

THE EFFECT OF SPRAYING (MS) NUTRIENT SOLUTION AND BORON ON GROWTH, YIELD AND QUALITY OF (*Vicia faba* L.)

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ABSTRACT

A field experiment was conducted at farm of Field Crops Dept., College of Agric., Univ. of Baghdad- Iraq, during the seasons 2010/2011 and 2011/2012 to study the effect of spraying (MS) nutrition solution and boron only or together during the important stages of the plant faba beans the growth, yield and quality.

A split plot on in with R. C. B. D. distribution was three replicats. Levels of boron used 0,200, 400 mg.L⁻¹.they were assigned to the main plots. While the number of spraying in three intervals (spray the plants with water only) and the treatment of two spray times before flowering and at flowering 25% and the treatment three spray times before and at flowering 25% and flowering 50% were assigned as sub plots.

The results showed a significant effect of the number of times spraying (MS) nutrition solution on plant height, biological yield, chlorophyll content, fertility rate, number of pods per plant, number of seeds per pod, seed weight, seed yield, protein and carbohydrates content, except Width pod in both seasons. The treatment that was sprayed two time give the highest plant 52.82, 63.33cm, number of branches. plant⁻¹ 5.03, 9.00 branch plant, biological yield 10.77, 14.16 t.ha⁻¹, chlorophyll content of 53.23 and 56.26 (Mu.gm.cm²)⁻¹-number of pods per plant 6.06, 12.00 Pod, seed weight 1312, 1299mg, total seed yield 6.56 and 6.97t.ha⁻¹, ratio of protein 26.26, 25.84% and carbohydrate 24.25, 25.01% for two seasons respectively. While the treatment that was sprayed three times gave the longest pods 18.19, 16.22cm, fertility rate 8.12, 13.33%, number of seeds.Pod⁻¹, 4.57, 3.78 for two seasons respectively, harvest index 63.12% for the first season only. Significantly influenced levels of boron and interaction in most traits, except width Pod in both seasons.

The results showed that the highest seed yield 7.37, 8.80 t.ha⁻¹ of significant interaction between two sprays times of (MS) nutrition solution with concentration of 200 mg.L⁻¹ of the boron during two seasons respectively.

Key words: (MS) Nutrient solution, Boron, Faba bean, yield, quality.

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