EFFECT OF ALGA EXTRACT "Spirulina platensis" ON TOMATO GROWN UNDER SALINITY STRESS CONDITIONS

By

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B.Sc. Agric. Sci. (Horticulture), Fac. Agric., Ain Shams Univ., 2003 M.Sc. Agric. Sci. (Vegetable Crops), Fac. Agric., Ain Shams Univ., 2011

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ABSTRACT

During two sequenced seasons (2015 and 2016); tomato plants were grown under different salinity margins to study whether the spirulina algal extract concentration overcoming the adverse effect of salinity on growth performance of tomato plants. Plants were grown in deep flow technique unit (DFT) and sandy culture. Salinity levels were 2000, 4000 and 6000 ppm of sea salt comparing with control grown cultures. The applied concentrations of algal extract were 0.0, 0.75, 1.5 and 3 ml. l⁻¹. The growth parameters (leaves number, plant height, leaf area and fresh and dry weight of leaves, stems and roots per plant); chemical composition and yield were assessed. Data showed that algal extract is markedly enhances morphological criteria of tomato plants to be able to overcome the extremely adverse effect of high salinity margin in concern leaves number and plant height, while a slight downing in leaf area was observed. Plant fresh and dry weight, total yield and chlorophyll content from the plants that treated with 3 ml 1⁻¹ alga extract surpassed on other treatments under the same salinity level. While, TSS was promoted with increasing both alga extract and saline levels. The highest algal extract 3 ml. 1⁻¹ was reducing the negative effect of Na accumulation of leaves resulted under hyper saline conditions (6000 ppm). Plants grown in DFT system surpassed sandy culture of vegetative growth characters (leaves number, plant height, leaf area, fresh and dry weight of leaves, stems and roots per plant); and most yield compounds, nutrient contents of leaves and fruit quality characters

Key words: *Spirulina platensis*, salinity, DFT, sandy culture, *Solanum lycopersicum*, growth parameters, yield, proline, nutrient contents, chlorophyll content, TSS.

DEDICATION

I dedicate this work to whom my heartfelt thanks; to my Lovely parents and my breathers and my friends and my husband and my dear lovely kids Jana and Youssef, Also I feel deeply grateful to Abd El wahab saad for their support and I can't find adequate words to express my feeling towards them.

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