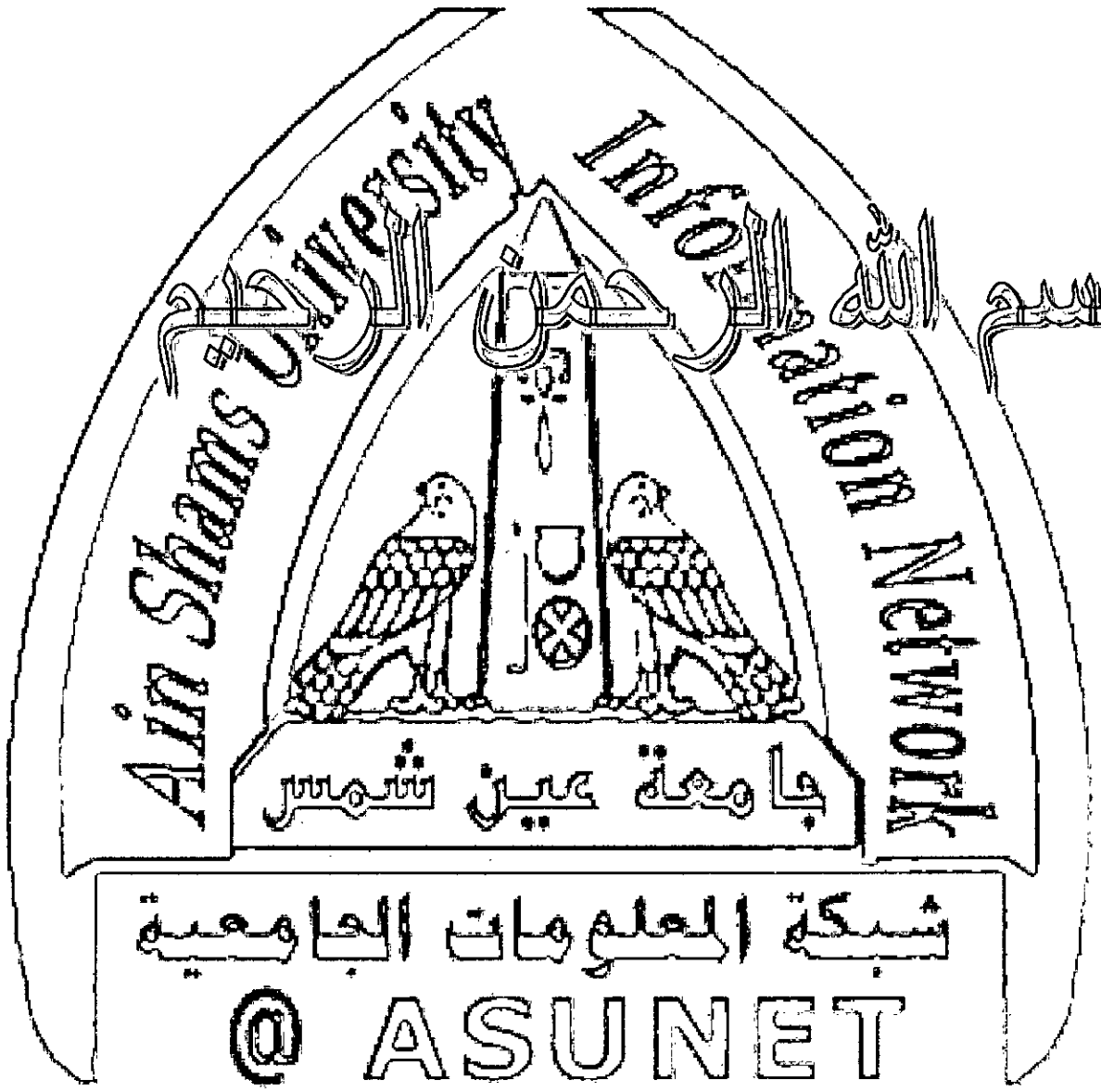
شبكة المعلومات الجامعية



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%

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

بعض الوثائق الأصلية تالفة

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جامعة عين شمس شبكة المعلومات الجامعية
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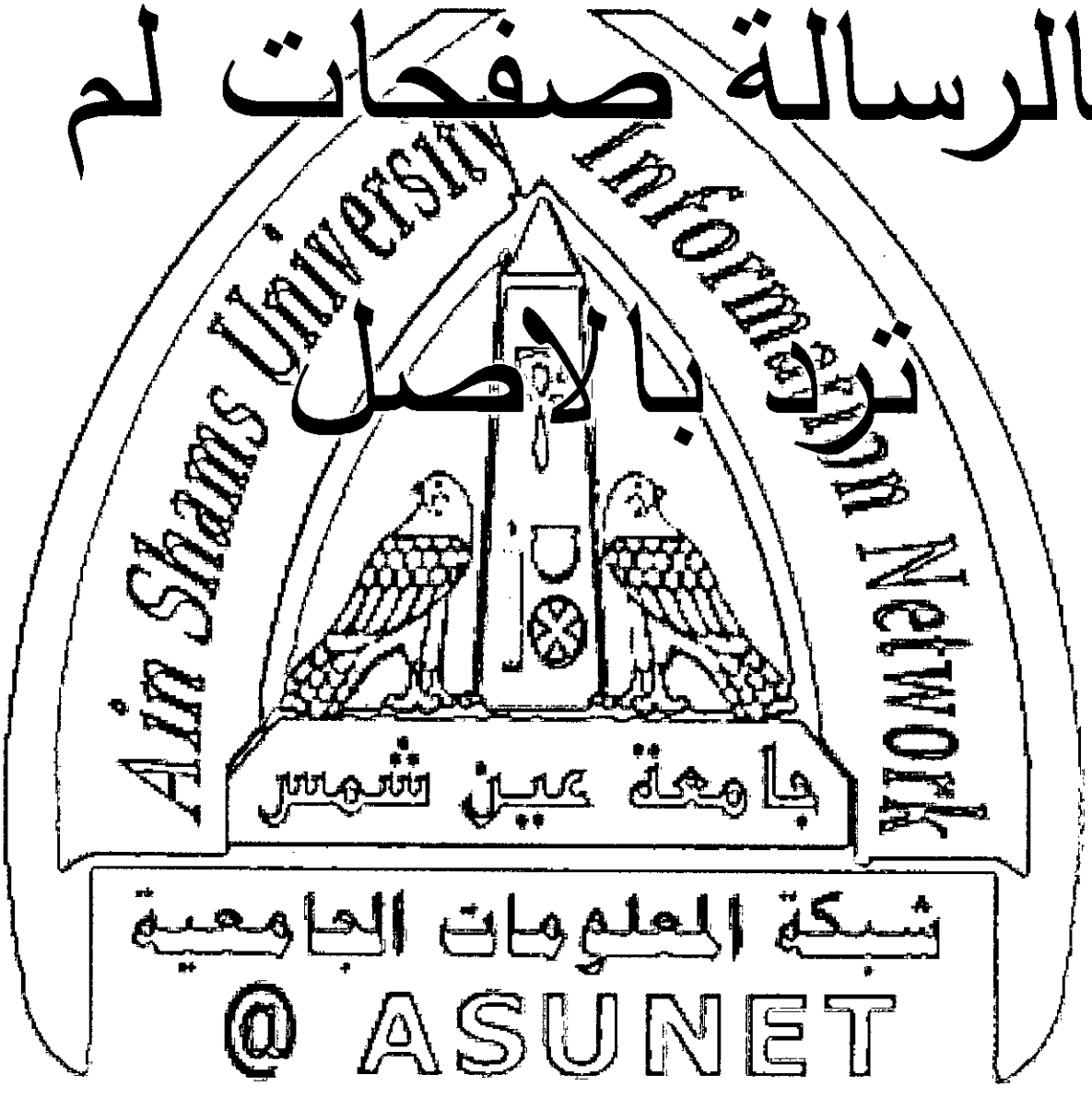
بالرسالة صفحات لم ترد بالأصل



ALEXANDRIA UNIVERISTY
Faculty of Agriculture
(Saba Basha)
Plant Production Dept.

EFFECT OF NITROGEN FERTILIZATION AND IRRIGATION ON YIELD AND ITS COMPONENTS ON SOME BARLEY CULTIVARS

A Thesis

Presented to the Graduate School
Faculty of Agriculture, Alexandria University
In Partial fulfillment of the
Requirement for the Degree

Of

Doctor of Philosophy

In

Agronomy

By

DOAA KHAMIS MOHAMMED KHAMIS

2010

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Chapter One

INTRODUCTION

1. INTRODCTION

Barley is the main cereal crop which grows along the North Western Coast of Egypt under rainfed conditions. Also, it grows in the newly reclaimed lands and old ones. Barley has been recognized as an adapted crop to adverse conditions as heat, salinity, drought and poor soils. Most of these new lands are characterized sandy and suffer at least, from two problems, low water holding capacity and macronutrients as well as low organic matter content . Therefore, sprinkler irrigation became a necessity system to evercome these problems and utilize the limited water supply more efficiently.

In Egypt, barley faces severe competition in old valley with other winter crops i.e., wheat, sugar beet, legumes and clover ect. The total cultivated barley area was 116640 fed in 2006/2007 season, with an average yield of 10-11 ard /fed. *

