Abstract:

Eighteen pearl millet (Pennisetum glaucum L.) genotypes were evaluated under normal irrigation and water stress conditions in the autumn of 1997 at two locations, namely, El Rawakeeb and Shambat, Sudan, using split–plot design with three replications. Irrigation every 7 to 10 days and every 19 to 21 days were assigned to the main plots, and the genotypes to the subplots. The sowing date was in the last week of July at the two locations. Data were collected on grain yield/ha and its components; namely, grain yield/plant, number of fertile tillers/plant, number of seeds/head, 1000-seed weight and harvest index. The data of each level of watering treatment in each location were analyzed as a separate environment. Grain yield exhibited strong positive phenotypic and genotypic correlations with most of its components under the different environments. However, no definite pattern was obtained in study of the correlation among the genotype performance under the different testing environments, which was probably due to the significant genotype x environment interaction. Negative correlations were obtained between the performances at El Rawakeeb and at Shambat under water stress for number of fertile tillers/plant. This relation influenced the degree of associations between this trait and other traits in these environments.