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شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم



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شبكة المعلومات الجامعية



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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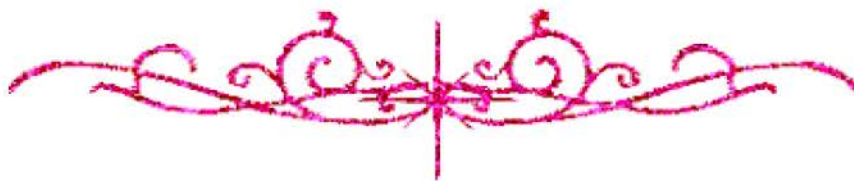
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**THE EFFECT OF DIFFERENT WATER REGIMES
ON MORPHOLOGICAL, PHYSIOLOGICAL AND
ANATOMICAL CHARACTERISTICS OF SOME
CITRUS ROOTSTOCKS**

**BY
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B.Sc. Agric., Cairo University, 1981

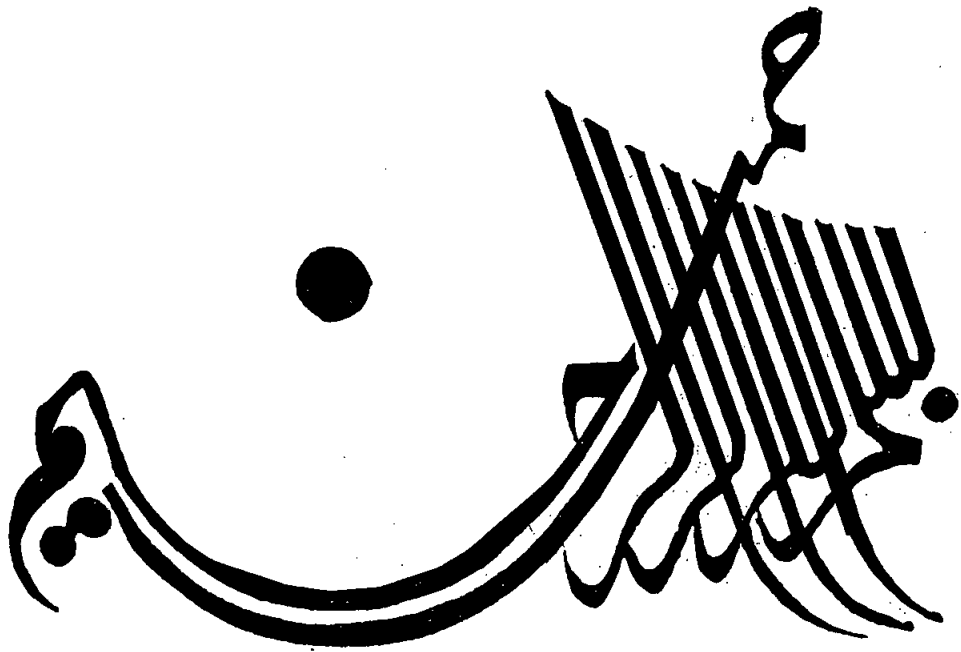
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Thesis

**Submitted in Partial Fulfillment of the
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قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا
إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ

صدق الله العظيم

(٢٢/البقرة)

لَعَنَ اللَّهُ أَهْلَهُ رَفَعُوا عَلَيْهِ

إِلَى

وَالْمَلِكِ

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morphological, physiological and anatomical
characteristics of some citrus rootstocks.**

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ABSTRACT

This experiment conducted during two successive seasons 1999 and 2000 to study the effect of four irrigation levels on four citrus rootstock seedlings namely sour orange *Citrus aurantium*, Cleopatra mandarin *Citrus reshni Hort. ex Tan.*, Volkamer lemon *Citrus Volkameriana Ten.* and pasq and Troyer citrange [(*C. sinensis* (L)osb.)x(*Poncirus trifoliata* (L)Raf')] at the Horticultural Research institute, Giza Governorate, Egypt. One-year-old seedlings were planted individually in black polyethylene bags filled with nonsaline sandy soil under 53% shaded greenhouse equipped with a drip irrigation system. The levels of water regime were as follows:

- 1-**Control treatment** (field capacity): plants were maintained at field capacity.
- 2-**Waterlogging treatment**: plants were kept flooded under tap water.
- 3-**Water stress treatment**: plants were rewatered at 75% of field capacity.
- 4-**Drout treatment**: plants were rewatered at 50% of field capacity.

The measurements included the following points: growth parameters, physiological aspects, chemical analysis of leaves and anatomical studies.

The obtained results could be summarized as follows:

- Volkamer lemon was the superior for its vigorous growth,, physiological potential to adapt itself against the different levels of water, its capacity to absorb minerals more than other rootstocks under shortage of water or waterlogging and finally the anatomical structure of leaves and roots which cleared that it had the most surviving tissues under the different water regimes.
- **Troyer citrange** came in the second rank and characterized by vigor growth and good performance especially under the water defect.
- **Cleopatra mandarin** exhibited the least values of most vegetative, physiological and chemical parameters which shown clearly in its anatomical structure.
- The traditional rootstock **sour orange** had intermediate values in concerning the waterlogging conditions while it obtained less value under the water deficiency.

Therefore, it could be recommended Volkamer lemon as a promising rootstock for waterlogged, high water-table soils or arid lands under the conditions of the present study and resembling environmental conditions.

A. El Obeidy

A. E. Kilgus

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CONTENTS

INTODUCTION.....	1
REVIEW OF LITERATURE.....	3
MATERIALS AND METHODS.....	28
RESULTES AND DISCUSSION.....	37
Effect of different water regimes on some citrus rootstock seedlings characters	
I- Growth parameters.....	37
I.1-Total shoots length	37
I.2- Net increase in shoots length.....	40
I.3- Root distributions(length & width).....	43
I.4- Net increase in root distributions(length & width).....	49
I.5- Average total and leaf area in cm ²	52
I.6- Plant fresh weight	57
I.7- Plant dry weight	60
I.8- Growth Analysis	63
II- Physiological aspects	77
II.1- Leaf hardness.....	77
II.2- Leaf osmotic potential.....	79
II.3- Electrolyte leakage.....	82
III- Chemical analysis of leaves.....	87
III.1- Proline content.....	87
III.2- Leaf mineral content.....	91
III.2.1-Total nitrogen content.....	91
III.2.2-Phosphorus content.....	94
III.2.3- Potassium content.....	94
IV- Leaf anatomical structure	101
SUMMARY AND CONCLUSION.....	116
LITRATURE CITED.....	126
ARABIC SUMMARY.....	

INTRODUCTION