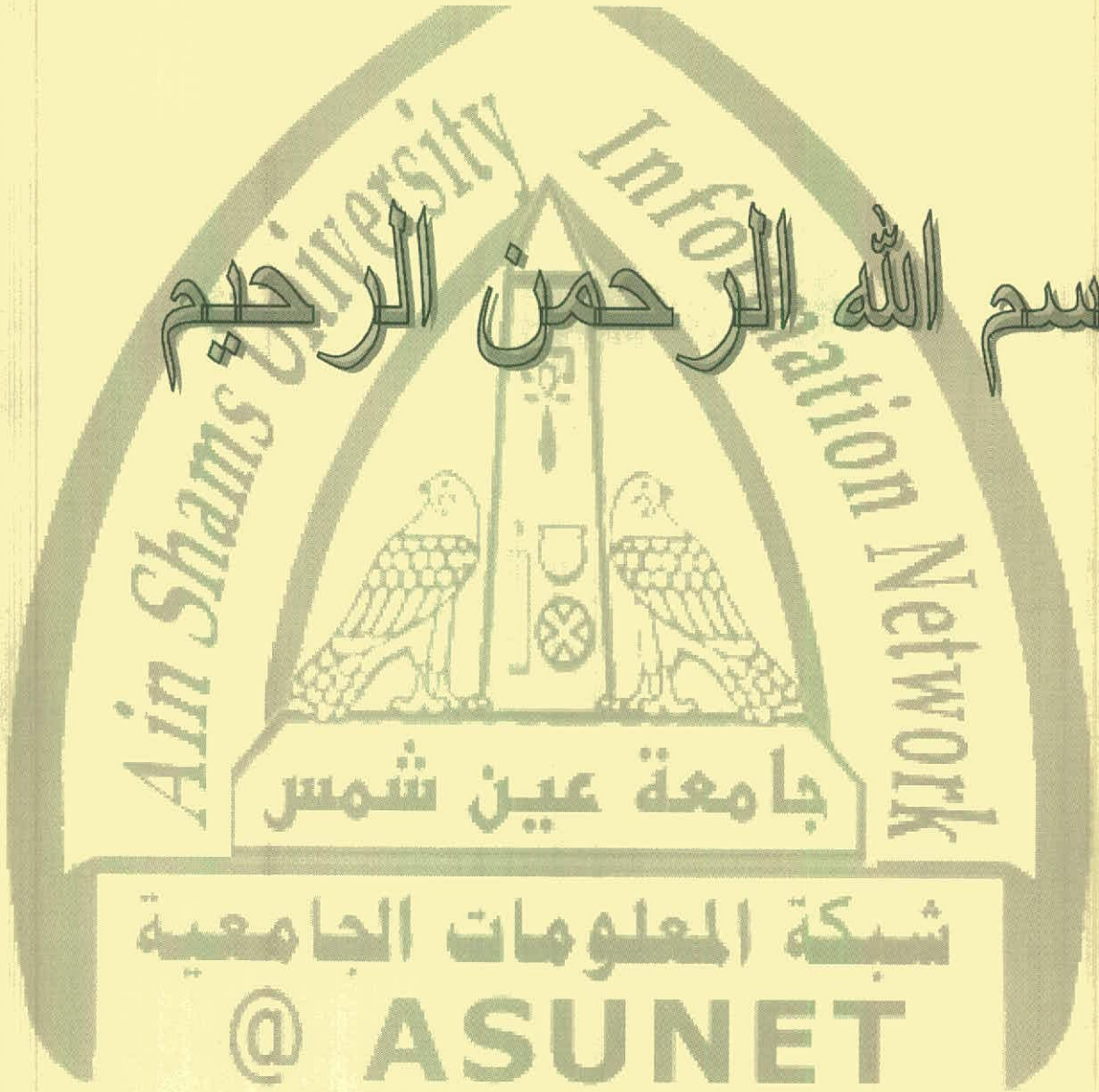
شبكة المعلومات الجامعية



بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%

بعض الوثائـــــــق الاصليـــــة تالفـــة

بالرسالة صفحات لم ترد بالاصل

٤٥٢٥

NEWLY PLANTED CITRUS NURSLINGS AS AFFECTED BY SOME WINTER COVER CROPS

BY

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Faculty of Agriculture
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Presented By
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FOR THE DEGREE OF
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Date / /199 Committee in Charge

