



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



HANAA ALY



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جامعة عين شمس

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PHYTOREMEDIATION OF SALT AFFECTED SOIL FOR THE PRODUCTION OF FODDER PLANT

Submitted By

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A Thesis Submitted in Partial Fulfillment
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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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