

Analysis Of Genetic Parameters For Yield And Certain Yield Components In Greengram

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ABSTRACT

Thirteen mungbean varieties selected from different locations in A.P. were evaluated for yield and its components during three seasons kharif, 2000-01, 2001-02, 2002-03. Wide range of variability was observed for various characters. Considerable amount of phenotypic and genotypic variability was observed for seed yield and component characters pods per plant and clusters per plant. High heritability and low genetic advance as percentage of mean were recorded for days to 50% flowering, days to maturity and plant height suggesting that selection based on these characters could be effective.

The character association studies indicated that selection based on days to 50% flowering, days to maturity, pods per plant, seeds per pod and 100 seed weight along with a medium plant height could be useful for improving the yield in greengram.

Key words : Variability, heritability, path analysis, mungbean and *Vigna radiata* (L.) Wilczek.

INTRODUCTION

Mungbean (*Vigna radiata* L. Wilczek) is an important pulse crop of India cultivated in all seasons. Yield is a complex character governed by large number of quantitative characters which are especially important in plant breeding. The present investigation was undertaken to evaluate available genotypes for yield and its components during kharif to estimate the variability, heritability and other genetic parameters.

MATERIALS AND METHODS

Thirteen (13) improved genotypes developed from different locations of A.P. were grown in a randomized block design with 3 replications during kharif 2001-02, 2002-03 and 2003-04 at Agricultural Research Station, Madhira. Each genotype was sown in a plot of 6 rows of 4 in length with 30 x 10 cm spacing between and within rows. Observations were recorded on 10 randomly selected plants for each genotype in each replication for days to 50% flowering, days to maturity, plant height (cm), pods per plant, clusters per plant, seeds per pod, 100 seed weight (g) and seed yield (kg / ha). Phenotypic and genotypic coefficients of variation and expected genetic advance were estimated as per standard procedure of Johnson *et al*, (1995). Correlations and path coefficient were computed by following standard statistical procedures Dewey and Lu (1959).

RESULTS AND DISCUSSION

The measure of transmission of a character from parent to offspring is termed as heritability, and consistent performance of a character under selection in succeeding generations depends on the magnitude of heritable variation present in relation to the observed variation. The estimates of genetic parameters are presented in Table 1. The values of phenotypic coefficients of variation are higher than genotypic coefficients of variation indicating the influence of environmental factor. The highest genotypic coefficient of variation was observed for seed yield followed by pods per plant and clusters per plant. Thus, there is a scope for improvement of these traits by selection. Similar results were reported earlier by Joshi *et al* (1998). High heritability and low genetic advance for days to 50% flowering, days to maturity, plant height, suggests non-additive gene action and indirect selection of these traits may be beneficial.

The character association studies (Table 2) exhibited that, plant height displayed significant and negative correlation with days to maturity, which is desirable. Seed yield exhibited significant and positive correlation with days to 50% flowering and seed weight. The other correlation coefficients are non significant. In general, genotypic correlation coefficients are higher than phenotypic correlation coefficient indicating the environmental influence on expression of these characters.

The correlation coefficients observed between yield and particular yield components is the net result of the

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