



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ





شبكة المعلومات الجامعية



شبكة المعلومات الجامعية

التوثيق الالكتروني والميكرو فيلم

جامعة عين شمس

التوثيق الالكتروني والميكرو فيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون أية 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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بعض الوثائق الأصلية تالفة



شبكة المعلومات الجامعية



بالرسالة صفحات
لم ترد بالأصل

**MICROBIOLOGICAL STUDIES ON
BIOREMEDIATION OF PESTICIDE RESIDUES
IN SOIL**

By

IBRAHIM ABD-ELBAKY MATTER

**B.Sc. (Agric. Sci.), Fac. Env. Agric. Science, Suez Canal Univ., Egypt,
1999.**

THESIS

**Submitted in Partial Fulfillment of the
Requirements for the Degree of**

MASTER OF SCIENCE

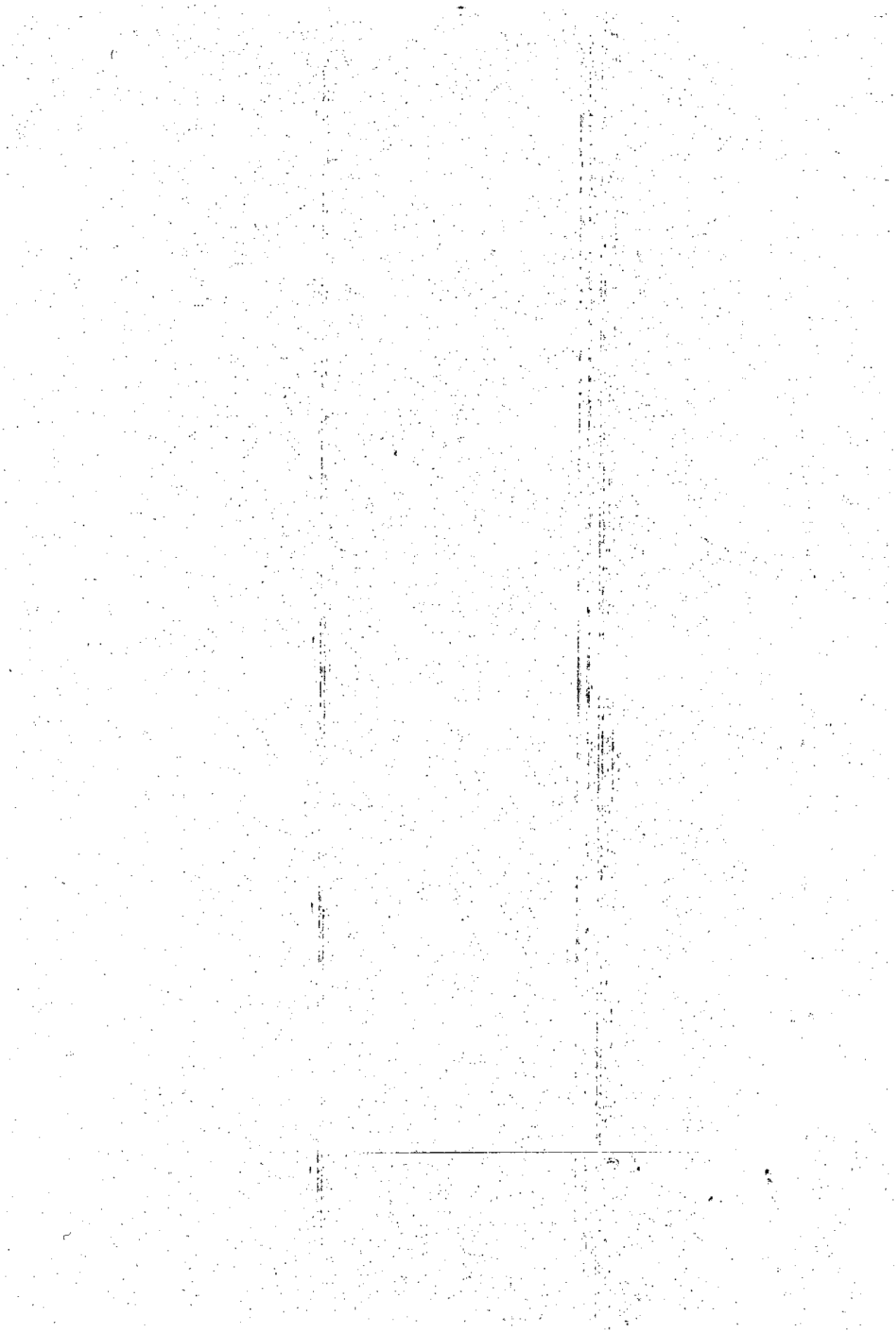
In

**Agricultural Sciences
(Agricultural Microbiology)**

**Department of Agriculture Microbiology
Faculty of Agriculture
Cairo University
EGYPT**

BNAVC

2007



APPROVAL SHEET

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Approved by:

