

GOVERNMENT OF INDIA  
MINISTRY OF AGRICULTURE AND FARMERS WELFARE  
DEPARTMENT OF AGRICULTURAL RESEARCH & EDUCATION

**RAJYA SABHA**  
**UNSTARRED QUESTION NO. 649**  
TO BE ANSWERED ON 08/12/2023

**ECOLOGICAL IMPACT OF BIOFORTIFIED SEEDS**

**649. SHRI S NIRANJAN REDDY:**

**Will the Minister of AGRICULTURE AND FARMERS WELFARE be pleased to state:**

- (a) whether it is a fact that Government intends to develop biofortified seeds for spices, wheat, mustard, millets, fruits and vegetables;
- (b) whether Government has conducted any study to evaluate impact of such biofortified seeds on ecological conditions especially soil and water;
- (c) whether the produce from such biofortified seeds will be more expensive than the existing variety in the market;
- (d) if so, in what manner Government intends to make such produce available to the economically backward sections of the society; and
- (e) whether Government has taken any further steps to ensure nutritional security in India?

**ANSWER**

**THE MINISTER OF AGRICULTURE & FARMERS WELFARE**  
**(SHRI NARENDRA SINGH TOMAR)**

- (a) Yes, Sir. Since 2014, 142 biofortified varieties including 124 of field crops (Rice - 10; Wheat - 43; Maize - 20, Pearl millet - 11, Small millets - 13, Linseed - 1, Lentil - 2, Chickpea 2, Mungbean 1, Fieldpea 1, Urdbean 1, Mustard - 8, Soybean - 7, Sesame - 1, Groundnut -3) and 18 of horticultural Crops (Sweet potato - 5, Amaranthus - 3, Greater Yam - 2, Potato – 2 and 1 each of Cauliflower, Okra, Grapes, Banana, Guava and Pomegranate) have been developed under aegis of the Indian Council of Agricultural Research (ICAR).
- (b) These biofortified varieties don't have any impact on ecological conditions especially on soil and water, as these are normally bred varieties and their water and nutrient requirement is like traditional varieties.

**(c)&(d)** All the biofortified varieties are equal or better in yield to conventional varieties of respective crops. Produce of these biofortified varieties is not expensive than the existing varieties in the market, as there is no yield penalty and no extra cost incurred in cultivation of biofortified varieties.

Since 2019-20, 37425.7 q breeder seed of biofortified varieties has been produced and supplied to the various public and private seed production agencies for its downstream multiplication to foundation and certified seed. Certified seed is further supplied to the farmers for cultivation and making the produce of biofortified seed available to the economically backward sections of the society. During past six years, more than 10 million hectare area including wheat, rice, pearl millet, mustard and lentil has been covered under biofortified varieties.

**(e)** Under National Food Security Mission (NFSM), assistance is given through State/Union Territory to the farmers for interventions like cluster demonstrations on improved package of practices, demonstrations on cropping system, seed production, distribution of High Yielding Varieties (HYVs)/ hybrids, cropping system based trainings etc. The Mission also provided support to the ICAR, State Agricultural Universities and Krishi Vigyan Kendras for technology back stopping and transfer of technology to the farmer under supervision of Subject Matter Specialists/ Scientists. Under NFSM, States/ ICAR may organize latest crop production technology demonstrations/ Cluster Frontline Demonstrations/ Front Line Demonstrations on bio-fortified varieties. States are also encouraged to produce and distribute biofortified seeds.

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