COMPARATIVE STUDIES ON GROWTH OF SOME GRAPEVINE CULTIVAR TRANSPLANTS UNDER DIFFERENT IRRIGATION LEVELS

By

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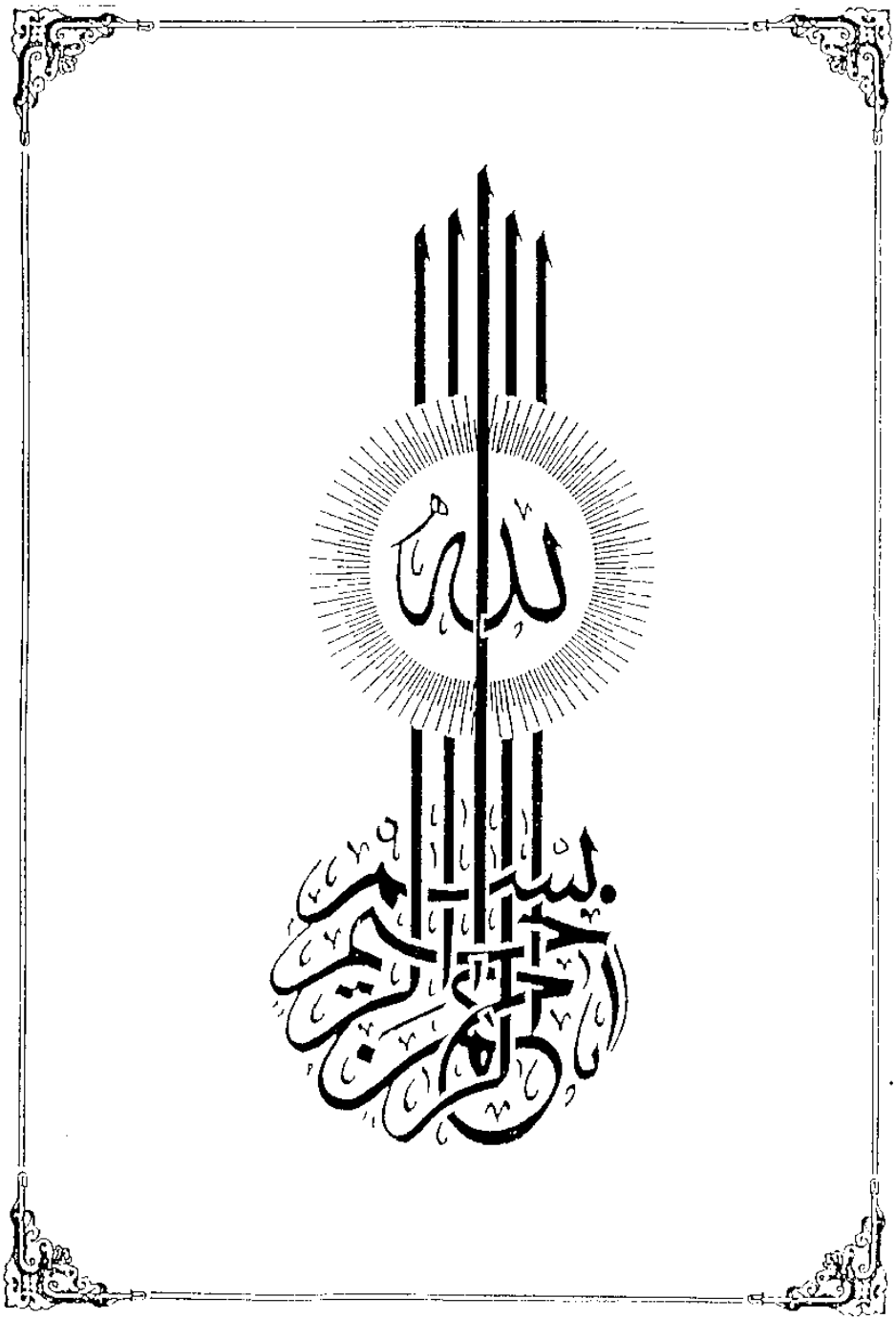
B.Sc. Agric. (Horticulture) Ain Shams Univ. 1983

A thesis submitted in partial fulfillment
of
the requirements for the degree of

Master of Science
in
Agriculture Science
(Pomology)

Department of Horticulture
Faculty of Agriculture
Ain Shams University

1996



APPROVAL SHEET

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Date of examination: 14/ 1 /1996

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ABSTRACT

Mohamed Sayed Mohamed, Compartive studies on growth of some grapevine cultivar transplants under different irrigation levels. Published for Master of Science-Ain Shams University, Faculty of Agriculture, Department of Horticulture, 1996.

Pot experiments were carried out during 1993 and 1994 seasons to study the effect of different depletions from available water from 20 to 80 % with 3000 ppm of saline water from salt mixture NaCl, $CaCl_2$ and $MgCl_2$ on Flame seedless, Thompson seedless, Early Superior and King's Ruby grapevine transplants. Proline amino acid was sprayed on tested transplants at concentration of 100 or 200 ppm as external application. Vegetative growth parameters namely plant height, shoot number, leaves number, leaf area, stem diameter and shoot & root dry weight were recorded. Also, total carbohydrates, internal proline content, chlorophyll content and minerals content were determined. Data indicated that each of 100 and 200 ppm of external proline caused increase in leaves number, shoot number, leaf area, stem diameter, shoot & root dry weight, chlorophyll and carbohydrates contents. N, P, K, Ca, Mg, Mn and Zn elements were increased, however, Na, Cl and Fe were decreased with spraying proline. Also, all used vegetative parameters and nutrients (N, P, K, Ca, Mg, Mn and Zn) were decreased with increasing depletion of available water from 20 to 80%, whereas, Na, Cl and Fe were increased. Flame seedless transplants recorded the highest values in plant height, stem diameter, shoot & root dry weight and carbohydrates in shoots, whereas, King's Ruby transplants ibited the higher value in shoot number, chlorophyll, shoot dry t and total carbohydrates in roots. Early Superior transplant : highest in root dry weight.

Key words: Grape, Salinity stress, Water regime, Water stress, sandy culture, Flame seedless, Thompson seedless, Early Superior, King's Ruby grapevine transplants, Vegetative growth parameters, Minerals content, Chlorophyll, Total carbohydrates, Amino acid proline.

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