

Mineral content response in onion to antioxidant application under salt stress conditions

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Abstract : Onion (*Allium cepa L*) considered one from the main vegetable crops and ranked third in Egypt for its important in diets and for exportation. In the greenhouse of National Research Centre a pot experiment was conducted to study the effect of nicotinic acid and tryptophan application under different salt stress. Plants subjected to two levels of salinity by irrigated plants with diluted seawater more than fresh water as a control. Under different salinity treatments plants divided to three groups which treated by nicotinic acid, tryptophan (in the rate of 200 ppm) and distilled water as a control. N and Ca concentration decreased parallel to the increased of salinity while K concentration decreased on by the high salinity level but P concentration increased with the subjection of onion plants to the first level of salinity and tended to decrease with the high level of salinity to be less than the control. A negative relationship was detected between salinity level and N, P, K and Ca concentration and the opposite was true for Na concentration. The concentration of Mg decreased by the first level of salts and tended to increase with the second level of salts but still less than that in control plants. The highest concentration of N and Mg was obtained by spraying nicotinic acid while P and Ca was by spraying tryptophan but for Na and K it was in control plants. The highest content of macronutrients was shown by application of nicotinic acid except for Ca it was by tryptophan application. The application of amino acids increased Ca concentration and decreased the Na concentration under different salt stress level used. Application of these two compounds improved the content of macronutrients under different salts concentration in water of irrigation. These data concluded that spraying plants with nicotinic acid improved mineral status under different salinity levels and improved the salt tolerant of treated plants.

Keywords: Onion (*Allium cepa L.*)-Salinity-Nicotinic acid-Tryptophan- Macronutrients status.