

GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE AND FARMERS WELFARE
DEPARTMENT OF AGRICULTURE, COOPERATION AND FARMERS WELFARE

LOK SABHA
UNSTARRED QUESTION NO. 1166
TO BE ANSWERED ON THE 27TH JULY, 2021

NATIONAL AGRICULTURAL RESEARCH SYSTEM

1166. SHRIMATI SUPRIYA SULE:
DR. AMOL RAMSING KOLHE:
SHRI MANICKAM TAGORE B.:
DR. SUBHASH RAMRAO BHAMRE:
SHRI KULDEEP RAI SHARMA:
DR. DNV SENTHILKUMAR. S.:
SHRI SUNIL DATTATRAY TATKARE:

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

- (a) whether National Agricultural Research System (NARS) is involved in the development of environmental friendly seeds of crop varieties which are tolerant to flood/water logging conditions;
- (b) whether these crop varieties have helped in sustainable production in States/regions where the problem of flood/water-logging is recurring;
- (c) the number of varieties tolerant to flood/water-logging that have been developed and the name of the States where these seeds are being used along with the results thereof;
- (d) the number of farmers who received flood-resistant and drought-proof seeds across the country during the last three years, State-wise;
- (e) the details of the action plan prepared by the Government to expand the use of these seeds to all the flood-prone States of the country; and
- (f) whether the Government also provides financial assistance for flood-tolerant seed production and if so, the details of the financial assistance provided during each of the last three years?

ANSWER

THE MINISTER OF AGRICULTURE AND FARMERS WELFARE

कृषि और किसान कल्याण मंत्री

(SHRI NARENDRA SINGH TOMAR)

(a) to (c): Yes Sir. Since 2014, National Agricultural Research System (NARS) under the aegis of Indian Council of Agricultural Research (ICAR) has released 1575 varieties of different field crops viz., cereals (770), oilseeds (235), pulses (236), forages (170), fibre crops (104), sugarcane (52) and underutilized crops (8) through All India Coordinated Research Projects (AICRP). Special focus is on to breed trait specific varieties and total 41 flood/ submergence/ water logging/ deep water tolerant varieties of rice (25), maize (2), jute (4), rice bean (1) and sugarcane (9) have been released since 2014. The details are at **Annexure-I**.

Total 1270.3 q of breeder seed of such varieties has been produced and made available to Central and State Seed production agencies which include 202.9 q during 2018-19, 515.9 q during 2019-20 and 551.5 q during 2020-21 for downstream multiplication of foundation and certified seed. Breeder seed of flood/ water logging/ submergence tolerant varieties was supplied to NSC, Odisha, Tamil Nadu, West Bengal, Uttar Pradesh, Jharkhand, Telangana, Andhra Pradesh, Manipur, Tripura, Meghalaya in case of rice; Chhattisgarh, Madhya Pradesh in case of maize and West Bengal and NSC in case of Jute.

Further, during 2018-19 to 2020-21, 25823.8 q quality seed of newly released flood/ submergence/ water logging/ deep water tolerant varieties of rice, maize and jute has been made available to the farmers. As a result of adoption of stress tolerant high yielding varieties of different crops, production of all the crops has increased over years. The details are at **Annexure-II**.

(d) During last three years and current kharif 2021 season, a total of 7949510 quintals of quality seed of flood, drought and salinity tolerant rice varieties has been made available to the farmers across 24 states which can cover a total area of around 39747550 ha. The details are at **Annexure-III**.

(e) Each state is indenting the breeder seed of different crop varieties as per Seed Rolling Plan in three years advance and finalized in the Breeder Seed indent meetings during both Rabi and Kharif seasons organized by Seed Division of DAC&FW and ICAR which is attended by senior officers of State Deptt. of Agriculture, representatives of all central and state seed production agencies, Directors and Project Coordinators of all ICAR Institutes and officers of Seed Divisions of DAC&FW and ICAR and state-wise and variety-wise discussions are held where emphasis is given on inclusion of high yielding, stress tolerant and biofortified crop varieties in the Seed Rolling Plan. List of new varieties released during past five years with details of performance, specific traits, recommended area and developing Institutes is circulated to all public and private seed producing agencies. During Zonal Seed Review Meetings, Weekly video conferences and National Kharif and Rabi campaigns organized by DAC&FW, States are advised to focus on planning, production and distribution of seeds of drought, flood and salt tolerant varieties to the farmers. The Government of India supplements the efforts of the State Governments by coordinating with them to meet their seed requirement through National Seed Corporation and State Seeds Corporations. The availability of stress tolerant (flood, drought & salt) rice varieties certified/quality seeds produced and made available to the farmers during last three years and current year is given at **Annexure-III**.

