



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

STUDIES ON *FRANKIA* IN SOME EGYPTIAN SOILS

By

MONA MOHAMED SAID ABD EL-HAMED ZAYED

B.Sc. Agric.(Microbiology), Ain Shams Univ., 1994

**A thesis submitted in partial fulfillment
of
the requirement for the degree of**

Master of Science

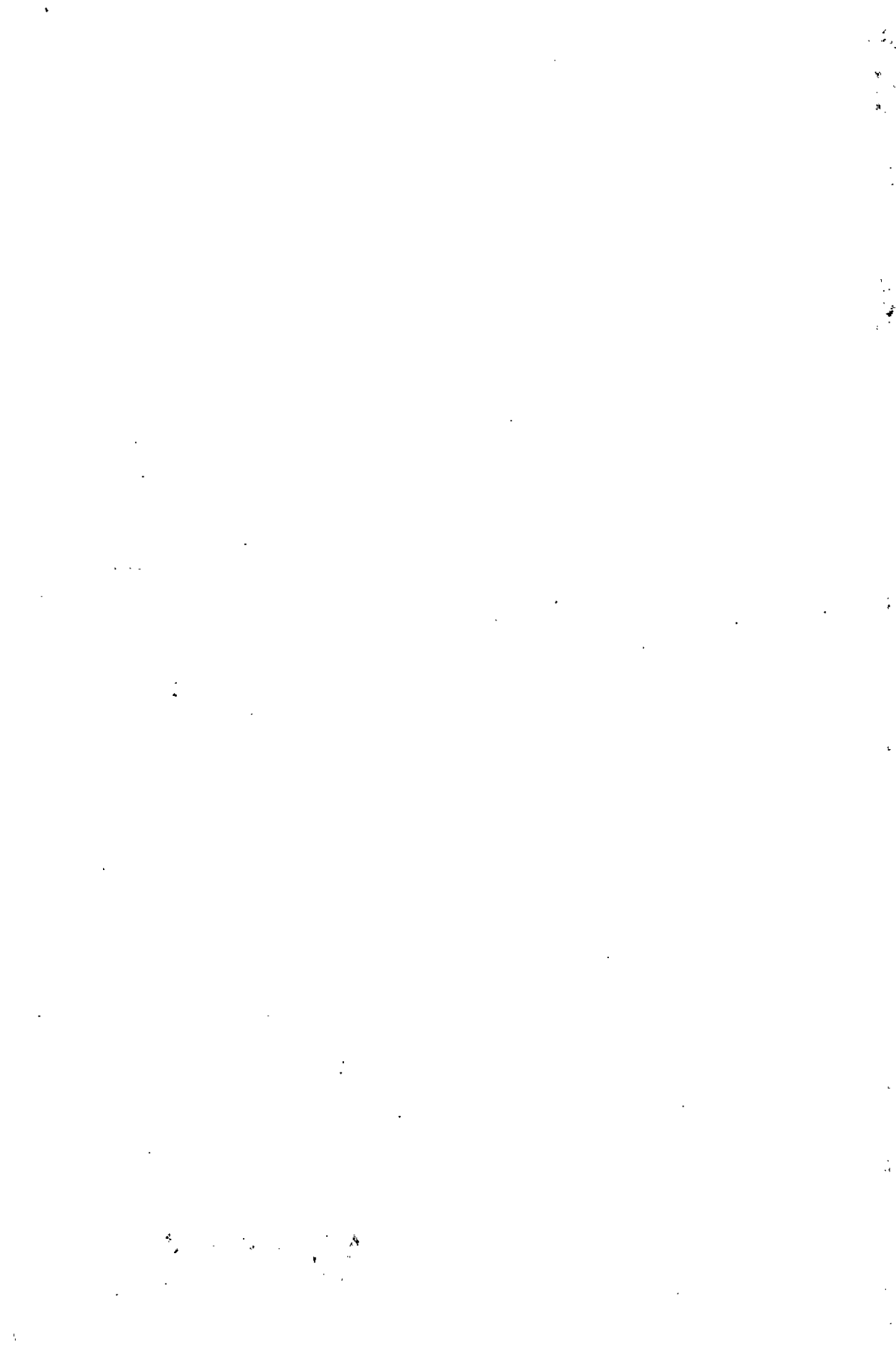
in

**Agricultural Science
(Agric. Microbiology)**

**Department of Agric. Microbiology
Faculty of Agriculture
Ain Shams University**

2001

B o s s v



APPROVAL SHEET

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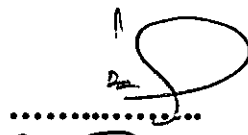
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notes

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ABSTRACT

Mona Mohamed Said Abd El-Hameid Zayed "Studies on *Frankia* in some Egyptian Soils". Unpublished Master of Science Thesis, University of Ain Shams, Faculty of Agriculture, Department of Microbiology, 2001.

Four native *Frankia* isolates were isolated from root nodules of two Egyptian actinorhizal plants (Casuarinas). The strains were designated as UF010, UF011, UF012, UF013 and *Frankia* UF001, UF002 were used as a reference strains. By light microscope all the isolates exhibited similar *Frankia* structure hyphae, sporangia and vesicles, being able to fixing atmospheric nitrogen. The growth patterns of the isolates and strains in BAP medium were similar to *Frankia* growth pattern. Differentiation between the four *Frankia* isolates and the two strains by their electrophoretic patterns of total protein, intrinsic antibiotics resistance test using (kanamycin sulfate, nalidixic acid, gentamycin sulfate, tetracycline, neomycin sulfate, chlramphenicol, streptomycin sulfate), their ability to use other carbon sources such as (sodium propionate, galactose, lactose, mannose, maltose, mannitol, sucrose, fructose, sodium citrate, sodium pyruvate) and electrophoretic analysis of the total DNA and plasmid DNA were carried out.

Reliable nodulation, number of nodules, dry weight of nodules and ARA of *C. cunninghamiana* seedlings were obtained by inoculating them with *Frankia* hyphae under defined greenhouse conditions, among the various morphological cell types (spores and vesicles).

Casuarina glauca and *C. cunninghamiana* inoculation with *Frankia* hypha and/or mycorrhizae were grown in loamy sand and clay soils under greenhouse conditions. High nodulation, ARA and growth parameter of plant were obtained with inoculation with *Frankia* and/or mycorrhizae.

Key words : *Frankia* *Casuarina*, nodulation, nitrogen fixation, mycorrhiza, acetylene reduction activity and antibiotics, loamy sand soil, clay soil.

Acknowledgment

Praise and thanks be to ALLAH, the most assisting and directing me to the way.

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Mona zayed