RESEARCH PAPER

Correlation and path coefficient analysis in greengram [*Vigna radiata* (L.) Wilczek]

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The correlation coefficients among twelve yield contributing traits with their path effects towards and seed yield using fifty-eight genotypes of greengram were investigated in during *Kharif* 2010. The analysis of correlation coefficient suggested that the magnitude of genotypic correlations were higher than the corresponding phenotypic correlations. The seed yield per plant had highly significant and positive correlations both at genotypic and phenotypic levels with number of pods per plant, number of pods per cluster, number of clusters per plant and number of seeds per pod. Seed yield per plant showed negative and highly significant correlation with days to maturity at both the levels and days to 50 per cent flowering at only genotypic level. The path coefficient analysis revealed that maximum direct effects as well as appreciable indirect influences were exerted by number of pods per plant, number of clusters per plant and number of pods per cluster towards seed yield per plant. Based on correlation and path analysis, number of pods per plant, number of clusters per plant, number of pods per cluster, number of seeds per pod and days to maturity were identified as the most important components of seed yield. It was apparent from the path analysis that maximum direct effects as well as appreciable indirect influences were exerted by number of pods per plant, number of clusters per plant and number of pods per cluster towards seed yield per plant. This suggested that emphasis should be given to these traits in selection programme for improvement of seed yield in greengram

Key words **:** Correlation, Greegram, Path analysis

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INTRODUCTION

Greengram [*Vigna radiata* (L.) Wilczek] is the important pulse crop of the India which is cultivated from humid tropic to arid regions. The productivity of greengram is also low as in the case of other pulse crops. Yield is a complex and poly genetically controlled highly environmental influenced trait governed by the interaction of many variables and selection if based merely on yield is not effective. The efficiency of selection will increase, if the nature and magnitude of inter-relationship among component characters and seed yield is understood. Correlation analysis is a biometrical technique to find out the nature and degree of association between various physico-chemical traits indicating yield, while path analysis splits the correlation coefficient into direct and indirect effect so as to measure the relative contribution of each variable towards yield. Hence, keeping the above aspects in mind, efforts were made to establish interrelationship among various yield contributing traits and also their contribution towards pod yield of greengram. This will be facilitating the breeder to design appropriate selection strategies to increase seed yield in greengram.

RESEARCH METHODOLOGY

Fifty-eight diverse genotypes of greengram were sown in a randomized block design with three replications at the Instructional Farm, Department of Agronomy, Junagadh Agricultural University, Junagadh, during *Kharif* 2010 under rained conditions. Each genotype was accommodated in a single row of 3.0 m length with a spacing of 45 cm between rows and 10 cm between plants within the row. The genotypes were randomly allotted to the plot in each replication. The experiment was surrounded by guard rows to avoid damage and border effects. All the recommended packages of practices