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Correlation studies for yield and its components in soybean [*Glycine max* (L.) Merrill.]

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SUMMARY

The experiment was conducted on field of Department of Agricultural Botany, Marathawada Agricultural University, Parbhani. The present investigation was undertaken to study correlation of yield with its components for three soybean varieties namely *viz.* MAUS 61, MAUS 61-2 and MAUS 71. The seed yield was found significantly and positively correlated with leaf area (cm^2), number of branches, total dry weight (g) and number of leaves, while it was negatively correlated with plant height. The correlation of seed yield, suggest that the yield improvement is correlated with yield traits.

Key words : Correlation, Yield, Soybean, Total dry weight.

Soybean [*Glycine max* (L.) Merill.] is one of the important pulse crop of the world. Its importance is increasing day by day due to its high nutritive value. It is truly wonder crop with around 40-42% protein and 20 % oil content. Soybean milk is gaining popularity day by day which is equivalent with that of cow milk in calorific value. Correlation coefficient analysis measures the mutual relationship between two plant characters. It determines the selection criteria of different component characters for simultaneous improvement of yield. The present study was, therefore, undertaken to find out relative importance of degree of association of different yield contributing traits with seed yield.

MATERIALS AND METHODS

The experiment was conducted on the field of Department of Agricultural Botany, Marathawada Agricultural University, Parbhani. The experiment was conducted during *kharif* 2005 with certified seeds of three soybean varities *viz.*, MAUS-61, MAUS-61-2 and MAUS-71. The experiment was laid out in factorial randomized block design with two replications. The sowing was done with spacing of 5 cm plant to plant and 45 cm row to row distance. The normal agronomic package of practices were carried out from time to time. Five plants per treatment were randomly selected from each entry for recording the observations for seed yield and its components.

RESULTS AND DISCUSSION

The analysis of variance indicated highly significant differences among the genotypes for all the characters studied. The correlation coefficients for yield and its components are presented in the Table 1. The plant height was positively correlated with number of leaves, leaf area, total dry weight and number of pods per plant, while it

Table 1 : Simple correlation coefficient between yield and yield components

Character	Plant Height	No. of leaves	Leaf area (cm^2)	No. of branches	Total dry weight(g)	No. of pods/plant	No. of grain/pod	100 grain wt. (g)	Yield (q/ha)
Plant height (cm)	1.000	0.422	0.389	-0.452	0.398	0.209	-0.010	-0.149	-0.178
No. of leaves		1.000	0.796	0.171	0.451	0.614	0.549	-0.069	0.439
Leaf area (cm^2)			1.000	0.336	0.664	0.875	0.812	0.215	0.671
No. of branches				1.000	0.375	0.590	0.751	0.484	0.800
Total dry weight (g/plant)					1.000	0.791	0.634	0.152	0.683
No. of pods/ plant						1.000	0.905	0.486	0.891
No. of grains/ pod							1.000	0.525	0.903
1000 grain weight(g)								1.000	0.472

* and ** Significance of values at P=0.05 and 0.01, respectively

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