In Egypt, the national production of cereals is relatively lower than the consumption demands so that; it was suggested to use barley as complementary cereal crop to minimize this gap. This idea is based on the ability of this crop to grow well under drought stress compared in other cereals especially with the problem of water shortage in the country. However, interest in using barley for human consumption is increasing recently. Therefore, hull-less barley has been considered as an ideal type to achieve this goal **(El – Sayed 2002 a).**

Nutrition is essential for plant life and production, therefore mineral fertilization and agronomic practices lead to improve productivity.

Nitrogen fertilizer has contributed greatly to improve grain yield, although nitrogen fertilizer effects on barley production has been exclusively studied, further studies on determination of the optimum nitrogen level is still needed. Moreover, the importance of the nitrogen source is still debatable.

Most of the developed countries have adapted environmentally policies to sustain the earth ecosystem and reduce the consumption of non-renewable sources of energy of manufacturing fertilizers. This led to considerable interest in biological N_2-fixation and other biofertilizer technology **(Kotb, 1998).**

Bio-fertilizers are N_2 – fixing bacteria and contribute to nitrogen requirements for barley plants. Inoculation with N_2 – fixing bacteria increased filed crop production even in agricultural systems where mineral N supplementation is not a major problem **(Mitkees *et al* 1996).**

The importance of bio-fertilizer is to limit N- fertilizer level, pollution due in N dinitrifaction products that affect ozone and increase production coasts **(Zaid, 1992).**

This investigation was designed to study the effect of nitrogen fertilization and irrigation on yield and its components on some barley cultivars.

* Central Administration of Economics, Ministry of Agriculture and land Recrimination, Egypt, 2006/2007.

Chapter Two

REVIEW OF LITERATURE