

Genetic Variability and Principal Component Analysis in Eggplant (*Solanum melongena*)

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Abstract : Nine advanced cultivars and lines were planted in transplant trays on March, 2013. In mid-April 2014, nine cultivars and lines were taken from the seedling trays and were evaluated and compared in an experiment in form of a completely randomized block design with three replications at the Agricultural Research Station, Zahak. The results of the analysis of variance showed that there was a significant difference between the studied cultivars in terms of average fruit weight, fruit length, fruit diameter, ratio of fruit length to its diameter, the relative number of seeds per fruit, and each plant yield. The total yield of Sohrab and Y6 line with an average of 41.9 and 36.7 t/ ha allocated the highest yield respectively to themselves. The results of simple correlation between the analyzed traits showed the final yield was affected by the average fruit weight due to direct and indirect effects of fruit weight and plant yield on the final yield. The genotypic and heritability values were high for fruit weight, fruit length and number of seed per fruit. The first two principal components accounted for 81.6% of the total variation among the characters describing genotypes.

Keywords : eggplant, principal component, variation, path analysis

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