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Evaluation for genetic purity and diversity in isoenzyme ~-*Esterases* of ten pearl millet hybrids (*Pennisetum glaucum*)

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The prospective of biochemical marker like seed esterases, was investigated in the present study. Ten pearl millet hybrids (*Pennisetum glaucum*) genotypes were used to examine the suitability of esterases for characterization of pearl millet genotypes. Banding pattern at 9 DAG showed that band number1, 2 and 4 (Rm = 0.332 0.549 and 0.674) were present in all the hybrids. Band number 3 (Rm = 0.636) was present in six hybrids *i.e.* GHB-526, GHB-558, GHB-577, GHB-732, GHB-744 and GHB-757. Band number 5 (Rm = 0.728) was present in all hybrids except for GHB-538. Among the 10 genotypes studied, two could be differentiated from each other. Total 13 bands of esterase isozymes were observed at 3, 6 and 9 day after germination (DAG). Polymorphism was observed 75%, 100 per cent and 40 per cent at 3, 6 and 9 DAG, respectively. Genetic distance revealed that ten pearl millet hybrids fell into two main clusters A and B. The cluster A included two sub clusters A1 and A2. Sub-cluster A1 further divided in two sub-sub cluster A1a and A1b. A1a comprised of four hybrids *i.e.* GHB-526, GHB-558, GHB-577and GHB-235, while A1b consisted of only one hybrid GHB-744. Sub cluster A2 comprised of three hybrids *i.e.* GHB-732, GHB-757 and GHB-316. Cluster B included two hybrids GHB-538 and GHB-719. Thus, results clearly indicated that highest similarity was found between hybrids GHB-732 and GHB-757 while lowest similarity was observed between hybrids GHB-538 and GHB-744.

Key words : Genetic purity, Diversity, Isoenzyme, Pearl millet, Hybrids

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