



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



شبكة المعلومات الجامعية
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شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكرو فيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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15-25- c and relative humidity 20-40%

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بالرسالة صفحات لم ترد بالاصل

THE EFFECT OF NITROGEN CONCENTRATIONS AND
SOURCES ON GROWTH AND PHYSIOLOGICAL
PERFORMANCE OF CLOVER AND SOYBEAN

Thesis

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR
MASTER DEGREE OF SCIENCE
IN
BOTANY (ECOLOGY)

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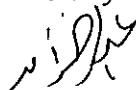
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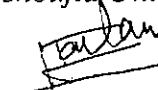
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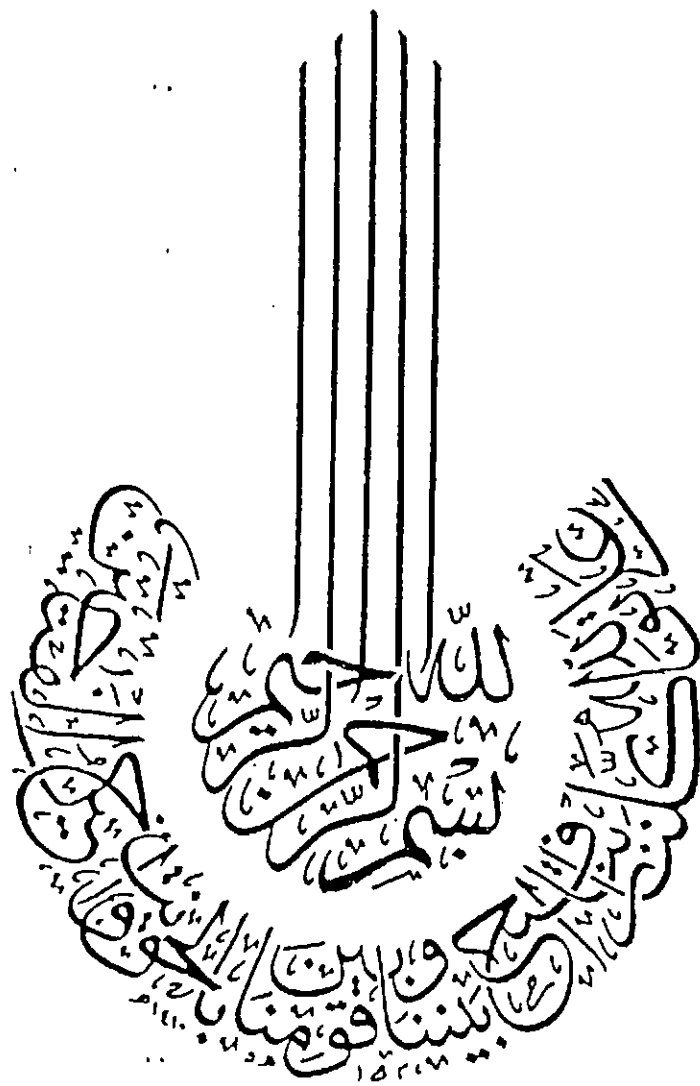


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1994



صدق الله العظيم



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

TO :

**MY MOTHER
AND
MY BROTHERS**

Soad Mohamed Ahmed Emara




TABLE OF CONTENTS

	PAGE
ACKNOWLEDGEMENTS	
TABLE OF CONTENTS	1
LIST OF TABLES	3
INTRODUCTION	6
MATERIAL AND METHODS	11
EXPT.I. The effect of nitrogen concentrations on nutrient concentrations, nitrate reductase activity, dry matter production, and carbohydrates allocation in clover and soybean .	
1 - Growth conditions	11
2 - Quantitative determination of carbohydrates	12
3 - Nitrate reductase extraction and assay	13
EXPT. II. The effect of different nitrate sources and levels on the nutrient uptake , dry matter production, protein and carbohydrates in soybean and clover .	
1 - Growth condtions	14
2 - Quantitative determination of carbohydrates	16
3 - Determination of total proteins	16
EXPT.III. The effect of nitrogen concentrations on mineral uptake and plant performance treated with different levels of osmotic water potential .	
1 - Growth conditions	17
2 - Quantitative determination of carbohydrates	19
3 - Determination of total proteins	19
RESULTS AND DISCUSSION	20
PART.I. GROWTH AND PHYSIOLOGY OF SOYBEAN AND CLOVER AT DIFFERENT LEVELS OF NITROGEN SUPPLY.	

