

Study of Terminal Drought Stress on Yield, yield Components Oil and Protein, Percentage and Root Growth Canola Under Ahvaz Climate Conditions

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Abstract

This research was carried in a pot experiment in order to study the effect of terminal drought stress on yield, yield components oil and protein percentage and root growth, in Khuzestan agricultural and natural resource research center in 2008-2009 years. Treatments were consisted of drought stress including 50, 60 and 70 percent of water use content, which was applied from early heading stage until completely repining time, and three springs Canola cultivar including shirali, hayola 401 and R.G.S. Treatments were conducted as factorial experiment using completely randomized design with three replications. Measurements were included of yield, yield components, oil and protein percentage, root length, diameter, root volume, and root dry matter. The results showed that, significantly, drought stress reduced grain yield, biological yield and harvest index and the average of reduced of them during 2 years were 21.3, 29.3, and 32.1 percent respectively. Among grain yield components, grain weight and pod number have been reduced 28.3 and 49.4 percent respectively in response of drought stress. Drought stress decline 9.1 percent oil and increased 16.6 percent protein. Drought stress reduced root and dry matter and increased root diameter .mean root length, dry matter reduced 55 and 36.9 percent respectively and root diameter increased 58 percent in response of drought stress. The results showed that under Khuzestan climate condition terminal drought stress has decreased canola production by affecting root growth and also by reducing yield, yield components and decline oil percent.

Keyword: *Drought Stress, Root, Yield, Oil, Canola*