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Research Paper

Interpreting genotype x environment by non-parametric methods for malt barley evaluated under north western plains zone

■ **AJAY VERMA, V. KUMAR, A. S. KHARAB AND G. P. SINGH**

See end of the paper for authors' affiliations

Correspondence to :

AJAY VERMA

Statistics and Computer Center, ICAR-Indian Institute of Wheat and Barley Research, KARNAL (HARYANA) INDIA

Email : verma.dwr@gmail.com

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ABSTRACT : The present study was carried out to identify malt barley genotypes with high yield and stability across eight different environments, using non-parametric statistical measures. Descriptive statistics MR, SD and CV identified DWRB147, DWRB150 and RD2943 stable genotypes. BH902 and PL890 were identified as unstable genotypes by CMR CSD and CCV. Non-parametric measures selected DWRB147 and DWRB150 as the stable genotypes and BH902 and PL890 unstable genotypes. Significant tests for S_i^1 and S_i^2 were based on sum of Z_i^1 and Z_i^2 measures and sum of Z_i^1 was greater than critical value confirmed significant differences among the twenty genotypes. Results of the NP_i^2, NP_i^3 and NP_i^4 were similar for unstable performance of BH902, DWRB150 and DWRB147. Biplot analysis of PCA1 and PCA2 accounting for 70.08 per cent showed three distinguish groups among non-parametric measures. Clustering by Ward's hierarchical method expressed four clusters by using the squared Euclidean distance as dissimilarity measure.

KEY WORDS: Non- parametric measurements, Rank correlation, Biplot analysis, Hierarchical clustering

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