VARIABILITY, CHARACTER ASSOCIATION AND PATH ANALYSIS STUDIES IN FORAGE SORGHUM

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Abstract: Economic yield attributing characters were studied in forage sorghum for crop improvement through selecting high yielding characters. Significant variations were recorded among the genotypes for various yield traits studied. High values for phenotypic coefficient of variation (PCV) and genotypic coefficient of variation (GCV) was noted for plant height, leaf breadth, internode length and green fodder yield per plant. High heritability coupled with high genetic advance as percent of mean was revealed for plant height, leaf breadth, internode length, number of leaves per plant, leaf stem ratio, leaf area, total soluble solids and green fodder yield per plant. Green fodder yield per plant observed positive and significant correlation with plant height, number of leaves per plant, internode length, leaf area and protein content at both the levels. The result of path coefficient analysis showed that leaf area, leaf breadth, leaf length, plant height and protein content had positive direct effect on green fodder yield. Sorghum is one of the important food crops of the world. To exploit the potentiality of sorghum several crop improvement programmes have been undertaken. Yield is a complex character, which depends upon many independent contributing characters. Knowledge of the magnitude and type of association between yield and its components themselves greatly help in evaluating the contribution of different components towards yield. Yield being a polygenic character is highly influenced by the fluctuations in environment. Hence, selection of plants based directly on yield would not be very reliable. Improvement in sorghum yield depends on the nature and extent of genetic variability, heritability and genetic advance in the base population and besides the information on the nature of association between yield and its components helps in simultaneous selection for many characters associated with yield improvements. It was concluded that these characters could be considered as significant selection criteria for yield improvement in forage sorghum.

Keywords: Sorghum bicolor, Variability, Correlation, Path coefficient analysis

REFERENCES


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