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Yash Pal Yadav

Chaudhary Charan Singh Haryana Agricultural University, India

Shashi Kant

Chaudhary Charan Singh Haryana Agricultural University, India

H. P. Yadav

Chaudhary Charan Singh Haryana Agricultural University, India

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Correlation and path coefficient analysis of dry fodder yield and its attributes in dual purpose pearl millet (*Pennisetum glaucum*)

Yash Pal Yadav , Shashi Kant , H .P . Yadav
CCS HAU , Regional Research Station ,
Bawal (Rewari) 123 501 , Haryana . India
E-mail : yashpalydv@rediffmail .com

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Introduction Pearl millet is the only cereal that reliably provides grain and fodder under dry land conditions on shallow or sandy soils with low fertility and low water holding capacity in hot and dry environments . Yield is a complex character and its improvement largely depends upon enhancement of component traits . It is therefore essential to know the association of various traits with dry fodder yield . This paper reports on a study of the association among dry fodder yield and its component traits in pearl millet .

Materials and methods A set of 30 genotypes (7 released hybrids , 17 pre-release hybrids and 6 composite populations) of pearl millet developed by CCS Haryana Agricultural University was used in the study . The experiment was grown in two environments (Hisar and Bawal) in a randomized block design with three replications during rainy season of 2005 . Data were recorded on five competitive plants per replication for dry fodder yield (g/plant) and its contributing traits ; plant height (cms .) , ear length (cm) , total tillers (number/plant) and biological yield (g/plant) . Path coefficient analysis was carried out according to Dewey and Lu (1959) .

Results Analysis of variance revealed significant ($P < 0.05$) genotypic differences for all the traits indicating that enough genetic variability was present in the material under investigation . The highest genotypic and phenotypic coefficient of variation was observed for dry fodder yield and it was followed by biological yield . In general , the magnitude of genotypic correlation was slightly higher than phenotypic correlation for most of the characters studied indicating strong inherent association among characters . Dry fodder yield expressed positive and significant ($P < 0.05$) correlation with ear length , total tillers/plant and biological yield . Total tillers/plant had positive and significant ($P < 0.05$) association with dry fodder yield and biological yield . Similarly , ear length also had positive and significant ($P < 0.05$) association with dry fodder yield and biological yield . Plant height had positive and significant ($P < 0.05$) association with ear length and biological yield . Biological yield showed positive and significant ($P < 0.05$) association with plant height , ear length , total tillers/plant and dry fodder yield . Path coefficient analysis revealed that ear length , total tillers/plant and biological yield had high positive direct and indirect influence on dry fodder yield .

Conclusion Results from this study indicate that when selecting genotypes for improved dry fodder yield , more emphasis should be given to ear length , total tillers/plant and biological yield .

Reference

Dewey , D .R . , Lu , K .M . , 1959 . A correlation and path coefficient analysis of components of crested wheat grass and seed production . *Agronomy Journal* 51 , 515-518 .