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

RAJYA SABHA
UNSTARRED QUESTION NO-1461
ANSWERED ON- 12/12/2025

GENE-EDITED RICE VARIETIES

1461. SMT. RANJEET RANJAN:
SHRI DIGVIJAYA SINGH:
SMT. JEBI MATHER HISHAM:

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

(a) a detailed list of all the gene-edited rice varieties approved by Government, broken-down by variety names, parent varieties, and names of the developer between 2020 to 2025;

(b) details of the agro-ecosystems they are recommended for and how these agro-ecosystems were identified;

(c) State-wise data of the results from the yield-trial, including names of the trial sites, yield gains/losses in comparison to the parent variety between 2023-2025; and

(d) details of the measures being taken by the Ministry to address issues related to safety, environment and seed- sovereignty before approval for commercial release?

ANSWER

THE MINISTER OF STATE FOR AGRICULTURE AND FARMERS WELFARE
(SHRI BHAGIRATH CHOUDHARY)

(a) & (b): Based on the performance in the multi-location trials under All India Coordinated Research Project on Rice (AICRPR), the following two gene-edited rice varieties have been approved:

1. Pusa DST Rice-1 derived from the parent variety, Cottondora Sannalu (MTU 1010) by ICAR-Indian Agricultural Research Institute, New Delhi, has been recommended for the states of Telangana, Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Puducherry under Zone VII. These locations were identified as its parent variety (MTU1010) was also released for this zone.

2. DRR Dhan 100 (Kamala) derived from the parent variety, BPT5204 (Samba Mahsuri) developed by ICAR-Indian Institute of Rice Research, Hyderabad, has been recommended for the states of Telangana, Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Puducherry under Zone VII. These locations were identified as its parent variety (Samba Mahsuri) was also released for this zone.

(c): Pusa DST Rice 1 was evaluated under AICRPR during Kharif 2023 and Kharif 2024 with its parent variety MTU 1010, the yield gain (+%)/ loss (-%) data for the stress tolerance screening done during Kharif 2024 is given as under:

Under alkalinity stress: Telangana (Kampasagar- MTU 1010 has 100% mortality, while Pusa DST 1 survived and give normal yield), Tamil Nadu (Trichy -23.02%, Annamalainagar +9.15%), Puducherry (Puducherry +11.85%, Karaikal +19.24); Overall yield increase was +14.66%

Under coastal Salinity: Karnataka (Brahmavar +24.49%), Kerala (Vytilla +32.37%); Overall yield increase +30.36% Under Inland Salinity: Karnataka (Gangavathi +9.66%); Overall yield increase +9.66%.

DRR Dhan 100 was evaluated under AICRPR during Kharif 2023, Rabi 2023-24 and Kharif 2024 with its parent variety Samba Mahsuri, the yield gain (+%)/ loss (-%) data is given as under :

Based on weighted mean in Zone VII, Andhra Pradesh (Maruteru, Bapatla, Nellore +5.94%), Telangana (Warangal, Jagatiyal, Rajendranagar +25.60%), Karnataka (Gangavati, Mandya +9.82%), Tamil Nadu (Coimbatore, Adhuthurai +11.27%), Puducherry (Kurumbapet +31.15%), Kerala (Moncompu, Pattambi +4.60%); Overall yield increase +14.12%.

(d): Biosafety issues have been addressed following the 'Guidelines for the Safety Assessment of Genome Edited Plants, 2022' of Department of Biotechnology (DBT), Ministry of Science and Technology, Govt. of India issued vide OM No. File No. PID-15011/1/2022-PPB-DBT dated 17.05.2022 and "Standard Operating Procedures for Regulatory Review of Genome Edited Plants under SDN-1 and SDN-2 Categories" vide OM No. File No. PID-15011/1/2022-PPB-DBT dated 04.10.2022.

The inventors have provided Freedom to Operate (FTO) provision for using genome editing technology for research purpose. There is no issue of bearing on the seed sovereignty and accessibility of Indian farmers. Seeds of these varieties will be accessible to them as a normal variety of crop.

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