(f) In order to meet the requirement of seeds of climate resilient short and medium duration crop varieties to the farmers during natural calamities and unforeseen conditions like floods, drought etc., seeds are reserved/ maintained under the component National Seed Reserve of Sub-Mission on Seeds and Planting Material in DAC&FW. The quantity of seed reserved/maintained and financial assistance provided to States under this component during last three years are as under:

Year	Quantity of Seed reserved (lakh q)	Amount Released (Rs. in crore)
2018-19	3.14	11.50
2019-20	2.70	9.37
2020-21	2.88	17.21

Annexure-I
[Part (a) to (c) of Lok Sabha USQ No.1166 dated 27/07/2021]

Flood/water logging/ submergence tolerant field crop varieties released during 2014 to 2021

SN	Crop/Variety	Year	Developing Institute	Area of adoption	Average yield (q/ha)
	Rice				
1.	CR Dhan 505	2014	ICAR - National Rice Research Institute, Cuttack (Odisha)	Odisha and Assam	43.0
2.	Samba Sub-1 (IET 21248)	2014	International Rice Research Institute, Philippines	Uttar Pradesh	30.0
3.	Tanmayee (OR2339-8) (IET20262)	2015	Odisha University of Agriculture and Technology, Bhubaneswar (Odisha)	Odisha	52.4
4.	CR 1009 Sub 1	2016	Tamil Nadu Agriculture University -Tamil Nadu Rice Research Institute, Aduthuari (Tamil Nadu)	Telangana	57.0
5.	CR Dhan 508 (IET 23601)	2017	ICAR- National Rice Research Institute, Cuttack (Odisha)	Assam, West Bengal and Odisha	43.7
6.	Bheema (Dheera) (MTU 1140) (IET 23933)	2017	Acharya N.G. Ranga Agricultural University, RAR Station, Maruteru, (Andhra Pradesh)	Andhra Pradesh	60.0
7.	Rajdeep CN 1039-9 (IET 17713) (CNR 4)	2017	Rice Research Station ,Govt. of West Bengal, Chinsurah (West Bengal)	West Bengal	45.0 -55.0
8.	CR Dhan 506 (IET 23053)	2017	ICAR-National Rice Research Institute, Cuttack (Odisha)	Assam, Andhra Pradesh and Karnataka	44.0
9.	CR Dhan 408 (IET 20265) Chakaakhi	2017	Navsari Agricultural University, Gujarat	Odisha	45.0
10.	CR Dhan 507 (IET 22986)	2017	ICAR-National Rice Research Institute, Cuttack (Odisha)	Odisha	47.5
11.	CR Dhan 409 (IET 23110)	2017	ICAR-National Rice Research Institute, Cuttack (Odisha)	Odisha	47.0
12.	CO 43 Sub-1 (IET 25676)	2018	Tamil Nadu Agriculture University, Coimbatore (Tamil Nadu)	Tamil Nadu, Andhra Pradesh, Odisha, Karnataka	40.44

