

## ABSTRACT

### THE EVALUATION OF DRIP IRRIGATION APPLICATIONS ON SECOND CROP SUNFLOWER YIELD and QUALITY IN SÖKE REGION

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This research was conducted to determine the effect of different irrigation intervals and levels on yield, some quality parameters (plant height, stem diameter, the diameter of head, seed weight, oil percentage of seed) water use efficiency and yield response factor of sunflower in Söke conditions during the year of 2012. Experiment was set up out in randomized plot design with two factors and three replications. In the trials, irrigation water was applied to plant as 0 %, 40 %, 60 %, 80 %, 100 % and 120 % of evaporation from Class A Pan corresponding to 3- and 6-day irrigation frequencies. The results revealed that irrigation intervals and levels affected the seed yield and quality parameters; the highest seed yields were obtained as 4916 kg/ha at full irrigation level of 100 % ( $K_{100}$ ) of control plot and in 6 days of intervals. The amounts of applied irrigation water 375.0 mm and seasonal water consumption value 564.9 mm in the full irrigation treatment. Irrigation water was applied 6 times during the growing season in the suggested plots ( $K_{100}$ ). Water use efficiency values were between 0.71-1.22 kg/m<sup>3</sup>. The yield response factor ( $k_y$ ) was found to be 0.74 in the relationship between the relative evapotranspiration deficit and the relative yield reduction for total growing season.

**Key words:** sunflower (*Helianthus annuus L.*), irrigation intervals, irrigation level, drip irrigation, yield response factor, oil percentage of seed