

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

By

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**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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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 increased 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

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CONTENTS

	Page
INTRODUCTION	1
REVIEW OF LITERATURE.....	10
MATERIALS AND METHODS.....	33
RESULTS AND DISCUSSION.....	43
1- First experiment	
1. Effect of ascorbic acid on growth and chemical constituents of <i>Duranata erecta</i> plants under salinity stress	
a. Vegetative growth	
1.Plant height(cm).....	43
2.Number of leaves/plant.....	45
3.Numberofbranches/plant.....	47
4.Rootlength(cm).....	48
5.Fresh weight of leaves(g)/plant	49
6.Fresh weight of branches(g)/plant.....	52
7.Fresh weight of roots(g)/plant	52
8.Dry weight of leaves(g)/plant	54
9.Dry weight of branches(g)/plant	56
10.Dry weight of roots(g)/plant	56
b. Chemical constituents	
1.Photosynthetic pigments	
1.Chlorophyll a.....	58
2.Chlorophyll b.....	60
3.Carotenoids.....	60
2.Total carbohydrates	
1.Totalcarbohydrates(%) in leaves.....	62
2.Totalcarbohydrates(%)in branches.....	64
3.Total carbohydrates (%) in roots.....	65
3.Mineral contents	
1.Nitrogen(%) in leaves.....	66
2.Nitrogen(%) in branches.....	68
3.Nitrogen(%) in roots.....	69
4.Phosphorus(%) in leaves.....	70

5. Phosphorus(%) in branches	72
6. Phosphorus(%) in roots	73
7. Potassium(%) in leaves	75
8. Potassium(%) in branches	76
9. Potassium(%) in roots	76
c. Anatomical studies : -	
1. Stem anatomy	77
2. Leaf anatomy	80
2- Second experiment	
2. Effect of riboflavin on growth and chemical constituents of <i>Duranta erecta</i> plants under irrigation intervals stress	
a. Vegetative growth	
1. Plant height(cm)	84
2. Number of leaves/plant	87
3. Number of branches/plant	89
4. Root length(cm)	90
5. Fresh weight of leaves(g)/plant	91
6. Fresh weight of branches(g)/plant	92
7. Fresh weight of roots(g)/plant	94
8. Dry weight of leaves(g)/plant	95
9. Dry weight of branches(g)/plant	96
10. Dry weight of roots(g)/plant	97
b. Chemical constituents	
1. Photosynthetic pigments	
1. Chlorophyll a	99
2. Chlorophyll b	100
3. Carotenoids	101
2. Total carbohydrates	
1. Total carbohydrates(%) in leaves	102
2. Total carbohydrates(%) in branches	102
3. Total carbohydrates(%) in roots	104
3. Mineral contents	
1. Nitrogen(%) in leaves	105
2. Nitrogen(%) in branches	107
3. Nitrogen(%) in roots	108
4. Phosphorus(%) in leaves	109

5. Phosphorus(%) in branches	111
6. Phosphorus(%) in roots	111
7. Potassium(%) in leaves	112
8. Potassium(%) in branches	114
9. Potassium(%) in roots	115
3- Third experiment	
3. Effect of riboflavin on growth and chemical constituents of <i>Tecoma capensis</i> plants under salinity stress	
a. Vegetative growth	
1. Plant height	116
2. Number of leaves/plant	118
3. Number of branches/plant	120
4. Root length (cm)	122
5. Fresh weight of leaves (g)/plant	124
6. Fresh weight of branches (g)/plant	125
7. Fresh weight of roots (g)/plant	127
8. Dry weight of leaves (g)/plant	128
9. Dry weight of branches (g)/plant	130
10. Dry weight of roots (g)/plant	131
b. Chemical constituents	
1. Photosynthetic pigments	
1. Chlorophyll a	133
2. Chlorophyll b	134
3. Carotenoids	135
2. Total carbohydrates	
1. Total carbohydrates(%) in leaves	136
2. Total carbohydrates(%) in branches	137
3. Total carbohydrates (%) in roots	139
3. Mineral contents	
1. Nitrogen(%) in leaves	140
2. Nitrogen(%) in branches	142
3. Nitrogen(%) in roots	143
4. Phosphorus(%) in leaves	144
5. Phosphorus(%) in branches	146
6. Phosphorus(%) in roots	147
7. Potassium(%) in leaves	147
8. Potassium(%) in branches	148