Abstract

A study was conducted, during the 2005-2006 cropping season, with the aim to quantify genotype x location experienced by barley and to determine stable genotypes under diverse Algerian growing conditions. Field experiments were conducted with twelve genotypes at six locations across the country, in a completely randomized block design with three replications in each environment. The combined analysis of variance showed significant genotype x location interaction. The additive main effect and multiplicative interaction analysis revealed that 29.33% of the treatments variability was accounted for by the interaction. The first two interaction principal components absorbed 82.6.5% of the interaction sum squares. The additive main effect and multiplicative interaction analysis identified Fouara and Acsad $_{176}$as genotypes having wide adaptation, above average grain yield, high nominal yield and high yield stability. Bahia exhibited a specific adaptation. Plant traits acting as major sources of interaction were plant height, straw yield, number of days to heading, number of spikes m $^{-2}$, and number of grains per spike. Variation in accumulated rainfall in winter and June, as well as the mean winter temperature were among the environmental co-variables causal of the interaction