

Biplot Trait Analysis of Some of Canola (*Brassica napus* L.) Genotypes in Irrigation and Drought Stress Conditions

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Abstract

Canola is an important industrial plant in oil production, and in recent years, it has drawn a lot of alteration due to its adaptation to the arid regions. To determine the relationship between these traits and traits relevant to yield at both normal irrigation and drought stress condition and To evaluate the effect of water deficient on canola genotypes at vegetative and generative stages, the experiment was conducted in the research farm Institute of Plant Breeding of Karaj using randomized complete block design with four replications on 25 genotypes under two normal irrigation and drought stress conditions. The data were analyzed by biplot and path analysis methods. Correlation coefficients between yield and other characteristics were calculated and a high significant relationship with yield component was observed. Path analysis in both normal irrigation and drought stress conditions showed that harvest index and biological yield traits had high direct effects on seed yield and these traits can be introduced as the most important traits of effective yield and used as the selection criteria for grain yield for reformation in canola. A positive and significant correlation was observed between seed yield and the number of seeds in main pod, and also the number of seeds in branch pod and the number of seed in pod. In order to study interrelationships between traits and facilitate visual comparison of genotypes, treatment biplot method was exploited. In the normal irrigation condition, genotypes Jura, Elvis, Eshydromel, GKH305 and Vectra, and at drought stress condition, genotypes Jura, Eshydromel, GKH305 and GKH1103 were introduced as superior genotypes because they have favorable traits such as high seed yield, number of seeds in main pod, number of seeds in branch pod and number of seeds in pod.

Keywords: *Biplot Analysis, Drought Tolerance, Canola, Path Analysis*