

EFFECT OF SALINITY AND CALCIUM FOLIAR APPLICATION ON GROWTH, YIELD AND FRUIT QUALITY OF TOMATO

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ABSTRACT: *Two pot experiments were carried out at the Experimental Farm of the Faculty of Agriculture in Damanhour, Alexandria University during early summer seasons of 2007 and 2008 in order to study the effect of different levels of NaCl (0, 50 and 100 mM) in nutrient solution and foliar application of Ca-protinate (1%), Ca-Nitro (1%) and Ca-Chelate (0.5%) on vegetative growth, dry matter accumulation, yield, fruit quality and mineral constituents of tomato plants (*Lycopersicon esculentum* Mill.) cv. Castle Rock.*

Increasing NaCl levels in the nutrient solution from 0 up to 100 Mill mol (mM) significantly decreased vegetative growth, dry weight/plant, fruit yield parameters and calcium content in fruit tissues as well as K, and Ca contents in leaves. On the other hand, treating tomato plants with 100 mM NaCl in the nutrient solution resulted in the highest values of number of fruits infested with blossom-end rot, TSS and titratable acidity, as well as Na and proline contents in the leaves.

Promotive influence in vegetative growth parameters, blossom-end rot (BER) calcium content in fruit tissues and N, and Ca contents in the leaves were due to foliar application of different sources of calcium. The combined interaction between NaCl at a rate of 0 mM in the nutrient solution and different sources of calcium foliar application caused a stimulatory effect on most of the studied characters of tomato plants, meanwhile the same treatments recorded the lowest values of TSS of fruits in the first season and Na and proline contents in leaves in both seasons.

Key Words: *Tomato, salinity, calcium, growth, yield.*