شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم

HANAA ALY

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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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HANAA ALY

PHYTOREMEDIATION OF SALT AFFECTED SOIL FOR THE PRODUCTION OF FODDER PLANT

Submitted By

Rabeh Aly Abdo Ismail Abo Rabeh

B.Sc. of Agricultural Sciences, Faculty of Agriculture, Alexandria University, 1997

Diploma in Environmental Sciences, Institute of Environmental Studies & Research, Ain Shams University, 2007

M. Sc. in Environmental Sciences, Institute of Environmental Studies & Research, Ain Shams University, 2011

A Thesis Submitted in Partial Fulfillment
Of
The Requirement for the Doctor of Philosophy Degree
In
Environmental Sciences

Department of Environmental Agricultural Sciences
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APPROVAL SHEET

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This thesis was discussed and approved by:

Name Signature

1-Prof. Dr. Mohamed El Sayed El Nennah
Prof. of Soils & Water
Faculty of Agriculture
Ain Shams University

2-Prof. Dr. Mohamed Ahmed Mohamed Mady
Prof. of Plant Physiology & Head of Department of Botany
Faculty of Agriculture (Moshtohr)
Banha University

3-Prof. Dr. Hesham Ibrahim El Kassas
Prof. of Soil & Water Environment, Department of Environmental Agricultural Sciences, Institute of Environmental Studies & Research
Ain Shams University

4-Prof. Dr. Said Ali El-Desoky
Prof. of Plant Physiology, Department of Botany
Faculty of Agriculture (Moshtohr)
Banha University

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Under The Supervision of:

1-Prof. Dr. Hesham Ibrahim El Kassas

Prof. of Soil & Water Environment, Department of Environmental Agricultural Sciences
Vice Dean of Institute of Environmental Studies & Research of Post Graduate & Research
Ain Shams University

2- Prof. Dr. Said Ali El-Desoky

Prof. of Plant Physiology, Department of Botany
Faculty of Agriculture (Moshtohr)
Banha University

2021

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PHYTOREMEDIATION OF SALT AFFECTED SOIL AND PRODUCTION OF FODDER PLANT

Abstract

Salt stress become the most challenge for agriculture production and development. Two practical parts were carried out in a private farm at Abdo Basha Village, Kafr El-Dawwar, Behaira Governorate during two winter growing seasons 2017 and 2018 seasons to study the effect of the irrigation levels with salt water i.e., (tap water as control, 25 % salt water, 50 % salt water, 75% salt water and 100 % salt water) on growth, yield and accumulation of some salts in different plant parts of Salicornia plants grown in boxes in cultivated soil. Results indicated that plant height, leaf number, number of branches, fresh and dry weight of shoots increased with increasing salt water levels at 80,120,150 and 180 days of plant age during 2017 and 2018 seasons. In addition, root growth characteristics root length, root weight, fresh and dry weight are increased with increasing salt water levels at 80,120,150 and 180 days of plant age during 2017 and 2018 seasons. Yield and seed yield were increased with salt water levels during 2017 and 2018 seasons. Also, chemical composition for soil, root and shoot are increased with increasing sea water levels at 80,120,150 and 180 days of plant age during second growing season (2018). Total carbohydrates increased with salt water at high levels in root and shoots at 80,120,150 and 180 days of plant age during second growing seasons. Different salt irrigation water levels i.e., 25 % salt water, 50 % salt water, 75 % salt water and 100 % salt water) decreased salt percentage EC **(mmhos/cm) and** % absorption in soil at 0, 80, 120, 150 and 180 days of plant age during 2017 and 2018 seasons. Zero salt water (control) gave the lowest value from salt water percentage and % salt absorption at different plant stages during the two growing seasons. Increasing of salt water levels increased different salt accumulations in soil attributed to the salt water percentage during plant life time in both seasons.

Key words: Salicornia plants, salt water, phytoremediation, dry weight, soil chemical contents, salt percentage.

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