

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

LOK SABHA
UNSTARRED QUESTION NO. 3449
TO BE ANSWERED ON 07/08/2018

DEVELOPMENT OF ECO-FRIENDLY FLOOD/DROUGHT TOLERANT SEEDS

3449. SHRI SHIVKUMAR UDASI:

Will the Minister of AGRICULTURE AND FARMERS WELFARE
कृषि और किसान कल्याण मंत्री be pleased to state:

- (a) whether the Government is developing eco-friendly flood/drought tolerant seeds in the country, if so, the details thereof;
- (b) whether the Government has conducted research study on the generation of flood/drought resistant seed varieties; and
- (c) if so, the details thereof?

A N S W E R

MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE AND FARMERS WELFARE
कृषि और किसान कल्याण मंत्रालय में राज्य मंत्री
(SHRI GAJENDRA SINGH SHEKHAWAT)

(a) to (c): Crop Science Division of Indian Council of Agricultural Research (ICAR), through its 21 Research Institutes, 03 Bureaux, 02 National Research Centres, 02 Project Directorates, 22 All India Coordinated Research Projects (AICRPs) and 10 Network Research Projects, and in active collaboration with State Agricultural Universities (SAUs) is engaged in the development of eco-friendly, improved crop varieties/ hybrids, to enhance crop productivity and ensure food and nutritional security in the country.

These schemes are crop or technology specific, and every AICRP scheme is distributed in different areas across the country. The main emphasis has been on development of trait-specific high yielding crop varieties and hybrids, specific to specific areas/agro-climatic zones. As a result, since May 2014 to till date, a total of 795 stress tolerant, high yielding, agro-climatic zone specific varieties have been developed, which comprised 437 of cereals, 116 of oil seeds, 112 of pulses, 62 of fibre crops, 46 of forage crops and 22 of sugarcane. Development of varieties is a continuous process as per the mandate of the crop based institutes. As a result of the concerted efforts by National Agricultural Research System (NARS), a number of drought and flood tolerant/resistant varieties have been developed, the details of which has been given in **Annexure-I**.

Under National Innovations on Climate Resilient Agriculture (NICRA), a network project of ICAR, institutes are aiming to enhance resilience of field crop genotypes to climate change and climate vulnerability through conducting strategic research and technology demonstration. State of the art infrastructure facilities like High Throughput Plant Phenomics and rainout shelter facilities were established at core institutes of ICAR to screen and characterize number of germplasm lines and use in future breeding programs. Collection and characterization of germplasm lines from different locations across the country have been undertaken by ICAR institutes. Efforts are also made to isolate genes responsible for drought tolerance for further utilization in crop improvement programmes. Under this programme, the genotypes identified for flood/drought are used as donor parents in breeding programmes.

Further, in AICRPs, the advanced breeding lines generated at all these centres are nominated and evaluated in hot spot areas in AICRP program along with checks for 3 years in initial variety trial and advance variety trial 1 & 2 and are released when they show superior performance over the checks under the respective stress areas.

**Drought and Flood tolerant varieties released and notified during
May 2014 to till date**

Crop	Drought/moisture stress tolerant/ water stress/low rainfall	Flood/submergence/water logging tolerance/deep water
Cereals		
Rice	IR-64 Drt I (IET 22836); Birsa Vikas Dhan 111; Birsa Vikas Dhan 203; Sabour Shree (RAU 724-48-33); Kalachampa; DRR Dhan 44 (IET 22081); DRR Dhan 43 (IET 22080); ADV 8301 (IET22410) Hybrid; DRR Dhan 46; JRH 19 (Hybrid); NandyalaSona (NDLR 7); Daksha (KMP-175); DRR Dhan 47 (IET 23356); DRR Dhan 50 (IET 25671); CAU-RI (IET 23544); Him Palam Lal Dhan-1 (HPR 2795)	CR Dhan 505; CR Dhan 508; Samba Sub-1 (IET 21248); Tanmayee (OR2339-8) (IET20262); CR 1009 Sub 1; Bheema (Dheera) (MTU 1140); CR Dhan 506 (IET 23053); CR Dhan 408 (IET 20265) Chakaakhi; CR Dhan 507(IET 22986); CR Dhan 409 (IET 23110); CO 43 Sub-1 (IET 25676); DRR Dhan 50 (IET 25671); Ranjit SUB-1; Bahadur SUB-1
Wheat	Sabour Nirjal (BRW 3723); HUW 669 (Malviya 669)	
Maize	DHM 121 (BH 41009) Hybrid; KMH-7148 Hybrid; Candy (KSCH-333) Hybrid; D2244 (DAS-MH-501) Hybrid; HTMH 5402 Hybrid; GK 3150 Hybrid; DRONA (KMH-2589) Hybrid; MH 9344 (DMH 192) Hybrid; HTMH 5109 (HT 51412616) Hybrid;	
Pearl Millet	NBH 4903 (Balwan); AHB 1200 Fe (MH 2072 (AHB 1200) Hybrid; BHB-1202 (Bikaner Hybrid Bajra-1202) (MH 1831)	
Sorghum	CSV 32F (SPV 2128); Phule Rohini (RPASV3); Phule Madhur (RSSGV 46); RVICSH 28 (Hybrid);	
Little Millet	Jawahar Kutki 4 (JK 4)	
Finger Millet	Vakula (PPR 2700); Chhattisgarh Ragi-2 (BR-36)	
Kodo Millet	Jawahar Kodo 137	
Oilseeds		
Toria	Raj VijayToria 1	
Soybean	Pant Soybean 24 (PS 1477)	
Linseed	Utera Alsi (RLC-143)	
Pulses		
Chickpea	Pusa 3043 (BG 3043)	
Lentil	Kota Masoor 2(RKL 14-20)	
Pigeon pea	Ujwala (PRG 176); GRG 811 (Dharamaraj)	
Cowpea	Karan Chanwla 1 (CPD 119)	
Cluster bean	Karan Guar 1 (RGr-12-1)	

Horse gram	Phule Sakas (SHG 0628-4)	
Fibres		
Cotton	GN.Cot.25; SVPR 1 (TSHH-0629) Hybrid; Nirmal-433 (NACH-433)	
Jute	JRO 2407 Samapti (Tossa Jute)	JRO 2407 Samapti (Tossa Jute); Ishani (JRC-9057) White Jute; NCJ- 28-10 AAUCJ-2 (Kkhyati)
Roselle	Sampurna (CRIJAFR 8); Central Roselle Ratna (CRIJAF R-5)	
Sugar crop		
Sugarcane	Sankeshwar 049 (Co Snk 05103); Sankeshwar 814 (Co Snk 05104); CoBIn 02173(22/94) D01YANG; CO 0212; Gujarat Sugarcane 5(CoN 05071); Revathi (2000 A 225 (CoA 05323); Co 09004 (Amritha); SNK-632 (CoSnK 03632); CoVSI 03102	Gujarat Sugarcane 5(CoN 05071); CoLK 09204 (Ikshu-3); Buddhi 2003 A 255 (CoA 08323); Sankeshwar 814 (Co Snk 05104);
Forages		
Fodder Pearl Millet	IGPM 5-2	
Fodder Sorghum	Fodder Sorghum CO 31 (TNFS 0952)	
Fodder Cowpea	CO 9	
Ricebean	Shyamalima (JCR-7-20)	
Guinea Grass	Dharwad Guinea Grass 1(DGG-1) (RSDGG-1)	
Sewan Grass	CAZRI Sewan-1 (CAZRI 30-5)	
Anjan Grass	CAZRI Anjan-358 (CAZRI 358)	
