

ESTIMATE THE CORRELATION AMONG THE YIELD AND YIELD COMPONENT CHARACTER IN BLACKGRAM [*VIGNA MUNGO* (L.)]

Ranjeet A. Tambe*, Kajal B. Pandit and Ajay S. Aher

*Department of Genetics and Plant Breeding, Naini Agriculture Institute,
Sam Higginbottom University of Agriculture, Technology and Sciences,
Allahabad-211007 (U.P.), India*

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Abstract: The experimental material was consisting of 41 Black gram genotypes, check as T-9, during kharif 2017. The experiment was out in Randomised Complete Block Design with 3 replications at field experimentation centre of Department of Genetics and Plant Breeding, Sam Higginbottom University of Agriculture, Technology & Sciences. The observations were logged on five randomly taken plants to each treatment and replication for 13 quantitative characters viz. days to 50% flowering, days to 50% pod setting, plant height, number of primary branches per plant, clusters per plant, pods per plant, pod length, seeds per pod, days to maturity, seed index, biological yield, harvest index and seed yield to estimate the variability, heritability and genetic advance as % mean, character association and path analysis. High heritability along with high Genetic advance as % mean was observed for harvest index and seed yield per plant represents simple selection is effective to improve these characters. The correlations revealed that harvest index, seeds per pod, days to 50% pod setting, pods per plant, days to 50 % flowering, seed index and biological yield have the significant positive association with the seed yield per plant at both genotypic and phenotypic levels. The path analysis revealed that the harvest index, biological yield, days to 50 % flowering, plant height, pod length and clusters per plant had shown the true relationship with seed yield by establishing the positive correlations and direct effects at both genotypic and phenotypic levels, while branches per plant and days to maturity at genotypic levels and pods per plant and seeds per pod at phenotypic levels.

Keywords: Black gram [*Vigna mungo* (L.) Hepper], Genetic variability, Correlation, Path analysis

REFERENCES

- Al Jibouri, H.A., Mullar, P.A. and Rabinsion, H.F.** (1958). Genetic and environmental variances and co-variances in an upland cotton cross of inter specific origin. *Agronomy*, **50**:633-636.
- Babu, J. S., Reni, Y. P. and Ramana, M.V.** (2016). Character correlation and path coefficient in black gram [*Vigna Mungo* (L.) Hepper]. *International Research Journal of Natural and Applied Sciences*, **3**(7): 178-185.
- Babu, J. S., Reni, Y. P. and Ramana, M.V.** (2016). Character correlation and path coefficient in black gram [*Vigna Mungo* (L.) Hepper]. *International Research Journal of Natural and Applied Sciences*, **3**(7): 178-185.
- Bandi, H. R.K., Rao, K. N., Krishna, K. V and Srinivasulu, K.** (2018). Correlation and path-coefficient estimates of yield and yield component traits in rice fallow blackgram [*Vigna mungo* (L.) Hepper]. *International Journal of Current Microbiology and Applied Sciences* **7**(3): 3304-3309.
- Dewey, D.R. and Lu, K.H.** (1959). Correlation and path coefficient analysis of components of crested wheat grass seed production. *Agronomy Journal*, **51**:515-518.
- Falconer, D.S.** (1981). Introduction to Quantitative genetics, 3rd ed. Longman, New York. Pp 340.
- Hemalatha, K., Lal, S. S. and Lal G. M.** (2017). Study on Genetic Variability and Correlation in Blackgram (*Vigna mungo* (L.) Hepper) *Journal of Pharmacognosy and Phytochemistry*, **6**(4): 674-676.
- Hemavathy, A. T., Shunmugavalli, N. and Anand, G.** (2015). Genetic variability, correlation and path co-efficient studies on yield and its components in mungbean [*Vigna radiata* (L.) Wilezek]. *Legume Research*, **38**(4): 442-446.
- Johnson, H.W., Robinson, H.F. and Comstock, R.E.** (1955). Genotypic and Phenotypic Correlations in Soybean and their implications in selection *Agronomy*. **47**: 477-438.
- Parveen, S. I., Sekhar, M. R., Reddy, D. M. and Sudhakar, P.** (2011). Correlation and path coefficient analysis for yield and yield components in blackgram (*Vigna mungo* (L.) hepper). *International Journal of Applied Biology and Pharmaceutical Technology*. **2**(3): 619-625.
- Patidar, M. and Sharma, H.** (2017). Correlation and path coefficient studies in Blackgram (*Vigna Mungo* (L.) Hepper). *Journal of Pharmacognosy and Phytochemistry*, **6**(4): 1626-1628.
- Rajasekhar, D., Lal, S. S. and Lal, G. M.** (2017). Character association and path analysis for seed yield & its components in black gram [*vigna mungo* (L.) Hepper]. *Plant Archives*, **17**(1):467-471.
- Rolaniya, D. K., Jinjwadiya, M. K., Meghawal, D. R and Lal, G.M.** (2017). Studies on genetic variability in Black gram (*Vigna mungo* L. Hepper) germplasm. *Journal of Pharmacognosy and Phytochemistry*, **6**(4): 1506-1508.
- Shivade, H. A. Rewale, A. P. and Patil, S. B.** (2011). Correlation and path analysis for yield and yield components in black gram [*Vigna mungo* (L.) Hepper]. *Legume Research*; **34**(3):178-183.

*Corresponding Author

Singh, I. P. Sanjay Kumar Singh, J. D. and Singh, K. P. (2007). Genetic variation, character association and path analysis between grain yield and its component in black gram [*Vigna mungo* (L.) Hepper]. *Progressive Agriculture*7(1/2):113-115.

Sushmitharaj, D. V., Shoba, D. and Pillai, M. A. (2018). Genetic Variability and Correlation Studies in Black Gram (*Vigna mungo* [L.] hepper) with Reference to YMV Resistance. *International Journal of Current Microbiology and Applied Sciences*6: 2849-2856.