13.	DRR Dhan 50 (IET 25671)	2018	ICAR-Indian Institute of Rice Research, Rajendranagar, Hyderabad (Telangana)	Andhra Pradesh, Telangana, Tamilnadu, Karnataka, Bihar, Odisha, Chhattisgarh, UP, MP	58.6 (normal), 37.5 (drought), 25.3 (submerg)
14.	Ranjit Sub-1	2018	Regional Agriculture Res. Station, Assam Agril. University, Titabar (Assam)	Assam	55.0
15.	Bahadur Sub-1	2018	Regional Agriculture Research Station, Assam Agril. University, Titabar (Assam)	Assam	60.0
16.	Ashutosh (OR 2331-14) IET 21341	2018	Odisha University of Agriculture and Technology, Bhubneshwar (Odisha)	Odisha	40.0
17.	Tripura Jala -1	2018	ICAR Research Complex for NEH Region, Agartala (Tripura)	Tripura	50-55
18.	CR Dhan 801 (IET 25667)	2018	ICAR-National Rice Research Institute, Cuttack (Odisha)	Andhra Pradesh, Telangana, Odisha, UP and West Bengal	55.0
19.	CR Dhan 510 (IET 23895) (2018	ICAR-National Rice Research Institute, Cuttack (Odisha)	West Bengal and Odisha	52.6 (WB) and 40.1 (Odisha)
20.	Ksheera (IET 24495) (MTU 1172)	2018	Acharya N.G. Ranga Agricultural University, RAR Station, Maruteru, (Andhra Pradesh)	Odisha and Andhra Pradesh.	45-50 (semi deepwater), 55-60 (normal)
21.	CR Dhan 802 (SUBHAS) (IET 25673)	2018	ICAR-National Rice Research Institute, Cuttack (Odisha)	Madhya Pradesh and Bihar.	22.0 (submerg), 41.0 (normal)
22.	CAU-R4 (Eenotphou) (IET 22469)	2019	Central Agricultural University, Imphal (Manipur)	Manipur	38.0-45.0
23.	IR 64- Sub 1(IET 21247)	2020	Acharya Narendra Deva University of Agriculture and Technology, Research Station, Masodha (Uttar Pradesh)	Uttar Pradesh	30 – 35 (submerg)
24.	NDR 9930111 (IET 19117)	2020	Acharya Narendra Deva University of Agriculture and Technology, Research Station, Masodha (Uttar Pradesh)	Uttar Pradesh	43.0
25.	Sabour Sampanna Dhan (IET 25960)	2020	Bihar Agricultural University, Sabour (Bihar)	Bihar	68 (irrigated), 31 (submerg), 33 (drought)

	Maize				
26.	Jawahar Maize 218	2018	Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur (Madhya Pradesh)	Madhya Pradesh	50.52
27.	Pusa Jawahar Hybrid Maize-1	2018	ICAR- IARI, New Delhi and Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpu (Madhya Pradesh)	Madhya Pradesh	64.74
	COMMERCIAL CROPS				
	Jute				
28.	JRO 2407 Samapti (Tossa Jute)	2016	ICAR-Central Research Institute for Jute & Allied Fibre, Barrackpore (West Bengal)	Entire Tossa Jute growing states of the country	33.82
29.	Ishani (JRC-9057) White Jute	2016	ICAR-Central Research Institute for Jute & Allied Fibre, Barrackpore (West Bengal)	West Bengal, Assam, Bihar, Odisha	28.2
30.	NCJ-28-10 AAUCJ-2 (Kkhyati)	2017	Assam Agriculture University, Jorhat (Assam)	Assam and West Bengal	27.95
31.	JRCJ-11	2020	ICAR-Central Research Institute for Jute & Allied Fibre, Barrackpore (West Bengal)	West Bengal, Assam, Odisha, Bihar	31.45
	FORAGES				
	Rice bean				
32.	Bidhan Rice bean-3 (KRB-19)	2016	Bidhan Chandra Krishi Vishwavidyalaya, Kalyani (West Bengal)	Jharkhand, WB, Odisha, Assam, Mani pur and Kerala	Dry matter: 55.0, seed: 5.0
	SUGARCANE				
33.	Sankeshwar 049 (Co Snk 05103)	2014	ARS Sankeshwar, University of Agriculture Science, Dharwad (Karnataka)	Andhra Pradesh , Gujarat, Maharashtra, Karnataka, Tamil Nadu, Kerala. MP	1059.7
34.	Sankeshwar 814 (Co Snk 05104)	2014	ARS Sankeshwar, University of Agriculture Science, Dharwad (Karnataka)	Andhra Pradesh, Gujarat, Maharashtra, Karnataka, Tamil Nadu, Kerala, MP	1068.6
35.	Gujarat Sugarcane 5 (CoN 05071)	2016	Main Sugarcane Research Station, Navsari Agri. University (Gujarat)	Gujarat	938.1
36.	Gujarat Sugarcane 7 (CoN 04131)	2016	Main Sugarcane Research Station, Navsari Agri. University (Gujarat)	Gujarat	1400.0
37.	Buddhi 2003 A 255 (CoA 08323)	2017	Regional Agriculture Research Station, ANGRAU, Vishakapatnam (Andhra Pradesh)	Andhra Pradesh, Odisha and Tamil Nadu	1063.0

