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Multivariate Analysis in Two Rowed Genotypes of Barley (*Hordeum vulgare* L.)

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Abstract: This study aimed to determine the genetic variation among barley (*Hordeum vulgare* L.) genotypes by using principal component method of factor analysis. A total of 47 two rowed genotypes were evaluated for 10 metric traits at CCS Haryana Agricultural University, Hisar during *Rabi* 2016-17. First four principal components had eigen values more than one and have explained altogether 70.76 % of the total variation in 10 metric traits which were mainly associated with harvest index; days to heading and maturity; biological yield, grain yield and number of tillers per meter; and spike length, number of grains per spike, plant height and1000-grain weight. The remaining principal components made very little contribution towards total variation and thus could not be considered of much practical value to barley improvement. The genotypes DWRUB 52, BH 14-07, BH 14-40, BH 13-26, BH 14-17, BH 14-25 and BH 15-05 were identified as most superior genotypes that might be considered desirable parents for hybridization. The results of the present study provide evidence of variability in barley and thus prove the adequacy of the principal component method in biological investigations.

Keywords: Principal component analysis, Factor analysis, Barley, Genotypes, Variation