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Studies on genetic diversity in various quantitative characters in kalmegh (*Andrographis paniculata*) germplasm

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ABSTRACT : *Andrographis paniculata* rank 17th placed among 32 prioritized medicinal plants in India. The areal parts of the plant are used as medicine for the treatment as antipyretic, antioxidant, hepatoprotective etc. The plants are directly harvested from the forest for sale and use by self in Chhattisgarh, therefore, the population of this species are reducing day by day. Identification of variability exist should be identified so that cultivation techniques may developed so that the species may be saved from continuous harvesting from the forest. With this objective twenty two kalmegh accessions with 2 checks Anand Kalmegh-1 (Directorate of Medicinal and Aromatic Plant Board) and Simmegha (CIMAP) were evaluated to study the PCV, GCV, GA per cent and diversity pattern among the collected accession. The analysis of variance revealed that the collected accessions have significant difference for all the characters which confirms the variability in the collected accessions. The PCV value was slightly higher than the GCV showed the slight influence of environment in the expression of the accessions. The high GCV, PCV, h² and GA per cent was observed for the characters number of tertiary branches with 49.72, 50.10, 98.80 and 99.82, respectively. Dry herbage yield with 44.87, 45.96, 95.30 and 90.24, respectively. The genotype was studied for the diversity and D² statistic was done and the accessions were grouped into five clusters. The distribution patterns indicate that the maximum number of genotypes (7) were grouped into cluster II, followed by 6 in cluster I. The inter-cluster distance was higher than intra cluster distance indicating wide genetic diversity among the genotypes. The highest inter-cluster distance was observed between cluster III and IV followed by IV and V showed wider diversity among the groups. The highest intra cluster distance was observed for cluster II followed by I. The accession with IKM-1, IKM-2, IKM-7, IKM-20, IKM-23, IKM-24 can be used as potential donors for hybridization programme to develop variety with higher yield potential.

KEY WORDS : Genetic divergence, Accession, Kalmegh

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