



ORIGINAL ARTICLE

EFFECT OF USING TECHNOLOGY SPRAYING BY NANO-SEAWEED EXTRACT AND BIO-NANO FERTILIZER ON GROWTH OF BARLEY (*HORDEUM VULGARE L.*)

Mohammed H. Noor Aljana*, Ali H. Noaema, Ali R Alhasany, Haider Rezaq Leiby and Rawnak Mansour Jazea

Department of Field Crops, Faculty of Agriculture, Almutanna University, Iraq.

E-mail: mohammad.noor@mu.edu.iq

Abstract: During the 2018-2019 winter, researchers in Al-Khader, 30 km south of Almutanna province, conducted a field experiment to examine the effects of a Nano-seaweed extract at three different concentrations (0.0, 0.5, and 1.0 ml⁻¹) in a split-plot design (S1, S2, S3). The effects of three different concentrations of bio-Nano fertilizer on the development and yield of a barley crop were studied using three different subplots: (3, 2.5, 5) gm⁻¹ and (B1, B2, B3) in that order in a three-sample RCBD layout. When the concentration of Nano-seaweed extract in the spray solution was increased, the chlorophyll content of the leaves increased noticeably, as shown by the results. The highest concentrations were given, with a mean of 36.28 SPAD. With this Nano-seaweed extract dose, the average number of branches on the plant increased by 18.48%, to 495.40 m². The S2 length of the spike also increased positively at this higher concentration. The average height of a barley plant was 8.38 centimeters, and there was no discernible effect of the nanoparticles extract. The highest concentration of bio-Nano fertilizer used (5.0 g l⁻¹) resulted in 37.02 SPAD, indicating that spraying with this substance significantly increased the leaf content of chlorophyll. The tallest plant in the garden measured a whopping 79.33 centimeters, establishing its dominance. The maximum area covered by branches reached 520.20 m² at this concentration, and the spike length of 8.73 cm was greatest in plants given the maximum concentration of Nano fertilizer. The average area of the science paper that resulted from the interaction of the experimental factors (S2 B2) was 23.52 cm².

Key words: Barley, Seaweed extract, Bio-nano fertilizer, Growth of barley.

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