شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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

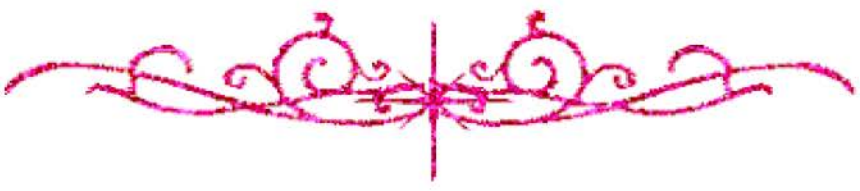
يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

بالرسالة صفحات لم ترد بالأصل

شبكة المعلومات الجامعية

بعض الوثائق الأصلية تالفة



TOWARDS A NEW APPROACH FOR ASSESSING THE HAZARDOUS EFFECTS OF SOIL SALINITY AND SODICITY

By

MOSTAFA MOHAMED MOSTAFA EL-GHANAM
B.Sc. Agric. (Soil Sci), Zagazig Univ. (1983)
M.Sc. Agric. (Soil Sci) Zagazig Univ. (1993)

THESIS
Submitted in Partial Fulfilment of the Requirement for the Degree of
DOCTOR OF PHILOSOPHY

IN
(Soil Science)

Soils & Agricultural Chemistry Dept.
Faculty of Agriculture at Moshtohor
Zagazig University (Benha Branch)

1996

بسم الله الرحمن الرحيم

"قَالُوا سُبحَانَكَ لا عِلم لنَا إلا مَا عَلمْتنَا إنكَ أَنتَ العَلِيم الحَكِيم"

صدق الله العظيم

(البقرة ٣٢)

ZAGAZIG UNIVERSITY
FACULTY OF AGRICULTURE
MOSHTOHOR

APPROVAL SHEET

Name : Mostafa Mohamed Mostafa El-Ghanam
Title : Towards a new approach for assessing the hazardous effects of soil salinity and sodicity.

Thesis submitted for the Degree of
Ph.D. in Soil Science

Thesis has been approved by:

Prof. Dr. .....

Prof. Dr. .....

Prof. Dr. .....

Prof. Dr. .....

(Committee in charge)

Date: / /1996.

CONTENTS

ACKNOWLEDGEMENT

The auther would like to express his deep appreciation and sincere gratitudes to *Dr. R.S. Abd El-Aal* Professor of Soil Science, Faculty of Agriculture at Moshtohor, Zagazig University (Benha Branch); *Dr. W.E. Ahmed* Professor of Soil Science, Soil and Water Research Institute, Agriculture Research Center, Egypt and *Dr. S.A. Soltan* lecturer of Soil Science, Faculty of Agriculture at Moshtohor, Zagazig Univeristy (Benha Branch) for proposing the problem, valuable supervision, sincere guidance and continuous encouragement.

Grateful appreciation is also due to *Dr. M.A. El-Shoney* Researcher in Soil science, International Research Center, for his helpful advice and cooperation.

INTRODUCTION

1. INTRODUCTION

Salt-affected soils occupy wide regions scattered all over the world, particulary in arid and semi-arid climates. In Egypt salt-affected soils are located mainly at the northern coastal regions, Faium, some spots through the Delta and Nile Valley, and Oaśes. Nowadays, due to the horrible increasing populations and hence growing food demands; the agricultural utilization of such soils through tolerant species of plants represents a vital means, of parallel increasing importance, to face this urgent problem.

Consequently, the assessment of salt-affected soils, should be run more accurately by the use of more suitable parameters relating to soil productivity beside the EC and ESP parameters. One of the most important points anti the current system of assessment the salt-affected soils, could be that the ESP is a relative parameter which can not express the absolute values of total cation exchangeability in soils.

Therefore, the current study was directed to develop more accurate system for assessing the salt affected soils via introducing the soil content of clay as a new parameter besides those, usually used (i.e. EC and ESP) parameters.

Soil salinized and sodicated models, tested were developed from a sandy and a clayey soils in the south of Delta. The validity of the results obtained via the different parameters were investigated by comparing them with those obtained from naturally salt-affected soils. The naturally salt-affected soils were represented by 70 locations adjacent to the bitter lakes and extending along the northern coast to include the areas around Manzalla, Burollos, Edku and Mariut lakes.

Both salinized and naturally affected soils were subjected to a greenhouse trial and dry matter yield was considered as a reference for evaluating the validity of the equations developed for soil assessment in presence and absence of clay % in soil as a new parameter.

REVIEW OF LITERATURE