

Effect of water regime and varietal differences on yield, its components and chemical constituent of Sunflower plant

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Abstract : This investigation was carried in order to evaluate the effect of water regime on growth characters, yield, yield components and some chemical constituent of two sunflower cultivars. The two field experiments were conducted in Wadi El-Rayyan, El-Fayoum Governorate, Egypt, in the two summer seasons of 2014 and 2015 seasons, under newly reclaimed sandy soil. Water regime treatments i.e.(Normal irrigation, omitting the 3rd irrigation, omitting the 4th irrigation and omitting the 5th irrigation) were added in the main plots, while the two sunflower cultivars Pioneer-6480 and Haisun-354 were allocated in the sub plots. The results could be summarized as follows.

1-It is clear from data that water regime had a significant effect on growth characters at 60 and 75 days from sowing except LA (cm²), where normal irrigation gave the highest values followed by omitting the 4th irrigation. Analysis of variance showed significant difference among water regime, where normal irrigation outweigh the other treatments followed by omitting the 4th irrigation.

2-Pioneer-6480 cultivar significant surpassed Haisun-354 cultivar in growth characters at 60 and 75 days after sowing in both seasons. Also results show that variety factor had a significant effect on yield and yield components.

3-Regarding of the interaction between sunflower cultivars and water regime results showed that there were significant differences in growth characters under study at 60 and 75 days from sowing except plant height and LA (cm²) at 60 and 75 days from sowing and SLA (cm² /g) at 75 days from sowing. At the same time the value of interaction in yield and its components did not reach to the significant level except shelling percentage.

Keywords: Sunflower, cultivars, water regime, growth parameters, yield and its components.