce *Bacillus thuringiensis* (Bt) derived proteins which are toxic to fruit and shoot borers, similar to the Bt pesticide sprays also used in organic farming. Furthermore, these varieties will be made available on a royalty-free basis to smallholder farmers through a novel public-private partnership.

REGIONAL IMPACT

Researchers estimate that farmers growing the new Bt eggplant varieties could obtain yield increases of 30-45%. As a result of current population and production levels, this technology will have the greatest impact in India where eggplant is cultivated on 1.3 million hectares. Combining increased yield, production and price, the total yearly benefits from Bt eggplant could exceed $65M in India.

FSB Infested Eggplant (from news.cornell.edu)

PROJECT STATUS

Numerous field trials have been conducted by MAHYCO and public sector partners demonstrating the efficacy and safety of pest resistant eggplant varieties. Bt eggplant is awaiting commercial approval in India after recently receiving a positive safety determination by the Government of India's Genetic Engineering Approval Committee (GEAC), and it is also undergoing final stage regulatory trials in Philippines and Bangladesh. This would be the first biotech crop commercialized through a public-private partnership in India, making it a good model for further agricultural advancements in the region.

USAID Partner Organizations: Cornell University (USA), Bangladesh Agricultural Research Center, Bangladesh Agriculture Research Insititute, East West Seeds Ltd. (Bangladesh), Indian Government, Indian Institute of Vegetable Research, International Service for the Acquisition of Agribiotech Applications, Maharashtra Hybrid Seed Company (India), Sathguru Management Consultants Pvt. Ltd. (India), Tamil Nadu Agricultural University (India), University of Agricultural Sciences, Dharwad (India), University of the Philippines

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