Association of characters and path coefficient analysis for forage and related traits in bajra x napier grass hybrids

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SUMMARY
The correlation and path coefficients were worked out for forty derivatives of bajra x napier grass hybrids for green forage yield and twelve yield contributing characters. Green forage yield was significantly and positively associated with dry matter yield, crude protein yield, number of tillers and plant height. Path analysis revealed that characters viz., dry matter yield exhibited the highest positive direct effect on green forage yield followed by crude protein content, stem girth at II\textsuperscript{nd} internode and plant height. Considering both, the correlation coefficients and path coefficients together, dry matter yield, plant height, and crude protein content emerged as important components of green forage yield which should be given due importance during indirect selection aimed at green forage yield improvement in bajra x napier hybrids.

Key words: Correlation, Path analysis, Green forage, Dry matter, Bajra x napier

MATERIALS AND METHODS
The material under investigation consisted of forty derivatives of bajra x napier grass hybrids maintained at Grass Breeding Scheme, MPKV, Rahuri. The experiment was conducted at Grass Breeding Scheme in a randomized block design with two replications for green forage yield and twelve yield contributing characters. Each genotype of bajra x napier grass hybrids was represented by two rows of 6m length. Spacing of 90 cm between rows and 60 cm between the plants within a row was maintained. After planting one irrigation was given and subsequent irrigations were given as an interval of 10-12 days. Top dressing of 25 kg of ‘N’ per ha was applied after each cut. Observations on characters except green forage yield, dry matter yield and crude protein yield were recorded on ten randomly selected plants in each experimental plot at the time of second cut and averages were worked out. Observations on green forage yield, dry matter yield and crude protein yield were recorded and expressed in kg/plant. First cut was taken 55 days after planting and subsequent cuts were taken at interval of 40 days. To obtain crude protein content (%) nitrogen percentage was determined by Microkjeldahl’s method (Thimmaiah, 1999) and per cent nitrogen was multiplied by conversion factor 6.25. Oxalic acid content was measured as per the procedure given in standard methods of biochemical analysis (Thimmaiah, 1999). The data collected on individual characters were subjected to the method of analysis of variance commonly applicable to the Randomized Block Design (Panse and Sukhatme, 1967). The genotypic co-variances (Singh and Chaudhari, 1977), genotypic correlation coefficients (Johnson, et al., 1955) and path-coefficients (Dewey and Lu., 1959) were