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Adaptation and Stability Analysis in Some Bread Wheat Genotypes

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Abstract: Genotype x environment interaction is a challenging issue to plant breeders in improving high-yielding, stable genotypes for variable environments. Several methods of measuring stability of genotypes tested across a range of environments have been proposed. The grain yields of fifteen bread wheat (*Triticum aestivum*L.) genotypes grown at eight different locations were used to assess adaptation and stability characteristics of the genotypes and to study associations among these parameters. According to most of the parameters used in the present study, Kiraç 66, Es-kbvd-15 and Ank-92-1 appeared to have a good level of general adaptation to all environments. Mean yield was highly correlated with S_i^2 , b_i , b_i , and a_i . The regression coefficients b_i , b_i , and a_i were perfectly rank correlated ($r=1.00$) with each other as well as with S_i^2 and CV_i . Eberhart and Russell's Sd_i^2 statistic was highly associated ($r=0.93^{**}$) with Tai's I_i . The stability statistics $S_i(2)$ and $S_i(3)$ of Hühn showed a good rank correlation with CV_i , W_i^2 , and Sd_i^2 . The statistics based on the ranks of genotypes over environments, such as $S_i(2)$ and $S_i(3)$, would be a potential alternative to the parametric approaches currently used.

Key Words: Bread Wheat, *Triticum aestivum* L., Genotype x Environment Interaction, Adaptation, Stability parameters.

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