RESPONSE OF ALMOND TRANSPLANTS TO SOME SALT STRESS TREATMENTS

By

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B.Sc. Agric., Horticulture, Ain Shams Univ., 1991

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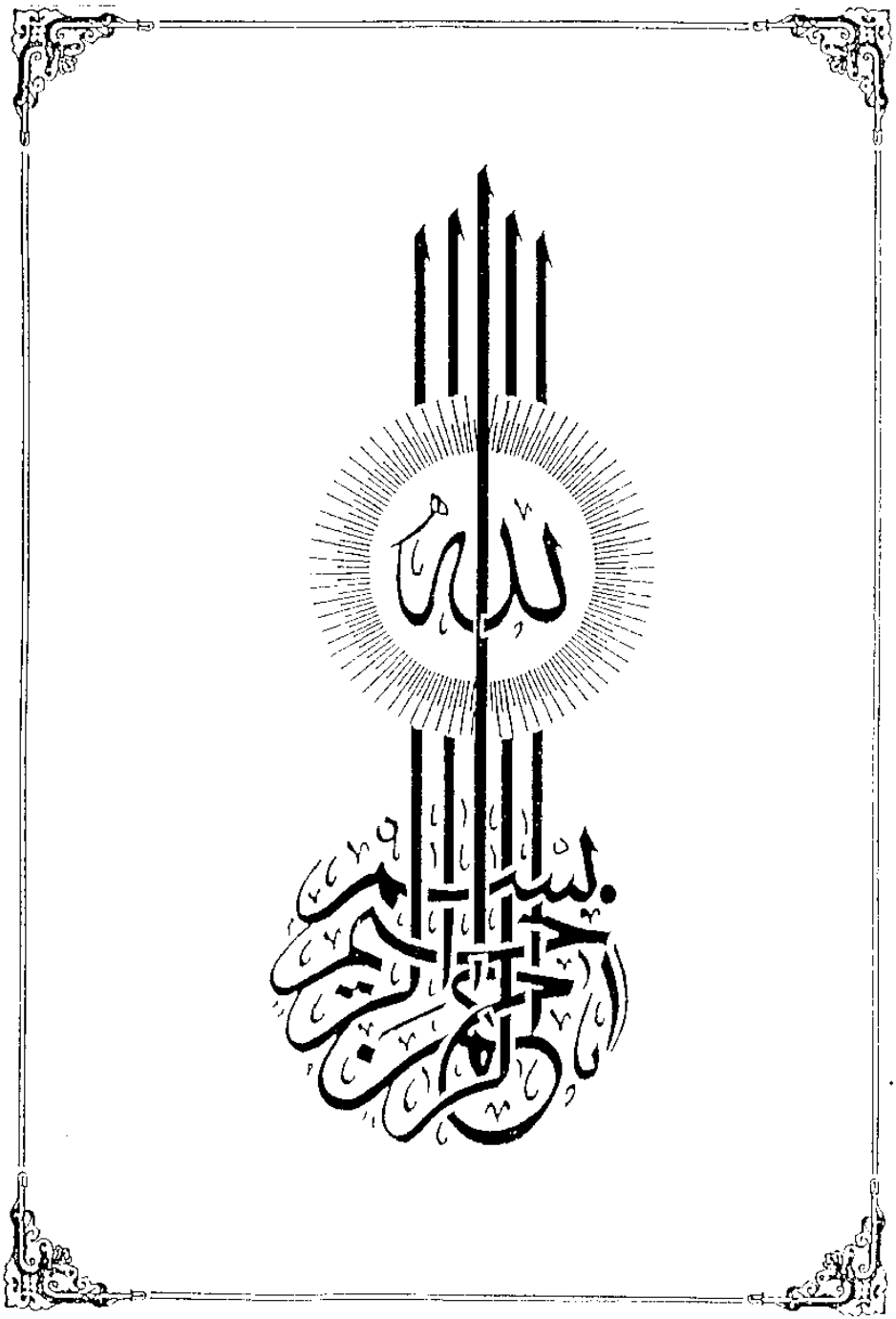

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ABSTRACT

Nahla El-Saeyd Abd El-Hamid Mohmad. Response of almond transplants to some salt stress treatments. Unpublished Master of Science, Ain Shams University Faculty of Agriculture, Horticulture Department 1997.

The effect of irrigation with salinized water at a level of 1000, 1500 or 2000 ppm on the growth and chemical composition of Neplus Ultra almond plants budded on either Bitter almond or Nemaguard peach rootstocks in 1995 and 1996 seasons was studied.

Results indicated that,, vegetative growth represented by plant height, stem diameter, leaves number / plant, leaf area, fresh and dry weights as well as leaf chlorophyll content, stem carbohydrates %, P, K, Mg, Zn, Fe and Mn content of different plant parts gradually decreased by increasing the salinity level in irrigation water. On the contrary, leaf proline content and plant content from Na, Cl and Ca were increased proportionally to the salinity level. Irrigation with 1500 or 1000 ppm salinized water increased the fresh and dry weights of the aerial portion and consequently increased the top/root ratio of the budded transplants. Plants budded on Bitter almond showed greater leaf K%, root Fe content, stem and root Zn content as well as Ca and Mn content in all plant organs than those budded on Nemaguard peach rootstock. Whereas, the latter plants exhibited higher root K, Leaf Cl and stem Mg content compared to their counterparts.

Leaves of the budded Neplus Ultra almond plants contained generally the highest amounts of N, Ca, Mg, Fe, Na and Cl, whereas stems exhibited the greatest content of K and Zn

whereas, roots showed the highest Mn and Cu content, regardless of salinity level of the irrigation water or rootstock kind.

Key words :
Neplus Ultra almond, Bitter almond rootstock, Nemaguard peach rootstock, Salinity, vegetative growth, Leaf proline content, Leaf chlorophyll content, stem carbohydrates, plant mineral content.

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CONTENTS

LIST OF TABLES