

## Correlation studies for yield and yield components in blackgram (*Vigna mungo* L.)

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### SUMMARY

The experiment was conducted on the field of Department of Agricultural Botany, Marathwada Agricultural University, Parbhani. The present investigation was carried out to study correlation of yield with different yield contributing characters in the variety BDU 1 which was obtained from Pulse Research Station, Badnapur. The yield was found to be highly significant and positively correlated with plant height (cm), leaf area (cm<sup>2</sup>), total dry weight (g/plant), number of pods per plant, number of grains per pod and 1000 grain weight (g), while it was negatively correlated with flower shedded. The present study indicated the relative importance of yield components to increase the yield of black gram.

**Key words :** Correlation, Yield components, Leaf area, Dry weight.

India occupies the largest area in the world under pulse crops. The pulse crops play an important role in Indian diet as they are rich source of proteins. The pulse crops improve soil fertility level by fixing and utilizing atmospheric nitrogen with the help of symbiotic nitrogen fixation. The black gram occupies unique position in Indian agriculture among the pulses. The yield is a complex character and it has association with different yield contributing characters. The present investigation was carried out to study the relative contribution of each character towards yield.

### MATERIALS AND METHODS

The experiment was conducted during *kharif* season of 2004-05 under rainfed conditions on the field of Department of Agricultural Botany, Marathwada Agricultural University, Parbhani. The experiment was laid out in factorial Randomized Block Design with three replications. The sowing was carried out by dibbling method under optimum moisture condition. The fertilizers were applied at the rate of 25kg N and 50kg P<sub>2</sub>O<sub>5</sub> per hectare in the form of urea and single super phosphate, respectively. Interculture operations were carried out to provide aeration to the soil and to keep the plots free from weeds. The observations were recorded on plant height (cm), leaf area (cm<sup>2</sup>), flowers shedded, total dry weight (g/plant), number of pods per plant, number of grains per pod, 1000 grain weight (g) and yield. The association of yield with different yield components was studied. The values of simple correlation coefficients were computed as per procedure illustrated by Snedecor and

Cochran (1986).

### RESULTS AND DISCUSSION

Simple correlation coefficients (r) values were worked out between yield and yield contributing characters are presented in the Table 1. The plant height was highly significant and positively correlated with leaf area, total dry weight, and number of pods per plant, 1000 grain weight and yield. While it was negatively correlated with flowers shedded. The trait leaf area was highly significant and positively correlated with total dry weight, number of pods per plant, number of grain per pod, 1000 grain weight and yield, while it was negatively correlated with flowers shedded. The character flower shedded had highly significant negative correlation for total dry weight, number of pods per plant and yield. It was negatively correlated with number of grains per pod and 1000 grain weight. The total dry weight was highly significant positively correlated with plant height, leaf area, number of pods per plant and yield. It was negatively correlated with flower shedded. It has significant association with number of grains per pod and 1000 grain weight.

The yield component, number of pods per plant was highly significant and positively correlated with plant height, leaf area, total dry weight, number of grains per pod and yield. It had negative association with flowers shedded and 1000 grain weight. The yield attribute 1000 grain weight had highly significant and positive correlation with plant height, leaf area and yield, while it had negative association with flower shedded, number of pods per plant and number of grains per pod. The yield was highly

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