





ثبكة المعلومات الجامعية





جامعة عين شمس

التوثيق الالكتروني والميكروفيلم



نقسم بللله 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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USING DIFFERENT FORMS OF AGRICULTURAL MANAGEMENT TO PRODUCE HENNA (*LAWSONIA INERMIS*) WITH MINIMIZED POLLUTION UNDER NORTH SINAI CONDITIONS

BY Elham Mohamed Attia

B.Sc. Agric. (Horticulture.), Ain Shams Univ. 1971 M.Sc. Agric. (Horticulture), Cairo Univ. 1978

> A Thesis Submitted for Doctor of Philosophy In Environmental Science

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

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APPROVAL SHEET

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This Thesis for Ph.D. Degree in Evironmental Science has been approved by:

Name Signature

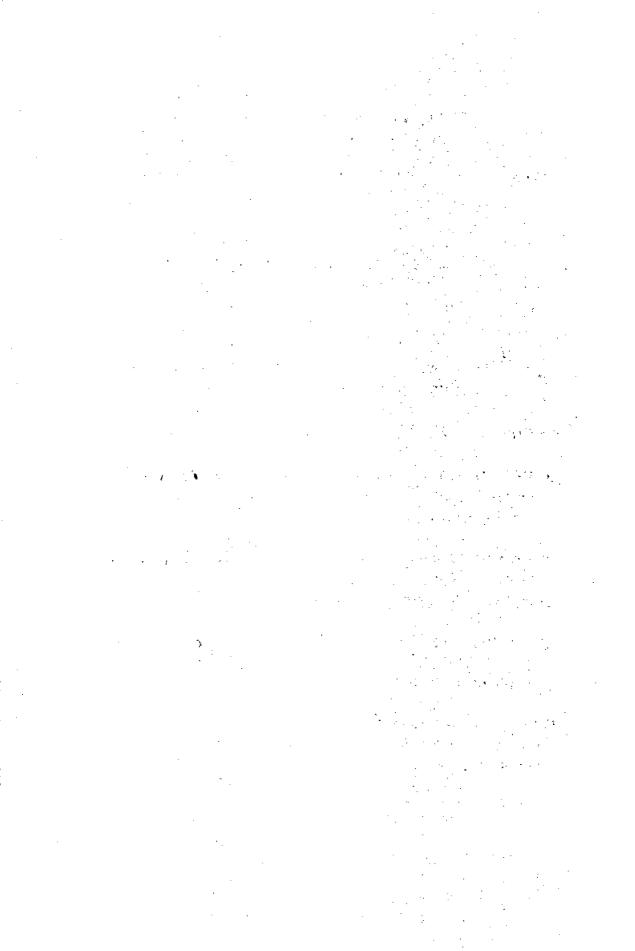
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M. E. Hashe



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Under The Supervision of:

- 1. Prof. Dr. Mahmoud El-Sayed Hashem Prof. of Horticulture, Faculty of Agriculture Ain Shams University.
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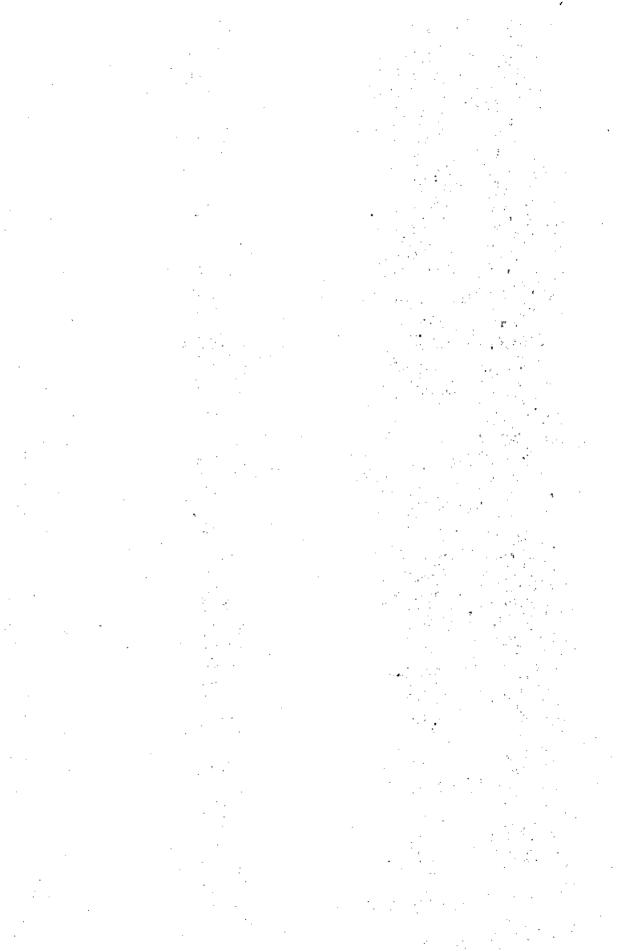


ABSTRACT

Two field experiments were carried out in two locations (Al-Arish and Al-Shiekh Zowaid), at North Sinai, during the two seasons of 1996 and 1997.

In an attempt, in the first experiment to study the effect of different plant spacing treatments 30,40 and 50 cm on the vegetative growth, yield and active constituents of henna (Lawsonia inermis L.) plants. While the second one was to study the effect of different fertilization treatments (Bio. fert.), (Organic) (½Bio. fert. + ½ Organic), (Organic + NPK) to minimize heavy metals contamination on the vegetative growth, yield and active constituents of henna (Lawsonia inermis).

It could be concluded that, in order to produce the maximum growth, yield from henna leaves and branches with highest content of active constituents as (Lawsone pigment, chlorophyll a, b and carotene, tannins, NPK and carbohydrates) and with allowable range of the following heavy metals as (Ni, Mo, Pb, Al, Se, Cr, Co and Cd) heavy metals, the best treatments were planting plants at on 30cm. distance between plants and using (NPK plus Organic) suitable quantities of fertilizers in different locations.



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