



ORIGINAL ARTICLE

EFFECT OF IRRIGATION PERIODS, TILLAGE SYSTEMS AND THEIR INTERACTIONS ON THE GROWTH TRAITS FOR THREE CULTIVARS OF RICE (*ORYZA SATIVA* L.)

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Abstract: A field experiment was conducted during the autumn season 2017-2018 in the fields of the Technical Institute of Al-Shatrah to know the response of three cultivars of rice *Oryza sativa* (Anber 33, Mchkab and IR64) to different irrigation periods (continuous irrigation, irrigation after every two days and irrigation after every four days) under perpendicular tillage systems of one-time tillage and two-time tillage. The experiment was conducted by using the randomized complete block design (RCBD) with the split-split plot arrangement and with four replicates. The tillage systems occupied the main plot and the sub-plot included irrigation periods while the sub-sub plot included rice cultivars. The results showed that both the plant height, the number of days from cultivated up to 50% flowers, the number of days from cultivated to the physiological maturity, the flag leaf area (cm) and the panicles length/cm were significantly affected by the factors. Where the results indicated the excelled of twice perpendicular tillage in all growth traits. The results also showed that the treatment of continuous irrigation was significantly excelled on the other two treatments in all studied traits, while the results also showed cultivar Anber 33 significantly excelled on the other cultivars in all studied traits. The results of the statistical analysis also found significantly bi and triple interaction between the study factors in most of the studied traits and The triple interaction between the perpendicular tillage system and the Anbar 33 cultivar under continuous irrigation gave the highest average in all studied traits.

Key words: Irrigation periods, Tillage systems, Rice, *Oryza sativa* L., Randomized complete block design (RCBD).

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