

عنوان مقاله:

Evaluation of rain-fed wheat (*Triticum aestivum* L.) genotypes for drought tolerance

محل انتشار:

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خلاصه مقاله:

Drought stress is one of the most important environmental stresses that have limited the production of wheat, especially in arid and semi-arid regions of the world. To recognize drought tolerant rain-fed wheat genotypes and to determine the best tolerance/susceptibility indices, a study was conducted at the Agricultural Research Station of Miandoab for two cropping years (۲۰۱۳-۱۵). The experimental materials included ۱۲ rain-fed wheat genotypes investigated in two separate field experiments based on randomized complete blocks design with three replications under both rain-fed and supplemental irrigation conditions. The combined ANOVA for grain yield and agro-physiological traits showed that there was a large genetic difference between wheat genotypes for grain yield and studied traits in response to drought stress among years and moisture regimes. The different drought tolerance/susceptibility indices were used to characterize drought tolerance of genotypes. Generally, a reduction of RWC in drought tolerant genotypes (genotypes ۶, ۲, ۱۱, and ۱۰) was lower compared to the sensitive genotypes (genotypes ۴ and ۸). Cluster analysis based on drought tolerance indices categorized genotypes into two main groups. The genotypes belonging to the cluster ۱ could be introduced as tolerant to the drought conditions. According to MSI (Multiple scoring index), genotypes ۱۰ (Seafallah/۳/Sbn//Trm/K۲۵۳) and Saein had the best combination of productivity and resistance to drought stress. The significant correlation between MSI with grain yield under drought conditions indicated the superiority of MSI as a useful tool for efficient selection of drought-tolerant genotypes. In the present study there was no significant correlation between RWC and RWL with MP, GMP, STI and MSI indices under both conditions.

کلمات کلیدی:

Cluster analysis, Drought stress, Multiple scoring index, productivity capacity index

