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التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

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بالرسالة صفحات

لم ترد بالأصـــل

B9٤٧٠

IRRIGATION WITH DIFFERENT SEWAGE WATER AND ITS EFFECT ON PRODUCTIVITY AND QUALITY OF EGYPTIAN MANDARIN (*CITRUS RETICULATA*) UNDER NEWLY RECLAIMED AREAS

BY

OMIMA MOSTAFA EL-SAID

B.Sc. Agric. (Horticulture), Ain Shams Univ., 1979
M.Sc. in Environmental Sci., Ain Shams Univ., 1994

A Thesis Submitted for
Doctor of Philosophy
In
Environmental Science

Department of Agricultural Science
Institute of Environmental Studies & Research
Ain Shams University

1999

APPROVAL SHEET

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

Name	Signature
Prof. Dr. Ibrahim M. Desoky Prof. and Head of Horticulture Dept., Faculty of Agriculture, Ain Shams University.	I. M. Desoky
Prof. Dr. Saad El-Demerdashe Prof. Soils and Chairman of Socio-economic Div., Desert Research Center.	S. El-Demerdashe
Prof. Dr. Mohsen A. Bondok Prof. of plant physiology, Faculty of Agriculture, Ain Shams Univ.	M. Bondok
Prof. Dr. Abd El Azim M. El-Hammady Prof. of Pomology, Dean's Institute of Environmental Studies and Research, Ain Shams Univ.	El-Hammade

Date of Examination

Date / /

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Under The Supervision of :

1. Prof. Dr. A.M. El-Hammady
Prof. of Pomology,
Dean's Institute of Environmental Studies
and Research, Ain Shams Univ.

2. Prof. Dr. F.G. Moawad
Prof. of Agricultural Bio-Chemistry, Faculty of
Agriculture, Ain Shams Univ.

3. Prof. Dr. M. A. Bondok
Prof. of plant physiology, Faculty of Agriculture,
Ain Shams Univ.

4. Prof. Dr. A.A. M. Hussein
Prof. of Pomology, Desert Research Center.

ABSTRACT

Field experiments were carried out one the representative areas at El-Salhiya which irrigated with Nile water (control), El-Gabal El-Asfar area, irrigated with sewage water of Cairo city and Bahr El-Bakar area, irrigated with combined drainage water, planted with unique species varieties (Egyptian mandarin) in three seasons during 1995-1997. In an attempt to study the effect of irrigations with different water resources on growth and productivity of Egyptian mandarin trees.

The effects of prolonged irrigation by waste water (sewage and combined drainage waters) on heavy metals accumulation in soil and plant (Egyptian mandarin) were studied in Egypt. The results indicated that the concentration of Fe, Mn, Zn, Cu, Cd, Ni, Co and Pb in irrigation water samples were below than the maximum. permissible limits.

The highest values of Pb, Co, Ni, Cd, Zn, Mn, Cu and Fe were produced in leaves, shoots, fruits and peel of trees irrigated with sewage and combined drainage waters. However the levels of heavy metals in tested parts of Egyptian mandarin are considered to be within the permissible limits and rather below their side toxic effects on plant.

The concentration of total amino acids in leaves and fruits of mandarin trees irrigated with the waste water was significantly higher than those irrigated with Nile water.

Peroxidase activity increased in leaves and fruits produce of trees irrigated with combined drainage and sewage waters as compared to value the amount of peroxidase activity in those irrigated with Nile water.

The protein patterns (SDS) of Egyptian mandarin leaves and fruits changes according to irrigation water resources, since water pollution alternate the number and the area of protein fraction.

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