EFFECT OF ASCORBIC ACID AND RIBOFLAVIN ON GROWTH OF TECOMA AND DURANTA PLANTS UNDER STRESS CONDITIONS

By

AHMED SHAFIK IBRAHIM ABDEL-AAL

B.Sc. Agric. Sci. (Ornamental Horticulture), Fac. Agric., Cairo Univ., 2005
M.Sc. Agric. Sci. (Ornamental Horticulture), Fac. Agric., Cairo Univ., 2011

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SUPERVISION SHEET

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Title of Thesis: Effect of Ascorbic Acid and Riboflavin on Growth of Tecoma and Duranta Plants under Stress Conditions
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ABSTRACT

Duranta erecta: (1st) :The results showed that the non saline water gave the highest values of all growth parameters except number of leaves, root length which increased when plants were treated with 2000 ppm. The same treatment increased the chemical constituents except N% in leaves and roots, P% in leaves and K% in leaves and roots, carbohydrates in branches. Application of ascorbic acid at 400 ppm gave the highest values of the most case of growth parameters and chemical constituents. The interaction between salinity and ascorbic acid, showed that, application of ascorbic acid at 400 ppm under non-saline water followed by 400 ppm ascorbic acid combined with 2000 ppm salinity gave the highest values of growth parameters and chemical constituents in both seasons. The concentration of 8000 ppm salinity produced thinner leaves. Application of ascorbic acid at 400 ppm; on plants grown under salinity stress of 8000 ppm increased midvein length, midvein width, number of xylem rows, midvein bundle and vessel diameter.(2nd) :The results showed that irrigation intervals at 3 days gave the highest values of all growth parameters except root length, fresh and dry weight of roots which increased when plants were treated with irrigation intervals at 7 days. The same treatment increased the chemical constituents except P% in leaves which incresed when plants treated every 5 days. Application of riboflavin at 2000 ppm gave the highest values of the most growth parameters and chemical constituents. The application of riboflavin at 2000 ppm under irrigation intervals at 3 days gave the highest values of growth parameters and chemical constituents in both seasons .*Tecoma capensis* :(3rd): The results showed that the non saline water gave the highest values of all growth parameters and chemical constituents. Application of riboflavin at 2000 ppm gave the highest values of the most growth parameters and chemical constituents. Followed by application of riboflavin at 1000 ppm. The interaction between salinity and riboflavin showed that, application of riboflavin at 2000 ppm under non-saline water followed by 1000 ppm riboflavin combined with non-saline water gave the highest values of growth parameters and chemical constituents in both seasons. The concentration of 8000 ppm salinity decrease thickness of both palisade and spongy tissues of the mesophyll. Application of 2000 ppm riboflavin on tecoma plants grown under salinity stress of 8000 ppm showed favourable changes in anatomical structure of tecoma leaves.(4th) :The results showed that irrigation intervals at 3 days gave the highest values of all growth parameters except root length, fresh and dry weight of roots which increased when plants were treated with irrigation intervals at 7 days. The same treatment increased the chemical constituents except N% in roots, P% in branches and roots, K% in branches and roots, carbohydrates % in roots. Application of ascorbic acid at 400 ppm gave the highest values of the most growth parameters and chemical constituents, followed by ascorbic acid at 200 ppm. The application of ascorbic acid at 400 ppm under irrigation intervals at 3 days gave the highest values of growth parameters and chemical constituents in both seasons .

Key words:*Duranta erecta, Tecoma capensis* seedlings, salinity, irrigation intervals, ascorbic acid, riboflavin, vegetative growth, chemical constituents, anatomy

DEDICATION

I would like to dedicate this work to a person has in my heart a special place my father ***Prof.Dr.Shafik Abdel-Aal*** *, my mother, my sister and brother for their encouragement and support through out this work. As well as to my wife* ***Marwa*** *and my son* ***Shafik*** *for missing me some times during the course of my study.*

WITH MY GRATITUDE AND LOVE

AHMED

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