



Physiological Response of Triticale ($\times$ *Triticosecale* Wittmack) Cultivars to Different Seeding Rates

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ABSTRACT

A field experiment was conducted during winter of 2023–2024 at the Agricultural Research Station, College of Agriculture, University of Basra. The response of four triticale ($\times$ *Triticosecale* Wittmack) cultivars, namely, Admiral, Farah, Amal 7 and Almohanad, to different seeding rates (140, 160 and 180 kg ha⁻¹) was evaluated with regard to physiological growth characteristics and yield performance. The experiment was designed as a randomised complete block design with a split-plot arrangement, which was replicated three times. Seeding rates were assigned to the main plots, whilst cultivars were allocated to the subplots. Results revealed significant differences amongst triticale cultivars for most of the studied traits. The Farah cultivar exhibited superior performance, with the highest plant height (126.25 cm), flag leaf area (51.69 cm²), leaf area index (4.01), leaf area duration (146.70 day⁻¹), crop growth rate (23.11 g m⁻² day⁻¹), chlorophyll content in the flag leaf (83.39 mg g⁻¹ fresh weight) and grain yield (5.53 t ha⁻¹). Increasing the seeding rate from 140 to 180 kg ha⁻¹ led to a higher tiller density, reaching 634.40 tillers m⁻². Furthermore, a seeding rate of 160 kg ha⁻¹ was found to optimise grain yield across all cultivars, achieving a maximum yield of 4.53 t ha⁻¹. Based on these findings, cultivating the Farah cultivar at a seeding rate of 160 kg ha⁻¹ can enhance yield performance.