

**MOLECULAR CHARACTERIZATION OF MALE STERILE LINES AND THEIR  
MAINTAINERS IN PEARL MILLET (*Pennisetum glaucum* (L.) R. BR.) WITH  
ISOZYME MARKERS**

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**ABSTRACT**

Comparison of peroxidase, esterase isozymes and protein banding pattern of different male sterile lines and their maintainers was done by PAGE. Eight male sterile lines and their maintainers in pearl millet (*Pennisetum glaucum* (L.) R.BR.) were used for isozyme analysis. It was found that the male sterile lines and maintainers could be differentiated based on the isozyme band intensities. For esterase, the isozymes EST 10, EST 15, EST 30, EST 32, EST 35 and for peroxidase, PRX 27, PRX 31, PRX 33, PRX 45, PRX 63, PRX 65 were found to be the suitable molecular markers to differentiate the male sterile lines and their maintainers. The protein analysis, SDS – PAGE was performed for 81 A, 81 Am, 81 Av and its maintainer 81 B. The similarity index was worked out. High similarity index was observed between 81 Am and 81 B (47.06); 81 Av and 81 Am (47.06) and the lowest was found between 81 A and 81 B (28.57). A Protein with a molecular weight of 31 KD was observed in 81 B, a male fertile line and was not seen in the male sterile lines viz. 81A, 81 Am, 81 Av. So these isozymes and protein can be used as the molecular markers to differentiate the male sterile lines from maintainers.

**Key words** : ecterase, PAGE, peroxidase, protein, relative mobility similarity index