GOVERNMENT OF INDIA
AGRICULTURE
LOK SABHA

UNSTARRED QUESTION NO:3018
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GM CROPS
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Will the Minister of AGRICULTURE be pleased to state:

(a) the findings of the research and impact of Genetically Modified (GM) seeds in production of crops and vegetables;

(b) the reaction of farmers from different States in favour or against GM technology and the steps taken to educate farmers about the new technology;

(c) whether the Union Government proposes to allow trials of GM food and vegetable production with adequate safeguards and take steps to study and generate data on socio-economic impact of large scale production of GM crops, food and vegetables by taking farmers and consumers into confidence;

(d) if so, the details thereof;

(e) whether the farmers are being discouraged to use the local seeds and to exchange them with other farmers; and

(f) if so, the details thereof alongwith the steps taken to preserve all varieties of local seeds?

Answer

MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE, FOOD PROCESSING INDUSTRIES AND PARLIAMENTARY AFFAIRS (SHRI HARISH RAWAT)

(a): Bt. Cotton is the only crop approved for commercial cultivation in nine states by Genetic Engineering Approval Committee (GEAC) notified as per the provisions of 'Rules 1989 for the Manufacture, Use/Import/Export and Storage of Hazardous Micro Organisms/Genetically Engineered Organisms or Cells' under the Environment (Protection) Act, 1986.

The finding of laboratory and field studies conducted and also commissioned by Central Institute for Cotton Research (CICR), Nagpur showed that Bt. Cotton was toxic to bollworms but did not have any direct effect on any of the non-garget beneficial insects and was also non-toxic to, birds, fish, cow, goat and soil micro-organisms. Studies conducted by CICR showed that Bt. Cotton has been playing a major role in effectively protecting the crop from bollworms, especially the American Bollworm, Helicoverpa armigera, thus preventing yield losses. The biggest gain from the technology was in the form of reduced insecticide usage from 46% in 2001 to less than 26% after 2006 and 21% during the last two years 2009 and 2010. The introduction of Bt. Cotton hybrids has helped in production increase from 156 lakh bales (170 kg lint per bale) in 2001 to an estimated 356 lakh bales in 2011. Bt. Cotton was introduced in 2002 and the area increased from 0.29 lakh hectare in 2002 to 95.04 lakh hectare in Kharif 2011 (target). The productivity was 309 kg per hectare in 2001 before the introduction of Bt. Cotton which increased to 495 Kg/ha in 2010.

(b): Studies conducted by CICR showed that there was enormous farmer support for Bt. Cotton as is evident from the fact that more than 90% of the area in all the cotton growing states in India is now under Bt. Cotton. A total number of 250 farms were sampled from each of the cotton growing states to assess yield benefits and reduction in pesticides. Maximum gains in yield increase have been obtained in Gujarat, Andhra Pradesh, Maharashtra, Haryana, Punjab and Tamilnadu. On an average the net profits due to the cultivation of Bt. Cotton ranged from Rs.6,000 to 10,000 per hectare in Maharashtra and Rs.12,000 to 14,000 in Punjab, Gujarat and Haryana due to enhanced yield and reduction in pesticide usage. There have been a few stray reports of opposition to the technology from NGO groups, but these have had a miniscule impact on the spread of Bt. Cotton in India. Farmers are being constantly educated by CICR, SAUs, KVKs through Front Line Demonstrations and training programmes on all aspects pertaining to GM crops, its bio-safety and suitable methods for harnessing sustainable benefits through appropriate crop production technologies.

(c) & (d): Field trials are integral part of the bio safety assessment and are necessary to generate information on the safety, efficacy and agronomic performance of transgenic seeds. All field trials permitted by the Genetic Engineering Approval Committee (GEAC) are subject to stringent norms such as isolation distance, border rows, post harvest restrictions, etc. as stipulated in the Guidelines and Standard Operating Practices (SOPs) for confined field trials of GE crops. As the focus of Rules 1989 is to assess the safety of the GM crop, there are no steps taken to generate socio- economic impact on large scale production of GM crops, foods and vegetables. However, the data generated on the agronomic performance during field trials provides information on the likely economic benefits to farmers. Further, in the case of Bt. Brinjal, the GEAC had requested National Council for Agricultural Policy (NCAP) to conduct an ex-ante study on the socio-economic impact of Bt. Brinjal.

(e) & (f): No, Madam. Varieties of local seeds of cotton are still being cultivated by farmers, in about 10 lakh hectares in India, for their

specific adaptability to adverse conditions and high level of resistance to several insect pests and diseases. CICR is preserving, conserving, developing and promoting the cultivation of all the local varieties in regions for which they are best suited. Seed production programmes are being coordinated through the institute to ensure that farmers can cultivate local varieties for sustained benefits.