To

My Father's Soul

My Mother

My Brothers

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Contents

I- INTRODUCTION 1

II- REVIEW OF LITERATURE 3

1- Effects on some vegetative growth parameters 4
2- Effects on roots growth 7
3- Effect on leaf nutrients content 8
4- Effect on some physical and chemical soil properties 10
5- Allelopathy effect 14

III- MATERIALS AND METHODS 16

IV- RESULTS 24

1- Effect of cover crops on some vegetative growth characters 24
1-1- Shoot length of the spring growth cycle 24
1-2- Trunk diameter 25
1-3- Total length of shoots per nursling 42
1-4- Leaf area 43
1-5- Leaves dry weight percentage 46
1-6- Top/root ratio 49
2- Effect on some root parameters 49
2-1- Root volume 49
2-2- The total capacity of root surface 50
2-3- Total root length 50
2-4- Root dry weight percentage 51
3- Leaf mineral contents 56
4- Allelopathic potential of the leachate water of used cover crops 57

V- GENERAL DISCUSION 63

VI- SUMMARY 67

VII- LITERATURE CITED 69

ARABIC SUMMARY

INTRODUCTION

I. INTRODUCTION

Clean cultivation was believed to offer advantages of increased growth, and was widely adopted in the early days of orcharding. Various developments began to reverse this trend (Robinson, 1983).

The cultivation of cover crops between the young citrus trees is very important for agriculture economics and high intensive agriculture production (El-Barkouki, *et al.*, 1987a). Also cover crops are often used to limit agrochemical inputs and improve soil fertility in perennial fruit production. Recent research indicates that cover crop management may play an important role in fruit pest biocontrol (Yarborough, 1993).

The primary functions of a cover crop in an orchard are to improve soil structure, prevent soil erosion, improve nutritional conditions for the trees by rendering nutrients in soil more available and add nitrogen and remove excess water from heavy soils in years of excessive rainfall. On cold nights a cover crop may lower the air temperature by as much as 11°F. Such benefits are needed in the newly planted areas in the north west part of Egypt and certain places in Kafr El-Sheikh governorate.

The presence or absence of plant cover and how it is maintained or removed from the orchard floor will affect the orchard environment, soil structure, soil moisture, soil fertility, orchard microclimate, and pest populations. These factors will influence, directly or indirectly, tree growth and nutrient status (Stasiak, 1990). Living ground cover compete with trees for water and nutrients, but bare ground results in soil competition between orchard trees and living ground covers is a factor in tree growth,

timing of the first crop year, and fruit yield and quality (Skroch, 1993). Several studies of orchard floor management have indicated the need for more information about specific effects of ground cover management systems (GMSs) (Atkinson and White, 1981; Haynes, 1980 and Hogue and Neilsen, 1987).

We need to look at how ground covers affect on orchard through soil properties, to supply of organic matter, erosion control, reduction of nutrients leaching N_2 fixation, soil moisture content, temperature modification, pest interrelationships and allelopathy in order to develop benefit: risk ratio for the different systems and particular plant species of chosen winter cover crops Berseem, (*Trifolium alexandrinum*) and broad beans *(Vicia faba)* on growth and nutrient status of "Washington navel" orange (*Citrus sinensis*) and Mediterranean mandarin (*Citrus reticulata*) nursling as well as their allelopathic effect.

This kind of studies are needed in the newly planted orchards in Egypt. Thus the decision on whether or not to use cover crops hings on the relative importance of the factors discussed. This study aimed to evaluate the effects of chosen winter cover crops on nurslings of the two species of citrus.

REVIEW OF LITERATURE

II. REVIEW OF LITERATURE

There are a number of soil management practices in use in citrus orchard in various parts of the world (Jones and Embleton, 1973). These practices are classified as follows:

1- Clean cultivation.

2- Cultivation with winter cover crops.

3- Cultivation with summer cover crops.

4- No cultivation (nontillage), which may consist of:
permanent sod or
complete elimination of weeds by hand hoeing or herbicides.

Thus, the citrus grower has the choice of a number of soil management procedures. The procedure adopted will vary greatly with natural conditions - the character of the soil, rainfall, prevalence of weeds, and other local factors. It may be well always to keep in mind that the function of cultivation may by very different in an established orchard from what they are annual crops are grown.

Several review articles have been written relating the influence of orchard soil management to tree growth, root growth, and soil parameters (Atkinson, 1980; Atkinson and white, 1981; Hogue and Neilsen, 1987).

Glenn and Welker (1989) summarized these findings as follow:

- A permanent sod cover in the orchard reduces tree vigor, yield potential, and soil nitrogen availability and also promotes shallow root development, while increasing or improving the status of soil organic