The glutamic acid spraying exposes significant effect on yield and agronomic characteristics of sunflower (*Helianthus annuus* L.)

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Abstract: The present study was conducted to determine the effects of glutamic acid treatments at different doses on yield and growth parameters of some sunflower varieties under Anbar-Iraq conditions in 2021. Glutamic acid treatments were practiced as foliar sprays at four different concentrations (0, 100, 200 and 300 mg l^{-1}) to three different sunflower varieties (Sakha, Amar and Ishaqi-1). Field experiments were conducted in randomized blocks split-plots experimental design with three replications. The highest average stem height was measured as 194.25 cm, leaf area as 10188.70 cm^2, number of leaves per plant as 23.93 leaf $plant^{-1}$, plant dry weight as 181.22 g, seed weight as 49.17 g $plant^{-1}$, seed yield as 4.87 t ha^{-1} and biological yield as 17.98 t ha^{-1}. The 100 mg l^{-1} glutamic acid treatments of the variety Aqmar yielded the highest head diameter (17.525 cm). The 100 mg l^{-1} glutamic acid treatments of the variety Ishaqi-1 were superior in number of seeds per head (850 seed $plant^{-1}$). The 100 mg l^{-1} glutamic acid treatments of the variety Sakha were superior in 1000-seed weight (66.50 g) and harvest index (33.58 t ha^{-1}). As a result, the highest seed yield (5.49 t ha^{-1}) was obtained with 300 mg l^{-1} glutamic acid treatments in Ishaqi-1 sunflower variety.

Keywords: Sunflower, Glutamic Acid, Growth, Yield