

Open Statement on Bar Gene in GM Mustard

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We introduce ourselves as scientists, having expertise in the various advanced disciplines of biology, plant breeding and environmental science and who have been following the arguments unfolding in the Hon'ble Supreme Court on the matter of Genetically Modified Mustard. There, the question has come up as to whether or not GM mustard hybrid DMH-11 is an herbicide tolerant crop.

In Bar-Barnase-Barstar system, the Bar gene, which confers tolerance to herbicide Phosphinothricin (also known as Glufosinate) is used in both the parents with specific purpose. In female parent it is used for maintenance of a female pure line as well as to screen in required female plants for hybrid seed production of DMH-11; while in male parent it is used to ease hybrid seed production.

Technically, it is the presence of the gene construct with Bar gene which defines whether a crop is Herbicide Tolerant (HT) or not. Given that both parents of DMH-11 carry gene constructs containing Bar, which confers herbicide tolerance towards glufosinate, any offspring from such parents including DMH-11 shall carry the HT trait. Therefore not only parental lines, but DMH-11 is also tolerant to herbicide without any doubt.

We would like to emphasise that, the presence of the Bar gene in DMH-11 from both the parents as described, is sufficient for the crop to tolerate herbicide application in farmers' fields. It would be technically unsound to preclude the possibility that it will be grown with herbicide application as an herbicide tolerant (HT) crop by Indian farmers.

We believe that a correct understanding of the scientific facts would help to inform the public and policy makers so as to guide decision-making.



(Dr. Soma Sundar Marla)

Former Principal Scientist,

Crop Bioinformatics & Genomics,

ICAR-National Bureau of Plant Genetic Resources (NBPGR), New Delhi.

Email: ssmarl@yahoo.com; **Cell:** 98116 93750

Other Signatories:

1. **Dr. A.R. Pathak**, Former Rice Breeder; Former VC, Navasari Agril. Uni.; Former VC, Junagadh Agril. Uni.; Former Director of Research, Anand Agril. Uni.
2. **Dr Dhiraj Singh**, Former Director, Directorate of Research on Mustard and Rapeseed (DRMR), Bharatpur
3. **Dr Sharad Pawar**, Former Scientist, Nuclear Agriculture and Biotechnology Division, Bhabha Atomic Research Centre (BARC), Mumbai, Former Consultant, Dhara Mustard Hybrid Project, RTM University, Nagpur.
4. **Dr. Aniket Aga**, Asso. Prof. Environmental Studies, Ashoka University, New Delhi
5. **Dr. Satyaprasad**, Former Researcher in Molecular Plant Pathology, Osmania University, Hyderabad
6. **Dr K. B. Wanjari**, Former Pulse Breeder, Associate Dean, PDVK, Akola
7. **Dr. B.N. Reddy**, Former Head, Dept. of Botany, Osmania University, Hyderabad