

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

LOK SABHA
UNSTARRED QUESTION NO. 1398
TO BE ANSWERED ON 29TH JULY, 2025

RELEASE OF GENE EDITED RICE VARIETIES

1398. SHRI SASIKANTH SENTHIL:

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

- (a) whether the Government is aware of concerns raised regarding the adequacy of safety assessments conducted for the release of gene edited rice varieties such as DRR Dhan 100 and Pusa DST Rice 1, if so, the details thereof;
- (b) whether the exemption of SDN-1 and SDN-2 categories of gene editing from rigorous biosafety regulation aligns with established scientific and international biosafety standards;
- (c) whether any assessment has been made regarding the Intellectual Property Rights (IPR) implications of CRISPR based technologies and their potential impact on affordability and accessibility for Indian Farmers;
- (d) whether consultations were held with State governments, farmer groups, and scientific institutions regarding biodiversity concerns and potential ecological risk, if so, the outcomes of such consultations; and
- (e) the details of measures being taken to strengthen regulatory oversight, promote independent testing and ensure public transparency in the approval and monitoring of gene edited crops in India?

ANSWER

THE MINISTER OF STATE FOR AGRICULTURE AND FARMERS WELFARE
कृषि और किसान कल्याण राज्य मंत्री (SHRI BHAGIRATH CHOUDHARY)

(a) & (b): Yes, DRR Dhan 100 and Pusa DST Rice 1 have been approved under the provision of Ministry of Environment, Forest and Climate Change (MoEF&CC), Govt. of India exempted the Site-Directed Nuclease-1(SDN1) and Site-Directed Nuclease-2 (SDN2) genome edited crop free of exogenous introduced DNA from GM regulation rules (Rules 7-11 of Rules 1989) vide OM F.NO. C-12013/3/2020-CS-III dated 30 March, 2022. Further, the Department of Biotechnology (DBT), Ministry of Science and Technology, Govt. of India issued the Guidelines for the Safety Assessment of Genome Edited Plants, 2022 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 detailed dossier of relevant data generated during development of these varieties was submitted to Review Committee on Genetic Manipulation (RCGM), DBT by Institutional Biosafety Committees (IBSCs). The RCGM in its 258th meeting held on 30 May 2023 confirmed the exemption for the genome edited rice lines from further biosafety regulations.

(c): The genome edited varieties DRR Dhan 100 (Kamala) and Pusa Rice DST1 have been developed from public sector bred parent varieties BPT 5204 and MTU 1010, respectively through indigenous efforts.

Since these varieties have been developed using CRISPR/Cas genome editing technology which is under IP protection, 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 affordability and accessibility of Indian Farmers. Seeds of these varieties will be accessible to them as a normal variety of crop.

(d): The wider consultations on genome edited plant varieties were held with stakeholders by Indian Council of Agricultural Research, Department of Biotechnology and National Academy of Agricultural Sciences in open forums before notification of the guidelines and procedures for genome edited plant varieties in India. These two rice varieties have been discussed and deliberated in conferences, meetings, seminars, farmers' fairs and industry meets.

(e): As covered under responses (a), India follows one of the most robust and rigorous biosafety regulations for development and testing of gene edited plant varieties through SDN-1 and SDN-2 technologies of genome editing. The GM regulatory bodies, IBSC and RCGM, examine the data very critically to ensure that end product does not have any footprint of foreign genes/nucleotides, and follows global standard of non-GM products. These regulatory bodies also scrutinize the stability of mutations created by gene editing tools, and the robustness of phenotype. The exemption is given only after these biosafety regulatory bodies examine and clear the application as per guidelines of RCGM, DBT, Government of India. Further, these varieties were tested independently at more than 50 locations each at the centres of ICAR-All India Coordinated Research Project on Rice during 2023 and 2024.