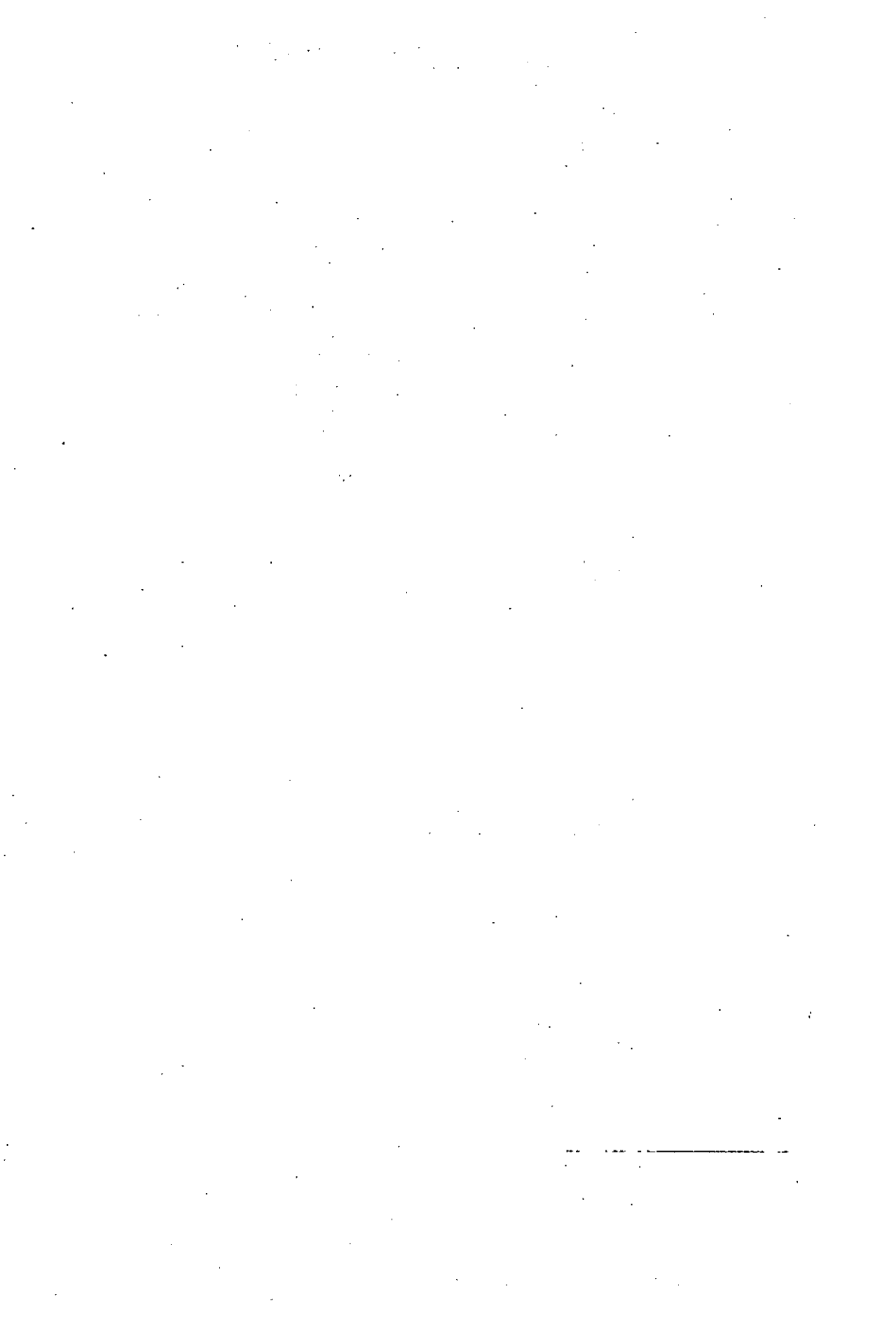
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Date: 7 / 8/2007



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Title of Thesis: Microbiological studies on bioremediation of pesticide residues in soil
Supervisors: Prof. Dr. Nadia Fahmy Emam, Prof. Dr. Mohamed Abd-Elmaksoud Khalafallah and Dr. Mohamed Abd-Elalim Aly
Department: Agriculture Microbiology **Approval:** 7 /8/ 2007

ABSTRACT

This work aimed to study the occurrence and microbial community sizes capable of utilizing and degrading the pesticides carbofuran and glyphosate in agriculture soils. Isolation and identification of some pesticide-degrading bacteria was carried out. In addition, the degradation rate and byproducts of carbofuran was also determined. 125 commercial-glyphosate utilizing isolates as well as 96 commercial-carbofuran utilizing isolates were obtained. Only 68 and 54 isolates able to utilize crude glyphosate and carbofuran respectively at 100 ppm active ingredient concentration as sole carbon and nitrogen source. Five isolates consider as good growing on either carbofuran or glyphosate at 100 and 500 ppm were selected. According to their molecular characteristics, they were identified as *Acinetobacter lwoffii* (10F), *Agrobacterium tumefaciens* (11M), *Ochrobactrum anthropi* (17N), *Escherichia coli* (23B) and *Agrobacterium tumefaciens* (26M). Carbofuran degradation in sterile and non sterile soil inoculated with these five isolates (individually) were estimated and the high degradation rate was observed in sterile soil inoculated with the strain *Acinetobacter lwoffii* (10F) which achieve 50.97% and 88.5% degradation after 10 and 20 days respectively. Carbofuran degradation in non sterile soil was lower than in sterile one inoculated with the same strain and that could be attributed to the competition between bacterial inoculums and the natural microflora in soil. The byproduct of carbofuran degradation in sterile soil inoculated with either the strain *Acinetobacter lwoffii* (10F) or the strain *Ochrobactrum anthropi* (17N) was determined and it was found that carbofuran phenol is the main product of carbofuran hydrolysis in soil.

Nadia F. Emam

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