GOVERNMENT OF INDIA
SCIENCE AND TECHNOLOGY
LOK SABHA

UNSTARRED QUESTION NO:2859
ANSWERED ON:11.08.2010
IMPLICATIONS OF GENETIC ENGINEERING
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Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) the inplications of genetic engineering on agriculture and animal husbandary;

(b) whether any study has been conducted to look at its adverse consequences;

(c) if so, the details thereof; and

(d) the action taken by the Government in this regard?

Answer

MINISTER OF STATE FOR SCIENCE & TECHNOLOGY AND MINISTER OF STATE FOR EARTH SCIENCES (PRITHVIRAJ CHAVAN)

(a): Genetic Engineering has enormous potential to supplement conventional methods of breeding crops to enhance their productivity. The genetic engineering can contribute to reducing crop losses due to various biotic & abiotic stresses, developing crops for herbicide tolerance, delayed ripening for longer self-life, heterosis breeding for higher yield and efficient use of inputs like insecticides for sustainable agriculture and environment. It also has potential to enhance nutritive value of food crops. In the area of Animal Husbandry, genetic engineering can help in introduction of new characteristics in existing genotype and to develop transgenic farm animals resistant to diseases and with better growth & productivity.

(b), (c) and (d): The Government is following a policy of case by case study for assessment of genetically engineered crops. In view of various concerns related to the safety, efficacy and agronomic performance of transgenic crops, extensive evaluation is carried out before any genetically engineered plant is approved for commercial cultivation. This includes generation of relevant biosafety information and its elaborate analysis to ensure food, feed and environmental safety. The environmental safety assessment includes studies on pollen escape, out-crossing, aggressiveness and weediness, effect of the gene on non-target organisms, presence of protein in soil and its effect on soil micro-flora, confirmation of the absence of terminator gene and baseline susceptibility studies. The food and feed safety studies include assessment on composition analysis, allergenicity and toxicological studies and feeding studies on fish, chicken, cows and buffaloes. In case, the transgenic crop is not found suitable for release in the environment or human consumption, the product is rejected during the trial stage itself. A final view on the commercialization of genetically engineered plants is taken only if there is a clear economic and technical justification for release of the product. Bt cotton is the only genetically engineered crop approved for commercial cultivation in India. However, several genetically engineered crops developed by public as well as private institutions are under various stages of biosafety testing and field evaluations in confined conditions.