SOME PHYSIOLOGICAL STUDIES ON SALINITY TOLERANCE FOR SOME CITRUS ROOTSTOCKS

By

RASHA ARAFA ANWAR MOHAMED

B.Sc. Agric. Sci. (Cultural Project Management), Higher Institute for Agricultural cooperation, 2003

THESIS

Submitted in partial fulfillment of the Requirements for the Degree of

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APPROVAL SHEET

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Title of thesis: Some Physiological Studies on Salinity Tolerance for Some Citrus Rootstocks.
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ABSTRACT

The present study was conducted in the nursery of Horticulture Research Institute, Giza, Egypt under greenhouse conditions on Volkamer lemon (*Citrus volkameriana Ten. And pasq.*) "VOL" and Cleopatra mandarine (*C. reticulata* Blanco) "CM" rootstocks seedlings at transplanting stage during 2014 and 2015 seasons.

This study aimed to assess the response of seedlings to saline water under some bio-stimulants treatments and it's impact on the growth of the seedlings as well as physiological performance and leaves elements content.

The obtained results indicated: i) Both VOL and CM stocks seedlings vegetative growth , physiological performance as well as leaf N, P, K, Mg, Fe, Zn, and Mn concentrations were significantly improved, whereas Na and Cl contents were reduced, when treated with proline, salycilic acid, glycine betaine or humic acid, and irrigated with well water (cont. treat.) or saline water 1500 ppm. ii) Moreover, CM rootstock was more tolerant to high levels of saline water as compared to VOL stock.

iii) It can be used of CM stock in citrus seedlings production at low levels of saline water without bio-stimulants applications, and with it's at the high of salinity level up to 1500ppm. On the contrary, VOL can be used in this respect with bio-stimulants substances under saline water conc. 1500 or 2000ppm as well.

Keywords: *Citrus* rootstocks, Volkamer lemon, Cleopatra mandarine, proline, humic acid, Glycine Betaine and Salycilic acid.

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