

## عنوان مقاله:

Traits associated with drought tolerance in spring durum wheat (*Triticum turgidum* L. var. durum) breeding lines from international germplasm

## محل انتشار:

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## خلاصه مقاله:

Knowledge of traits associated with drought tolerance would be useful for developing breeding materials for target environments. To study these traits, 119 spring durum wheat breeding lines (BLs) from the International Maize and Wheat Improvement Center (CIMMYT) were evaluated along with local checks (one modern cultivar and three landraces) in three experiments under terminal and non-terminal drought stress conditions in the 2009-10 and 2010-11 cropping seasons. Ten agro-physiological traits were measured and recorded. Best linear unbiased prediction (BLUP) data representing adjusted genotypic means were used to analyze trait relations and trait profiles of genotypes. Durum wheat BLs showed considerable variability for yield and agro-physiological traits that could be exploited in the national durum wheat breeding programs. Grain yield reduction due to terminal drought stress ranged from 29.1-64.8%. In contrast to the BLs, the landraces were characterized by minimal responsiveness to improved environmental conditions. Six BLs were identified as having high drought response index (DRI) and low grain yield reduction, and thus may be useful to national spring durum wheat breeding programs. Significant correlations between DRI and traits such as canopy temperature, SPAD reading, plant height, flag-leaf length and heading date suggest these traits could be useful for screening durum wheat BLs for drought tolerance. Results indicated that both grain yield and specific adaptation traits are useful criteria in breeding durum wheat for drought environments and should be incorporated into breeding materials to achieve optimum performance and adaptation to drought stress conditions in Iran.

## کلمات کلیدی:

canopy temperature, drought response index, physiological maturity, Supplemental irrigation, terminal drought

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1839761>