I Growth	
1 - Relative fresh weight, Relative dry weight and R/S values.	20
2 - Allocation of Carbohydrates .	24
II Physiological Performance	
1 - Uptake rate of microelements .	27
2 - Nitrate allocation and NRA .	42
PART.II. GROWTH AND PHYSIOLOGY OF SOYBEAN AND CLOVER AT DIFFERENT NITRATE SOURCES.	
I Growth	
1 - Relative fresh weight and Relative dry weight .	47
2 - R/S Values	53
3 - Total Proteins	56
4 - Allocation of Carbohydrates	60
II Physiological Performance .	
1 - Uptake rate of micro nutrients	66
EXPT.III. GROWTH AND PHYSIOLOGY OF SOYBEAN AT DIFFERENT LEVELS OF OSMOTIC WATER POTENTIAL.	
I Growth	
1 - Relative fresh weight, Relative dry weight and R/S values .	82
2 - Total carbohydrates .	85
3 - Total Proteins .	86
II Physiological Performance	
1 - Uptake rate of micro nutrient .	90
GENERAL DISCUSSION	97
SUMMARY	111
REFERENCE	113
ARABIC SUMMARY	

LIST OF TABLES

TABLE	PAGE
1 - Changes in the elemental concentrations per time indicating the elemental influx - efflux in clover plants treated with 3 N levels (DN - deficient nitrogen, NN - normal nitrogen, EN - excess nitrogen) of NH_4NO_3 based on dry weight basis .	67
2 - Changes in the elemental concentrations per time indicating the elemental influx - efflux in clover plants treated with 3 N levels (DN - deficient nitrogen, NN - normal nitrogen, EN - excess nitrogen) of NaNO_3 based on dry weight basis .	68
3 - Changes in the elemental concentrations per time indicating the elemental influx - efflux in clover plants treated with 3 N levels (DN - deficient nitrogen, NN - normal nitrogen, EN - excess nitrogen) of KNO_3 based on dry weight basis.	69
4 - Changes in the elemental concentrations per time indicating the elemental influx - efflux in clover plants treated with 3 N levels (DN - deficient nitrogen, NN - normal nitrogen, EN - excess nitrogen) of $\text{Ca}(\text{NO}_3)_2$ based on dry weight basis .	70
5 - Changes in the elemental concentrations per time indicating the elemental influx - efflux in clover plants treated with 3 N levels (DN-deficient nitrogen, NN-normal nitrogen, EN- excess nitrogen) of Mixture of nitrates based on dry weight basis .	71

