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Expert Opinion - K K Narayanan

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Replicate Bt cotton success

Rational policies and bold decisions are the need of the hour.

The advent of Bt cotton has revolutionized the cotton economy in the country. From a net importer, the country became the largest exporter of cotton. The technology revolution in cotton has to be replicated in other crops. The productivity gains of our food crops in the last couple of decades have been distressingly low; well below the growth in demand. It is high time that there is a significant infusion of genetic technologies, which, by the way, are already available, in these crops in order to meet the growing food demand, and also to liberate our agricultural production from the clutches of climatic vagaries. However, there seems to be some insurmountable problems standing between the new technologies and Indian agriculture. Ever since the needless controversy on Bt brinjal erupted, the development of new GM traits in crops has been virtually stalled.

The number of people going hungry in this country, which is already over 300 million, will explode unless we increase the production of our staple cereal by three-four percent per year for the next couple of decades. We have to double our food production by 2025 in order to avoid a serious food crisis. We have to necessarily increase productivity as more arable land is not simply there. Technology can play a major role in increasing productivity, either by enhancing the inherent capacity of the plant to produce more useful

biomass or by reducing losses; the latter is the case with Bt cotton.

Several technologies in food crops which have the potential to increase productivity are stuck in the regulatory pipeline in our country. For example, Bt rice has been developed by a few institutions in the country, including some public ones. These carry genes similar to the ones in Bt cotton that confer resistance to certain groups of insects that cause serious crop losses. One of the major pests that can be controlled by this technology is the Yellow Stem Borer, which can cause from 5-30 percent yield loss. The farmer normally applies a systemic insecticide which can cost up to 2,500 per hectare. Bt-rice can potentially protect the rice crop from this rice pest; however, such technologies will never reach the farmer unless they are tested and found to be safe and efficacious.

While evaluating any technology for its risks, it is also imperative to balance it with the benefits. If the technology is approved for commercial cultivation, say, today, it could spread to about 10 percent of the total rice area in the country in the next three years, that is by 2015, even by a conservative assumption. Given that we have 44 million hectare of rice in the country, the value addition just in terms of cost saved on pesticides will be of the order of over 1,000 crore every cropping season. If the entire rice area is covered by this technology, which is not entirely unimaginable if we go by the Bt cotton story, then the value addition will be more than 10,000 crore every cropping season. With a better value realization from the crop the farmer will invest in better agronomic practices which will enhance productivity, as has happened with Bt cotton. And, all this value directly goes into the pockets of millions of rice farmers in the country.

- Dr K K Narayanan, managing director, Metahelix Life Sciences