شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

HOSSAM MAGHRABY

شبكة المعلومات الجامعية

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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شبكة المعلومات الجامعية

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قسم

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علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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شبكة المعلومات الجامعية

بالرسالة صفحات

لم ترد بالأصل

HOSSAM MAGHRABY

RESPONSE OF MANZANILLO OLIVE TREES TO NITROGEN AND BIOFERTILIZER UNDER NORTHERN WESTERN COAST CONDITION

By:

Abdel-Hameed Abdel-Hady Abdel-Hameed

B.Sc. Agric. (Pomology)

Alexandria University, 1993

Thesis

Submitted in Partial Fulfillment of

The Requirement for the Master Degree

in Agriculture Science (Pomology)

Pomology of

Horticulture Department

Faculty of Agriculture

Cairo University

2002

Approval Sheet

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Date: 2/10/2002

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Title of Thesis: Response Of Manzanillo Olive Trees to Nitrogen and Biofertilizer Under Northern Western Coast Condition.
Supervisors: Prof. Dr. Mohamed Abdel-Gawad Shahin,
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Dr. Saad Abdel-Wahab Youns.
Department: Pomology of Horticulture Department.
Pranch: Pomology. Approval: 2/10/2002

This study was conducted during two successive seasons, (1998/1999 and 1999/2000) in Bagoush region at Marssa Matrouh governorate. Eight years old of Manzanillo olive trees were used in this trail. This work was aimed to study the response of olive trees to nitrogen fertilizer and biofertilizer. Three doses of nitrogen (100%, 75% and 50% of the recommended rate) with or without biofertilizer (BF) with or without biostimulant (BS) were used for this study. The biofertilizer which used in this experiment produced by soil microbiology unit, Desert Research Center, it contains a multi strains of *Azotobacter* spp., *Azospirillum* spp. and *Bacillus* spp. The biostimulant produced by soil microbiology unit, Desert Research Center, it called Biomagic and contains amino acids, Vitamins, macroelements and microelements.

Using 100% N significantly increased fruit set percentage, fruit retained, fruit yield, fruit physical characters, oil percentage and vegetative growth characters. In addition, the highest significant fruit and leaf content of N, P, K, Mn, Zn, Cu, and Fe was obtained with 100% N.

Fruit set percentage, retained fruit percentage and yield were increased by BF, while, BF+BS increased fruit physical characters, oil percentage and vegetative growth characters. In addition, BF+BS, increased fruit and leaf content of N, P, K, Mn, Zn, Cu, and Fe.

The interaction between 100% N and BF+BS gave the highest significant fruit physical characters, oil percentage and average number of shoots/twig, while, 100% N with BF gave the highest fruit set percentage, fruit retained, fruit yield and most vegetative growth characters. In addition, the interaction between 100% N and BF+BS gave the highest significant fruit and leaf content of N, P, K, Mn, Zn, Cu, and Fe.

It can be recommend that, using 100% N with BF+BS may be recommended to improve growth of olive trees under this study conditions and produce the best quality of fruit with highest oil percentage.

M. A. Shaheen

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I would like to express my deepest thanks for Allah who gave me power to complete this work. Also, I wish to express my sincere apprecition and gratitude to **Prof. Dr. Mohamed Abd El-Gawad Shahin,** professor of Pomology, faculty of agriculture, Cairo university, for his effective supervision, guidance and interest promotion this work. Deep thanks and gratitude are also extended to **Dr. Samy El-Kossary Melegy,** lecturer of Pomology, Faculty of Agriculture, Cairo University, for his patience, encouragement, guidance are highly appreciated, without his sincerity this work would not to be possible.

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CONTENTS

INTRODUCTION

I - INTRODUCTION:

Olive is one of the oldest cultivated tree crops in the history of the world about 8000 years ago. It was originated in the ancient times in the eastern side of the Mediterranean Sea. Olive has spread to all the countries around the Mediterranean basin, which is still the major region of olive production until today.

The world area cultivated with olive trees in 2001 as shown in Table (1) is about 8072797 hectares and world production of olives is 14352840 tons, most of which is extracted to olive oil and the rest processed mainly to table olives.

The area grown with olive trees in Egypt (Tables 2 and 3) was 25467 feddan in 1991 and reached 113080 feddan in 2001, of which 77342 feddan are under production and its total production is 293903 tons. It is worth to note here that most of olive orchards are established in the new reclaimed areas in the desert where soil and water are poor.

Although olive trees can survive and grow under low soil fertility and water availability conditions, many research studies have been indicating that improving soil fertility and satisfying water requirement are essential factors to obtain a high production. However, increasing olive tree productivity under desert conditions must be based on appropriate technical and economic management due to the natural resources scarcity.

Therefore, the present study was conducted to examine the most efficient fertilization regime in combination with biofertilizer and biostimulants to improve the productive efficiency of olive by an appropriate regime that influences the physiological processes that are