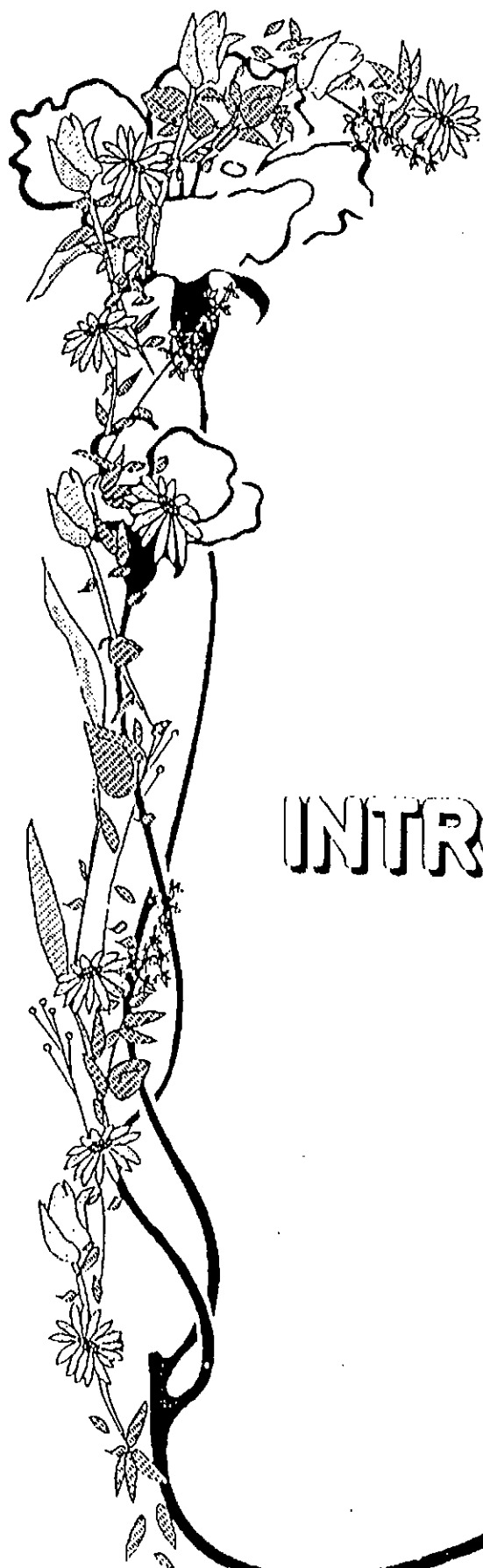
- 6 - Changes in the elemental concentrations per time indicating the elemental influx - efflux in soybean plants treated with 3 N levels (DN - deficient nitrogen, NN - normal nitrogen, EN - excess nitrogen) of NH_4NO_3 based on dry weight basis . 73
- 7 - Changes in the elemental concentrations per time indicating the elemental influx - efflux in soybean plants treated with 3 N levels (DN - deficient nitrogen, NN - normal nitrogen, EN - excess nitrogen) of NaNO_3 based on dry weight basis . 74
- 8 - Changes in the elemental concentrations per time indicating the elemental influx - efflux in soybean plants treated with 3 N levels (DN - deficient nitrogen, NN - normal nitrogen, EN - excess nitrogen) of KNO_3 based on dry weight basis . 75
- 9 - Changes in the elemental concentrations per time indicating the elemental influx - efflux in soybean plants treated with 3 N levels (DN - deficient nitrogen, NN - normal nitrogen, EN - excess nitrogen) of $\text{Ca}(\text{NO}_3)_2$ based on dry weight basis . 76
- 10 - The changes in elemental concentrations as a function of time indicative of influx - efflux of these elements under deficient nitrogen (DN), normal nitrogen (NN), and excess nitrogen (EN), and -0.175 bars. Osmotic water potential (O.W.P) of the media around the roots. 92
- 11 - The changes in elemental concentrations as a function of time indicative of influx - efflux of these elements under

deficient nitrogen (DN), normal nitrogen (NN), and excess nitrogen (EN), and -2.000 bars. Osmotic water potential (O.W.P) of the media around the roots.

93

12 - The changes in elemental concentrations as a function of time indicative of influx - efflux of these elements under deficient nitrogen (DN), normal nitrogen (NN), and excess nitrogen (EN), and -4.000 bars. Osmotic water potential (O.W.P) of the media around the roots.

94



INTRODUCTION



Introduction

Nitrogen nutrition usually exert influential limits on growth and physiological performance of almost all plant species. Misuse of nitrogen fertilizers addresses a general problem in Egypt, where some, farmers avoid any nitrogen supply while others use excess nitrogen to a toxic level. Limited and excess nitrogen supply affect the rate of cell division, cell expansion, photosynthesis (Clarkson & Hanson 1980; Chapin *et al.* 1988), leaf production and elongation (Radin & Boyer 1982), nitrate and nitrite reductase activity, assimilation of nitrogen (Reddy & Menary 1990), and nitrogen fixation (Serraj *et al.* 1992). Limited and excess supply of nitrogen results in an overall decrease in crop yield but mechanisms of crop declination are not completely understood. Study of growth and physiological performance could help for better understanding of the nitrogen role .

The present study includes : 1) **Growth**, including relative fresh weights (RFW), dry matter accumulation (RDW) in different plant parts, root to shoot ratio (R/S), and allocation of carbohydrates. The increase in R/S that observed response to nitrogen stress occurs in most plants (Brouwer 1966; Chapin 1980; Chapin *et al.* 1988) and reflects a declined shoot growth. The increase in nitrogen levels showed slight increase in RFW of leaves which is enough to avoid production of low nitrogen tissues pronounced in stressed nitrogen plants such as no nitrogen and excess nitrogen (Watts *et al.* 1981) . The overall low weight in stressed plants reflected the loss of organic