



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Ain Shams University Information Network  
جامعة عين شمس

شبكة المعلومات الجامعية

@ ASUNET



# شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



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

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

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

# بعض الوثائق الأصلية تالفة



# بالرسالة صفحات نم ترد بالاصل

**BIO-AGRICULTURE OF SOME ECONOMICAL  
LEGUMINOUS CROPS IN NEWLY RECLAIMED  
DESERT SOIL**

B7222

By

**HODA MOHAMED GAMAL EL SHABOURY**

B.Sc. Agriculture (Agronomy) Ain Shams University (1983)  
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**A thesis submitted for Doctor of Philosophy  
in**

**Environmental Science**

**Department of Agricultural Sciences  
Institute of Environmental Studies and Research  
Ain Shams University**

**2002**



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**in**

**Environmental Science  
Department of Agricultural Science**

Under the supervision of :

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APPROVAL SHEET

**BIO-AGRICULTURE OF SOME ECONOMICAL  
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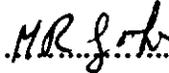
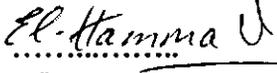
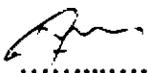
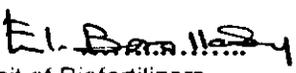
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This thesis for Ph.D. Degree in Environmental Science has been approved  
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Committee in charge

Date of examination: 26/ 8 /2002



## ABSTRACT

**Hoda Mohamed Gamal El-Shaboury "Bio-agriculture of some economical leguminous crops in newly reclaimed desertic soil". Unpublished Doctor of Philosophy Dissertation. Dept. Agric. Sci., Institute of Environmental Studies and Research, Ain Shams University, 2002.**

Field experiments for cultivating faba bean and lentil plants were carried out in two successive seasons (1998/1999 and 1999/2000) in a newly reclaimed soil (Nubaria). The effect of biofertilization using commercial nitrogenous and(or) phosphatic inoculants namely Rhizobacteria and(or) phosphorin, organic manuring using (garbage compost), application of different levels of inorganic N-fertilizer (ammonium sulphate) on the plant growth (plant height, number of branches/plant, root and shoot dry weights, nodulation expressed as number and dry weight of nodules), NPK plant content, dehydrogenase activity in rhizosphere and  $N_2$ -ase activity of developed nodules were periodically determined (40, 70 and 120 days after cultivation). Yield and yield components of both plants (number of pods & seeds/plant, weight of 100 seeds, NPK of seeds) were also estimated at the end of experiments. Heavy metals (zinc, copper, lead and cadmium) were determined in experimental soil, garbage manure, seeds and pod hulls to throw light on their accumulation in the edible plant parts as affected by biofertilization treatments.

Obtained results generally show that using a mixture of rhizobacterin and phosphorin and organic manuring significantly increased plant growth and yield of faba bean and

lentil plants in the presence of reduced level of inorganic N-fertilization, i.e., half the recommended amount can be saved due to the application of such treatment. Accumulation of heavy metals, in most cases, reached their minimal levels in faba bean and lentil seeds and pod hulls by the application of N + P-biofertilizers and organic manuring.

**Key words :** Biofertilizers, Organic manures, Garbage compost, Dehydrogenase, Nitrogenase.

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