

**GOVERNMENT OF INDIA
AGRICULTURE
LOK SABHA**

UNSTARRED QUESTION NO:1521
ANSWERED ON:07.08.2006
GENE REVOLUTION .
Reddy Shri Magunta Sreenivasulu

Will the Minister of AGRICULTURE be pleased to state:

- (a) Whether gene recombination technology has a potential in eradicating poverty in the country in near future; and
- (b) If so, the steps proposed to be taken in this direction to achieve gene revolution in India?

Answer

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (SHRI KANTILAL BHURIA)

(a) Yes, Sir.

(b) There is every possibility of developing new plant varieties by putting together the characteristics of many wild and cultivated varieties into a new elite cultivar. This is possible through the process of molecular breeding facilitated by marker assisted selection in a breeding programme. The marker assisted selection is a preferred tool now a days by plant breeders as it is more efficient and saves a lot of time and energy in identifying and developing improved plant varieties. By this process, varieties can be developed with high yield and with resistance to biotic and abiotic stresses. Consequently, these tools have a potential in eradicating poverty in the country in near future.

To achieve gene revolution, development of genetically modified (GM) crops is underway with improved characteristics. Suitable genes have been isolated and gene constructs prepared. Functional genetic transformation protocols have been developed in different crops.

The work is in progress on developing GM crops, such as cotton, rice, sorghum, maize, chickpea, pigeon pea, mustard, tomato and brinjal for resistance to insect-pests, fungal and bacterial diseases. Resistance to virus diseases is being incorporated in cotton, soybean, mungbean, tomato, potato, banana, papaya and cassava. Transgenic development is also under progress for abiotic stress resistance in rice, wheat, mustard and tomato. Efforts are in progress for developing transgenic mustard with improve heterosis for hybrid seed production. The various transgenics are at different stages of testing.

Some of the transgenics such as cotton, rice, brinjal for insect resistance, potato with improved protein quality, tomato for virus and drought/salinity resistance, and mustard with improved tolerance to salinity and drought stresses are undergoing field trials with Review Committee on Genetic Manipulation (RCGM) approval.