

عنوان مقاله:

Response of grain yield and yield components of promising genotypes of spring rapeseed (*Brassica napus* L.) under non-stress and moisture-stress conditions

محل انتشار:

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خلاصه مقاله:

To assess moisture stress tolerance at the reproductive growth stage in 11 promising genotypes of spring rapeseed (*Brassica napus* L.), two field experiments were conducted in two growing seasons (2008-2010) at the Agricultural Research Center of Safiabad, Dezful, Iran. Genotypes were sown under two non-stress (well-irrigated) and moisture stress (irrigation ceased at flowering) conditions using a randomized complete block design with three replications for each moisture regime. Agronomic traits (plant height, number of siliques per plant, number of grains per silique, test grain weight, grain yield, days to flowering, days to maturity and oil content) were measured and recorded. Genotype and moisture regime main effects were highly significant for all the measured traits. Moisture regime × genotype interaction was also highly significant for silique per plant, flowering period and oil content traits, suggesting different responses of genotypes in different moisture conditions. Grain yield reduction (10.9%) in genotype 5 (G5) under moisture stress conditions was significantly lower than in all other genotypes. Genotype 11 (G11) produced the highest oil content, which was significantly higher than that produced by other genotypes in either regime. A significant positive correlation coefficient ($r = 0.578^*$) was observed between grain yield and oil content under non-stress conditions. Grains silique-1 had a significant negative correlation with date of maturity under well-watered ($r = -0.711^{**}$) and moisture stress ($r = -0.634^*$) conditions. Calculated stress tolerance index (STI) varied from 0.47 for G7 to 1.01 for Hyola401. G1 and G4 with high STI values were identified as highly tolerant genotypes. This was in agreement with conclusions reached based on agronomic traits. It is concluded that G1 with 1974 kg ha⁻¹ and G4 with 2511 kg ha⁻¹ grain yields could be suitable substitutes for cv. Hyola401 under moisture stress and non-stress conditions, respectively.

کلمات کلیدی:

agronomic traits, drought tolerance, Grain yield, oil content, Stress tolerance index

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