RESEARCH PAPER

Wheat genotypes evaluated under central zone for stability analysis by rank based measures considering BLUP and BLUE of yield values

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Abstract : Rank based measures of stability had been compared for wheat genotypes evualated in Central Zone of the country as per the BLUP and BLUE of yield values. Measures based on ranks of BLUP of original yield for 2016-17, S_i^s measures identified G3, G7, G4 as stable genotypes. Corrected yield measures CS_i^s selected G4, G7, G3 for stable performance. Values of $NP_i^{(s)}$ identified G1, G6 as of undesirable types. Association analysis observed positive correlations of S_i^s, with others and themselves. Positive relationships also exhibited by CS_i^s and $NP_i^{(s)}$ values to other measures. Biplot analysis exhibited cluster of S_i^6 , S_i^3, CV, $NP_i^{(2)}$, $NP_i^{(3)}$, $NP_i^{(4)}$ and CS_i^7. Larger cluster comprised of $NP_i^{(1)}$ CCV, CSD S_i^1, S_i^2, S_i^4, S_i^5, S_i^7, CS_i^1, CS_i^2, CS_i^3, CS_i^4, CS_i^5, CS_i^6 measures. Based on BLUE's of genotypes yield, measures S_i^s found G3, G7, G4 as the stable genotypes, however G1, G2 would express unstable performance. CS_i^s identified G7, G3, G6 as opposed to G3, G5, G7 genotypes as by values $NP_i^{(s)}$. Positive correlations exhibited by S_i^s except of negative with CMR, CMed, Z1 and Z2 values. Ranks of genotypes as per values of CS_i^s and $NP_i^{(s)}$ measures expressed direct relationship with most of the measures. Biplot analysis observed large cluster comprised of CCV, CSD, $NP_i^{(1)}$, S_i^1, S_i^2, S_i^4, CS_i^1, CS_i^2, CS_i^3, CS_i^4, CS_i^5, CS_i^6, CS_i^7 measures. Second year of study (2017-18) as per BLUP's seen, S_i^s settled for G6, G5, G3 genotypes. While $NP_i^{(s)}$ settled for G6, G3,G5 as genotypes of stable performance. Highly significant negative correlation of yield observed with most of the measures MR, CV, Med, S_i^3, S_i^6,CMR,$NP_i^{(2)}$, $NP_i^{(3)}$, $NP_i^{(4)}$. Biplot analysis as per first two significant components (accounted for 88.7 %) marked larger cluster contains CS_i^s with $NP_i^{(1)}$, S_i^1, S_i^2 S_i^4, S_i^5 S_i^7,SD, CSD measures. S_i^s rank based measures as per BLUE's of genotypes pointed towards G5,G4, G6, G1 whereas G6, G5, G1,G3 by CS_i^s values. Wheat genotypes G1,G2, G3,G5 settled by least values of $NP_i^{(s)}$. Direct relationships portraited by S_i^s, CS_i^s and $NP_i^{(s)}$ with others. Larger cluster grouped $NP_i^{(s)}$, CV, CCV, Z1, Z2, Yield, GAI, CS_i^5, CS_i^6 measures.

INTRODUCTION

Wheat genotypes possessed high yield with broad adaptations were recommended for diverse environmental conditions cultivation to ensure food security of the country. Presence of significant genotype-

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