

THE EFFECT OF SUPPLEMENTAL IRRIGATION AND FOLIAR APPLICATION OF POTASSIUM AND BORON ON GROWTH AND YIELD FOR FABA BEAN (*Vicia faba*, L.) .

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ABSTRACT

This study was carried out during fall season of (2012-2013) at experimental field , Horticulture Department , College of Agriculture – University of Diyala, to study the moisture depletion concentrations of Potassium and Boron applied on foliar on Plant height ,leaf area, grain yield, proline and protein content of faba bean (*Vicia faba*, L.) cultivar (Babylon). The layout of the experiments was Split- split plot design as RCBD with three replicates. Three concentration of Potassium 4500 ,5000 ,5500mgK.L⁻¹ added as K₂SO₄ (41%K) and three concentrations of Boron 0 , 300 , 350 mgB.L⁻¹ used Boric acid (17.4%B) and three periods of irrigation after 25,50,75% depletion of available water . Foliar application were applied at three times during of plant growth. Results drawn from this experiment are summarized as follows: The differ significantly in all of characters with increasing Potassium concentrations . Plant height ,leaf area and grain yield increased with the second level of Boron concentration (5000) mgB.L⁻¹. The differ were significantly between Potassium levels and water stress levels in most of characters. Plant height ,leaf area and grain yield increased with the interaction between water stress levels x the second Boron levels . Also the most of characters were significantly influenced by interaction between moisture levels x Potassium and boron concentrations . Boron did not effect the proline and protein content , proline and protein increase with water stress.

Key words : Boric acid, proline and water stress.