STUDIES ON THE EFFECT OF SALINITY ON MANGO SEEDLINGS

By

NEMAT YOUNIS ABD EL-KARIM

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By

NEMAT YOUNIS ABD EL-KARIM

B. Sc., Horticulture, Ain Shams Univ., 1971

M. Sc., Floriculture, Zagazig Univ. , 1984

This thesis for Ph. D. degree has been approved by:

Prof. Dr. Abd El Fattah Hamed Shaheen A. H. Shaheen

Prof of Pomology, Fac. of Agric., Alexandria Univ.

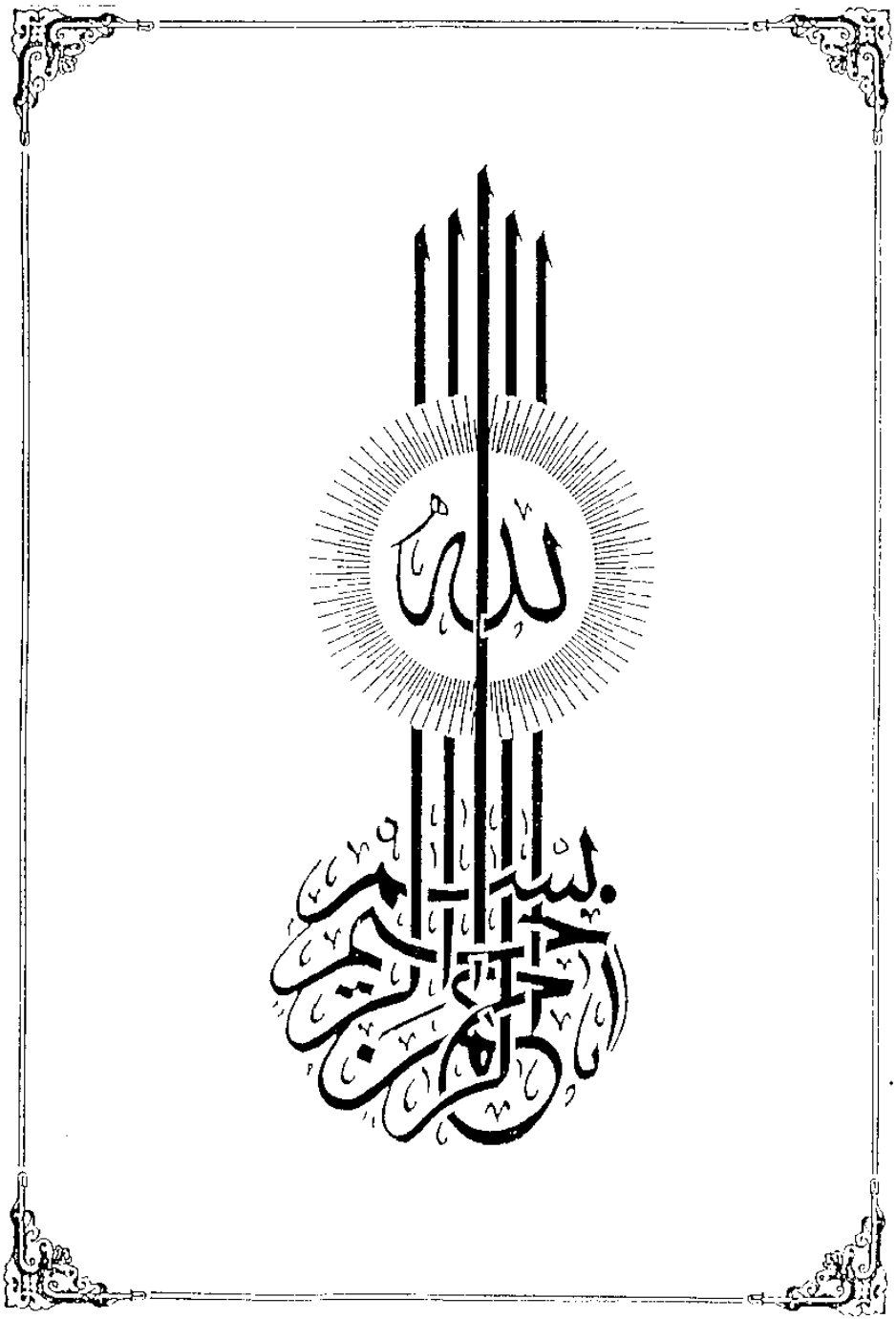
Prof. Dr. Abd El-Azeem Mohamed El Hammady .....

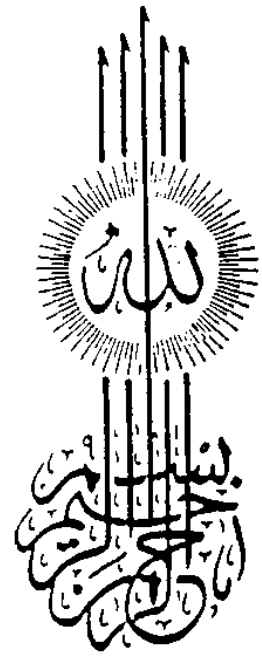
Prof. of Pomology, Fac. of Agric., Ain Shams Univ.

Prof. Dr. Ahmed Saeed Montasser .....

Prof. of Pomology, Fac. of Agric., Ain Shams Univ.

of examination: 6 / 11 1991





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NEMAT YOUNIS ABD EL-KARIM

B. Sc., Horticulture, Ain Shams Univ., 1971
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Under the supervision of:

Prof. Dr. A.S. Montasser
Prof of Pomology, Fac. of Agric., Ain Shams Univ.

ABSTRACT

Results of this investigation have revealed that irrigating seedlings of four mango cultivars namely: Hindy Besinara, Shamptan, Zebda and Taymour with tap water contained different concentrations of chloride salts of Na, Ca and Mg at the ratio of 3 NaCl : 1 (3 $CaCl_2$ + 1 $MgCl_2$) at 0, 1000, 2000, 3000 and 4000 ppm of such a mixture, decreased plant height, stem thickness, total number of leaves and average leaf area proportionally to the increase in salts concentration in irrigation water. On the other hand, the number of burned leaves increased with increasing salts concentration. Saline conditions decreased N, K and Mg contents and increased Ca, Na and Cl contents in the different parts of seedling,namely; leaves, stems and roots. Chlorophylls a, b and carotene contents in leaves decreased th increasing salts concentration in irrigation water.

whereas, proline content in mango leaves increased with increasing salts concentrations. Moreover, leaf content of sugars, either reducing or total sugars, decreased also with increasing salinity levels.

Results also revealed that seedlings of Zebda mango cultivar were less injured by salts concentration in irrigation water while those of Hindy cv. was more injured. Seedling of both Taymour and Shamptan were affected moderately.

Saline conditions appeared to decrease both auxin and GA_3 contents but increased ABA content in mango seedling. Such an increase or decrease depending upon cultivar.

Salinity conditions appeared to increase the area of cuticle and epidermal cells of leaves and decrease the xylem area in the vascular bundles as well as the number and size of xylem elements.

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