

Genetic Divergence Studies for Cane Yield and Quality Attributes in Sugarcane (*Saccharum officinarum* L.)

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ABSTRACT

Genetic diversity among 25 sugarcane genotypes was estimated by using Mahalanobis D^2 statistic for sixteen characters. The analysis of variance revealed significant differences among all genotypes for the characters studied. Based on Tocher's method, twenty five genotypes were grouped into six clusters with maximum number of fifteen genotypes in cluster I followed by cluster VI with four genotypes, cluster II with three genotypes and clusters III, IV and V each comprising of single genotype. The character, per cent juice sucrose at 300 DAP showed maximum contribution towards genetic divergence followed by fibre per cent at 300 DAP, brix per cent at 300 DAP and single cane weight at harvest. Maximum inter cluster distances were recorded between clusters III and VI followed by clusters V and VI. Based on good *per se* performance for majority of yield contributing characters and juice quality characters, genotype 93 V 297 from cluster III, could be used in hybridization with genotypes 2002 V 48 and 2008 V 257 from cluster VI, genotype, 2010 V 32 from cluster II and genotypes 81 V 48, 83 V 15, 91 V 83, 2003 V 46 and 2007 V 127 from cluster I. Similarly, genotype, 2000 V 59 from cluster V, could be used in hybridization with genotypes 2002 V 48 and 2008 V 257 from cluster VI, genotype 2010 V 32 from cluster II and genotype 2009 V 127 from cluster IV to get superior hybrids.

Key words: *Divergence and quality attributes, Sugarcane.*