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 الوثائق الاصلية تالفة

بالرسالة صفحات لم ترد بالاصل

IMPROVING CROP PERFORMANCE OF SOME SUNFLOWER GENOTYPES GROWN UNDER SALT STRESS CONDITION

CM. SP

THESIS

Submitted in Partial Fulfillment of the Requirements for the Degree of

DOCTOR OF PHILOSOPHY IN SCIENCE

(ECOLOGY)

By

SAFINAZ SABET ZAKI

M.Sc. SCIENCE (ECOLOGY) FACULTY OF SCIENCE
CAIRO UNIVERSITY

Department of Botany
Faculty of Science
Cairo University

(2009)

APPROVAL SHEET

IMPROVING CROP PERFORMANCE OF SOME SUNFLOWER GENOTYPES GROWN UNDER SALT STRESS CONDITION

Name of the Candidate

Safinaz Sabet Zaki

Submitted to

Faculty of Science, Cairo University

Supervision Committee :

Prof. Dr. K.M. Zayed K.M. Zayed

Professor of Plant Ecology, Botany Department, Faculty of Science, Cairo University

Prof. Dr. M.S. Mandour

Professor of Plant Ecology, Water Relations and Field Irrigation Department, National Research Centre, Dokki, Cairo, Egypt

Prof. Dr. Effat Shábáná

Effat Shabana

Head of Botany Department
Faculty of Science
Cairo University

31-7-2010

APPROVAL SHEET

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Name of the Candidate

Safinaz Sabet Zaki

Investigator Committee:

Prof. Dr.\ ***KMAL Mohamed Omar Zayed*** .....

Prof. Dr.\ **VACLAV HEJNAK** (CZECH REPUBLIC) .....

Prof. Dr.\ **XU ZHEN ZHU** (CHINA) .....

Supervision Committee :

Prof. Dr. K.M. Zayed
Professor of Plant Ecology, Botany Department, Faculty of Science, Cairo University

Prof. Dr. M.S. Mandour
Professor of Plant Ecology, Water Relations and Field Irrigation Department, National Research Centre, Dokki, Cairo, Egypt

Prof. Dr. Effat Shábáná
Head of Botany Department
Faculty of Science
Cairo University
31- 7 - 2010

ABSTRACT

Name: Safinaz Sabet Zaki

Title: Improving Crop Performance of Some Sunflower Genotypes Grown Under Stress Condition.

Degree: Ph. D. unpublished Dr. of Philosophy – Faculty of Science Cairo University.

During two growing seasons, field experiments were conducted at Fayoum Governorate, aimed to evaluate the growth performance, productivity and the physiological attributes in terms of inorganic and organic components for **Euroflor, Vidoc** and **Sakha-53** sunflowers genotypes grown under different levels of saline soils (3.98-6.92-12.54 dS/m). The plants were sprayed using two levels of either Salicylic, Ascorbic or Oxalic acids (antioxidants). Besides, pre-sowing seed germination (Priming) using saline and antioxidant mixtures solutions were tested. The obtained data revealed.

Presowing seed treatments improved their germinability, increased germination speed (MTSG). The highly saline soils (12.08 and 12.54 dS/m) reduced the measured growth criteria, plant productivity partially the means of N, and markedly P, K^+, Ca^{++}, Fe, Zn, while a pronounce increases for Ca^{++}, Mg^{++}, Na^+ and Cl^- were recorded. Also, the organic plant components including leaf pigmentation, total carbohydrate and seed protein percentage were negatively affected, whereas a marked increase for Proline was detected.

Generally, Sakha-53 proved to be the most tolerant among the tested genotypes, withstanding the highest saline soils of 12.08 and 12.54 dS/m in both seasons. Meanwhile, spraying the tested genotypes using 200 ppm, Oxalic acid ameliorated the negative effects of salinity, Ascorbic acid ranked in the second order, while the Salicylic acid was the least, mostly failed to relief saline soil effect.

Finally, the most promising result of the present study is the highly oxidative effect of the Oxalic acid, as antioxidant, ameliorating the damage caused by highly saline soils on sunflower growth, yield, seed germination and the plant physiological attributes, where so limited researches and review were found on the use and role of this acid on economical plants.

Key words: Sunflower – genotypes – saline soils – antioxidants - Germination – Growth parameters – Productivity – Yield and Yield components - Inorganic and organic components

Supervisors:

1- Prof. Dr. K.M. Zayed
Professor of Plant Ecology, Botany Department, Faculty of Science, Cairo University

2- Prof. Dr. M.S. Mandour
Professor of Plant Ecology, Water Relations and Field Irrigation Department, National Research Centre, Dokki, Cairo, Egypt

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