38.	CoLK 09204 (Ikshu-3)	2018	ICAR-Indian Institute of Sugarcane Research, Lucknow (Uttar Pradesh)	Punjab, Haryana, Rajasthan, Uttarakhand and Central & Western Uttar Pradesh	828.0
39.	CoA 11321 (Sri Mukhi)	2018	Regional Agriculture Research Station, Acharya NG Ranga Agriculture University, (Andhra Pradesh)	Andhra Pradesh	1113.1
40.	CoLk 12207 (Ikshu-6)	2018	ICAR-Sugarcane Breeding Institute, Coimbatore (Tamil Nadu)	Eastern Uttar Pradesh, Bihar, WB, Assam, Jharkhand	754.2
41.	Ranga (CoV 15-356)	2019	Regional Agriculture Research Station, ANGRAU, Vishakapatnam (Andhra Pradesh)	Andhra Pradesh	1200-1300

Area, production and productivity of field crops during 2013-14, 2019-20 and 2020-21

Crop	2013-14			2019-20			2020-21*		
	Area (M ha)	Production (Million tons)	Yield (kg/ha)	Area (M ha)	Production (Million tons)	Yield (kg/ha)	Area (M ha)	Production (Million tons)	Yield (kg/ha)
Rice	44.14	106.65	2462	43.66	119.60	2722	44.19	121.46	2749
Wheat	30.47	95.85	3117	31.36	108.00	3440	31.76	108.75	3424
Maize	9.07	24.26	2567	9.57	29.00	3006	9.46	30.24	3199
Total cereals	99.83	245.79	2449	99.01	275.40	2772	99.54	279.87	2811
Pulses	25.21	19.26	789	27.99	25.60	823	29.15	25.58	877
Total food grains	125.04	265.05	2129	126.99	301.00	2343	128.70	305.44	2373
Oilseeds	28.05	32.75	1167	27.14	33.22	1224	28.82	36.57	1269
Sugarcane	4.99	352.14	70522	4.60	370.50	80497	4.84	392.80	81186

*Third advance estimates

Annexure-III
[Part (d) and (e) of Lok Sabha USQ No.1166 dated 27/07/2021]

Details of state-wise certified/quality seed of stress tolerant (flood/ water logging/ submergence, drought and salt) rice varieties made available during last three years and current year

State	No. of Varieties	Quality seed of stress tolerant varieties (quintals) made available				
		2018-19	2019-20	2020-21	Kh. 2021	Total
Andhra Pradesh	8	140631	69368	12971	8414	231384
Assam	12	59400	122735	200511	194214	576860
Bihar	8	54440	83610	64520	144991	347561
Chhattisgarh	12	110995	321704	182430	325845	940974
Goa	1	600	2900	2550	2800	8850
Haryana	2	7838	4768	6666	5804	25076
Jharkhand	8	193496	28175	47452	141003	410126
Karnataka	3	49875	70265	51102	33145	204387
Kerala	3	28000	15836	14750	6974	65560
Madhya Pradesh	8	10291	80776	57013	176250	324330
Meghalaya	4	3800	4330	4010	4065	16205
Maharashtra	4	50	18700	16500	11560	46810
Manipur	2	315	0	1550	0	1865
Nagaland	3	620	4540	0	1285	6445
Odisha	18	236570	347204	301001	94235	979010
Puducherry	5	1209	896	1148	32	3285
Punjab	1	177	90	0	12	279
Rajasthan	1	500	0	0	0	500
Tamilnadu	9	124910	74815	232990	40160	472875
Telangana	2	207550	252305	235742	300298	995895
Tripura	7	10340	15350	9050		34740
Uttar pradesh	18	121503	37297	51213	82502	292515
Uttrakhand	1	0	1350	0	0	1350
West Bengal	24	586643	535045	512385	328555	1962628
Total		1949753	2092059	2005554	1902144	7949510
