Genetic Divergence Studies in Forage Sorghum (*Sorghum bicolor* L. Moench)

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ABSTRACT

Fifty four lines of forage sorghum were evaluated for genetic diversity using D^2 and principal component analysis for fifteen characters during *kharif,* 2011. The genotypes under study were grouped into eight clusters. The cluster I was the largest with 27 genotypes followed by cluster II (15) and cluster VI (7). Remaining clusters were solitary. The clustering pattern of genotypes indicated that geographical distribution and genetic diversity were not related to each other. The inter cluster distances were higher than the average intra cluster distances indicating wider genetic diversity among the genotypes of different groups. Maximum inter cluster distance was observed between cluster VI and VIII followed by cluster II and VIII, I and VIII and V and VIII showing wide diversity among the groups. Based on the cluster means, the important clusters are cluster VI for stem weight, stem girth, biomass per plant and crude protein, cluster V for days to 50 per cent flowering, leaf length, green fodder yield, green fodder yield per day, dry fodder yield and brix per cent. Crude protein per cent, stem weight, days to 50 per cent flowering, leaf width, plant height, number of leaves per plant and dry fodder yield have contributed more towards divergence among the genotypes.

Key words : D^2 statistics, Forage sorghum, Genetic divergence, Principal component analysis.