



Morphological characterization of common bean (*Phaseolus vulgaris* L.) genotypes grown in Kashmir Valley

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ABSTRACT

Experimental material composed of 10 genotypes of common bean (*Phaseolus vulgaris* L.) { WB-494, SR-1, WB-939, WB-399, WB-640, WB-375, WB-967, WB-359, WB-335 & WB-933} selected for extensive studies like morphological characterization, estimation of genetic variability and other genetic parameters, presence of genetic diversity at phenotypic. The experiment was conducted at Research Farm, SKUAST-K, Shalimar, Srinagar during 2014.

Morphological traits of qualitative nature viz., growth habit, flower colour, days to 50% flowering, days to maturity, no. of pods plant⁻¹, no. of seeds pod⁻¹, seed colour, 100 seed weight and grain yield (q ha⁻¹) were analyzed which indicated presence of sufficient variability with respect to their traits. Analysis of variance revealed presence of significant genetic variation among these genotypes for all the traits studied. Genotypic coefficient of variation (GCV) was high for 100 seed weight, yield ha⁻¹; moderate for no of pods plant⁻¹ and for no of seeds pod⁻¹ and low for 50% flowering and for days to maturity. For all the traits, estimates of phenotypic coefficient of variation (PCV) were higher in magnitude than the corresponding estimates of genotypic coefficient of variation (GCV), indicating the presence of environmental effect. Heritability estimates (broad sense) were high for 100 seed weight, yield ha⁻¹.

Estimation of genetic divergence using Mahalanobis D^2 among bean genotypes was highly significant, while these genotypes got grouped into 4 clusters with cluster I having maximum of 4 genotypes and cluster III was monogenotypic. Inter-cluster distance was maximum between cluster-I and cluster-IV followed by cluster-II and cluster-IV. The maximum divergence came from yield ha⁻¹ (55.56%).

KEYWORDS: ANOVA, common bean, D^2 , morphological traits, qualitative nature