شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

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

:حفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من 15-25 مئوية ورطوبة نسبية من 20-40%

To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%

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التوثيق الالكتروني والميكروفيلم

Ain Shams University
Environmental Studies
and Research Institute

MOSSES AS A BIOINDICATOR OF HEAVY METALS POLLUTION IN GREAT CAIRO

By

MOHAMED OSMAN MOHAMED OSMAN

B.Sc. Faculty of Science (Botany), 1986,
Assiut University, Diploma of the Institute
of Environmental Studies and Research
Ain Shams University, 1991

A thesis submitted in partial fulfillment

Of

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In

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2000

Approval sheet

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ABSTRACT

Name: Mohamed Osman Mohamed Osman

Title : Mosses as a bioindicator of heavy metals pollution in Great Cairo.

Degree: Master of Environmental Biological Science

Submitted to: Department of Biological and Natural Sciences, Institute of Environmental Studies and Research, Ain Shams University.

This work is an attempt to investigate the suitability of Egyptian mosses as a bioindicator of air pollution of heavy metals in Great Cairo. For achieving this purpose ,seven moss species belong to four genera: *Barbula*, *Bryum*, *Funaria* and *Physcomitrium* were collecting from one site or more of 23 selected sites distributed in five different regions in two provinces (Cairo & Qualiobiya) in Great Cairo

The present study included

1- Description and identification of the studied mosses .

2- Anatomy and morphology of the studied mosses.

3- Determination of the content of heavy metals (Pb, Cu, Zn, Cd, Mn & Fe) in plant tissue, soil substrate and water in the vicinity of the studied mosses as well as on the plant surfaces of these mosses.

4- Measurement of Leaf area index.

The study revealed the following:

1-A positive relation was found between the concentrations of some heavy metals in plant tissue and soil.

2-No obvious effect was observed on the anatomy and morphology of the studied mosses as a result of pollution by heavy metals.

3-The value of LAI for some species was in direct proportional with content of heavy metals in the different sites.

4–Comparison of the obtained results indicated that plant tissue analysis is the best procedure to indicate the suitability of bryophytes as a bioindicator for air pollution by heavy metals.

Key words : Mosses - bioindicator - Pollution - heavy metals.

LIST OF TABLES