

Path analysis for seed yield and quality attributes in soybean (*Glycine max. L.*)

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SUMMARY

A study conducted with thirty diverse genotypes of soybean indicated that seed yield was significantly correlated with plant height, pod bearing length, number of pods per plant and number of seeds per plant.

Key words: Path coefficient, Soybean, Yield components.

Correlation and path coefficients furnish a realistic basis for the allocation of weightage to each of the contribution components in deciding upon a suitable selection criteria for the genetic improvement of complex characters like seed yield, oil % and protein %. Hence, present study was undertaken.

MATERIALS AND METHODS

Experimental material comprised of thirty genotypes of soybean which were obtained from Pantnagar, Bihar, Maharashtra, Jabalpur and Ludhiana. These genotypes were grown in Randomized Block Design with three replications during Kharif 2003-04. Every genotype grown in two rows of 5m length keeping row to row

distance of 45cm and plant to plant 10cm. Fertilizer was applied at the rate of 20kg N, 80kg P and 20kg K per hectare as a basal dose. Five competitive plants from each genotype per replication were tagged to record days to 50% flowering, days to maturity, plant height (cm), pod bearing length (cm), number of pods per plant, number of seeds per plant, 100 seed weight (g), protein (%), oil (%) and seed yield per plant (g). Genotypic correlation and path analysis were worked out as per the method of Dewey and Lu (1959).

RESULTS AND DISCUSSION

At genotypic level, seed yield for plant had significant positive association with plant height, pod

Table 1: Path coefficient analysis for seed yield & quality attributes in soybean/

Characters	Days to 50% flowering	Days to maturity	Plant height (cm)	Pod bearing length (cm)	Number of pods per plant	Number of seeds per plant	100 seed weight (g)	Protein (%)	Oil (%)	Genotypic correlation for seed yield (g)
Days to 50% flowering	-0.005	0.091	-0.107	0.181	-0.484	0.732	-0.033	0.001	0.058	0.288
Days to maturity	0.002	-0.238	-0.074	0.051	-0.013	-0.047	-0.040	-0.004	0.007	-0.311
Plant height (cm)	-0.001	-0.002	-0.766	0.885	-0.731	1.239	-0.035	0.098	-0.062	0.472**
Pod bearing length (cm)	-0.001	-0.001	-0.764	0.875	-0.737	1.268	-0.033	0.107	-0.069	0.482**
Number of pods per plant	-0.001	-0.002	-1.513	0.630	-1.823	1.609	-0.004	-0.001	-0.014	0.892**
Number of seeds per plant	-0.002	0.004	-0.213	0.420	-1.845	2.578	-0.008	-0.001	-0.046	0.847**
100 seed weight (g)	-0.021	0.042	0.020	0.065	0.002	-0.047	0.170	0.027	0.012	0.166
Protein (%)	0.001	0.086	-0.320	0.366	0.217	-0.320	0.035	0.010	0.035	0.148
Oil (%)	0.001	0.006	-0.887	-1.444	-0.090	0.410	0.011	-0.001	2.288	0.223

Bold, figures and diagonals are direct effect.

Double asterisk ** indicate figure is not significantly different at P = 0.01