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 الوثائق الاصلية تالفة

بالرسالة صفحات

لم ترد بالاصل

STUDIES ON POTATO PRODUCTION UNDER ORGANIC FARMING CONDITIONS

BY

SHABAN DESOUKY ABOU-HUSSEIN

B. Sc. Agric Sci. (Horticulture),Menoufia Univ., 1990

M. Sc. Agric. Sci. (Veg. Crops), Ain Shams Univ., 1995

A thesis submitted in partial fulfillment
of
the requirements for the degree of

DOCTOR OF PHILOSOPHY
in
AGRICULTURAL SCIENCE
(VEGETABLE CROPS)

Department of Horticulture
Faculty of Agriculture
Ain Shams University

2001

APPROVAL SHEET

STUDIES ON POTATO PRODUCTION UNDER ORGANIC FARMING CONDITIONS

BY

SHABAN DESOUKY ABOU-HUSSEIN

B. Sc. Agric Sci. (Horticulture), Menoufia Univ., 1990
M. Sc. Agric. Sci. (Veg. Crops), Ain Shams Univ., 1995

This thesis for Ph.D. degree has been approved by:

Mohamed El saed Zaki M. El-Saied Zaki

Prof. of Horticulture.
Faculty of Agriculture,.Zagazg University

Ayman F. Abou-Hadid .....

Prof. of vegetable crops, Fac. Agric.,
Ain Shams University

Ibrahim Ibrahim El –Oksh I. El-Oksh

Prof. of vegetable crops, Fac. Agric.,
Ain Shams University (Supervisor)

Date of examination 24 /5 /2001

STUDIES ON POTATO PRODUCTION UNDER ORGANIC FARMING CONDITIONS

BY

SHABAN DESOUKY ABOU-HUSSEIN
B. Sc. Agric Sci. (Horticulture), Ain Shams Univ., 1990
M. Sc. Agric. Sci. (Veg. Crops), Ain Shams Univ., 1995

Under the supervision of:

Prof. Dr. Ibrahim Ibrahim El-Oksh
Prof. of vegetable crops, Fac. Agric.,
Ain Shams University

Prof. Dr. Taha Talat El-Shorbagy
Prof. of vegetable crops
National Research Center

Dr.Usama Ahmed El-Behairy
Lectures of vegetable crops, Fac. Agric.,
Ain Shams University

ABSTRACT

Shaban Desouky Abdel Aziz Abou-hussein, Studies on potato production under organic conditions. Unpublished Doctor of Philosophy Dissertation, Horticulture Dept., Fac. of Agric.,Ain Shams Unversity,2001.

Two field trails were established during 1998/1999 and 1999/2000 in newly reclaimed land at Sadat city,Taba farm.El Menoufia governorate. Potatoes var.Nicola was cultivated to study the effect of compost, i.e. chicken manure (dry manure or extract from chicken after 48h.) and compost (40 m^3 and 60m^3 /fed.) with two kinds of biofertilizer added to the soil (suspension from yeast ,pesedoumonas and Bacteria dissolving phosphate) or inoculated with tuber as commercial product called Microbin on vegetative growth, chemical composition of potato tuber and yield. The results from this study indicated that applying compost with chicken manure (as dry manure or extract from chicken after 48h.) and biofertilizer that were added to the soil or inoculated with tuber, increased vegetative growth expressed as plant height, number of leaves, number of stems, leaves and stem fresh weight. In addition, applying compost with chicken manure and biofertilizer increased the percentage of nutrients in potato leaves ,dry matter content, total carbohydrates and total yield per plant. The results indicated that using chicken manure as dry manure gave better results than using extract manure after 48 h., but there were no significant differences between these two treatments in most characters recorded. On the other hand, using chicken manure as dry manure with bio fertilizer increased nitrate content in potato tubers than using extract of chicken manure with bio fertilizer, such values were still in the acceptable ranges for human health. Also, using bio fertilizer with reducing the mineral fertilizes to quarter or half of the recommended dose gave the best results concerning vegetative growth and yield of potato crop.

Kew words
Potato (*Solanum tuberosum* L.CV.Nicola); Compost, Chicken manure, Bio fertilizers, Nutrition, Organic farming, Organic agriculture.

ACKNOWLEDGMENT

The author wishes to express his most sincere gratitude to **Prof.Dr. Ibrahim Ibrahim El-Oksh** Professor of vegetable crops, Department of Horticulture, Fac. Agric., Ain shams University, for valuable help, continuous advise, constructive supervision and support during this work.

I am honored to convey my deepest thanks to **Prof.Dr.Ayman F. Abou-Hadid** Professor of vegetable crops, Department of Horticulture, Fac. Agric., Ain shams University, for helping and encouraging me during this work.

I wish to extend my deep gratitude and sincere thanks to **Prof.Dr. Taha El Shorbagy,** professor of vegetable crops, Horticulture Department, National Research Center for his constructive supervision and valuable help throughout my thesis.

I would like to thank also **Dr,Usama El Bhairy** Lecture of vegetable crops, Fac. Agric., Ain Shams University for helping me during this work and special thanks to **Prof.Dr Mohamed Abed-el Maksod Kalafallah** Prof. of Microbiology , Agric Microbial Dept. National Research Center for helping me during this work.

I would also like to thank my collages at the Arid Lands Agriculture Unit, Department of Horticulture, Ain Shams University and research stuff, department of horticulture, National research center for their help and encouragement during this work.

I am particularly gratful to my family for their helps and continous encourgment during my study period.

Contents

List of Tables

List of Figures