



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

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جامعة عين شمس

شبكة المعلومات الجامعية

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شبكة المعلومات الجامعية
التوثيق الالكتروني والميكروفيلم



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جامعة عين شمس

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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

**EFFECT OF BIO AND MINERAL
FERTILIZATION ON NAKED BARLEY UNDER
RAINFED AND SUPPLEMENTAL IRRIGATION
IN MATROUH AREA, EGYPT**

BY

MAHMOUD ABD EL-SALAM ABD EL-AZIZ

B.Sc. (Desert land Reclamation and cultivation Technology),
Fac. Agric., Cairo University, 2002

CAPICP

THESIS

Submitted in Partial Fulfilment of the
Requirements for the Degree of

MASTER OF SCIENCE

In

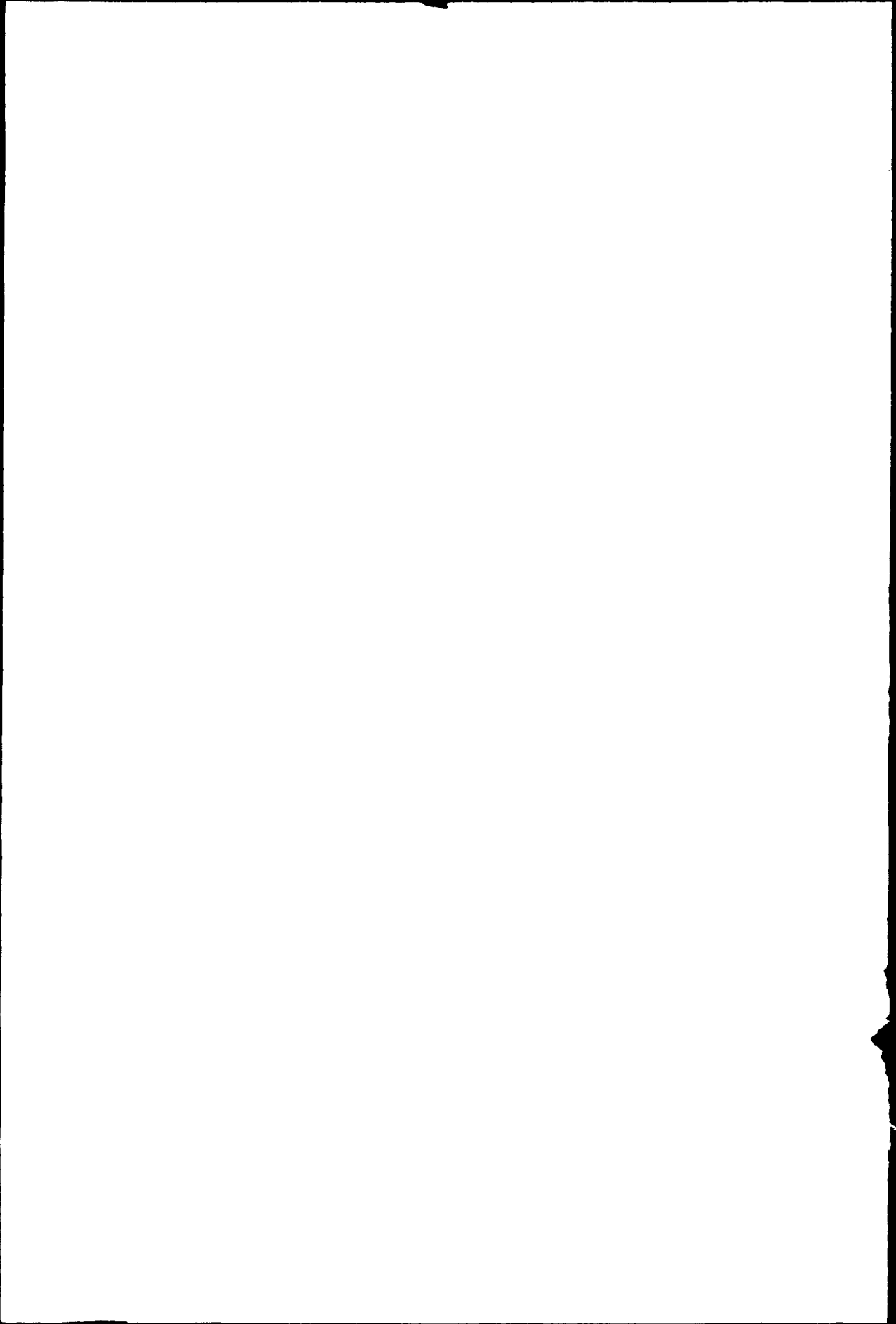
**Agricultural Sciences
(Agronomy)**

**Department of Agronomy
Faculty of Agriculture
Cairo University
Egypt**

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2011

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APPROVAL SHEET

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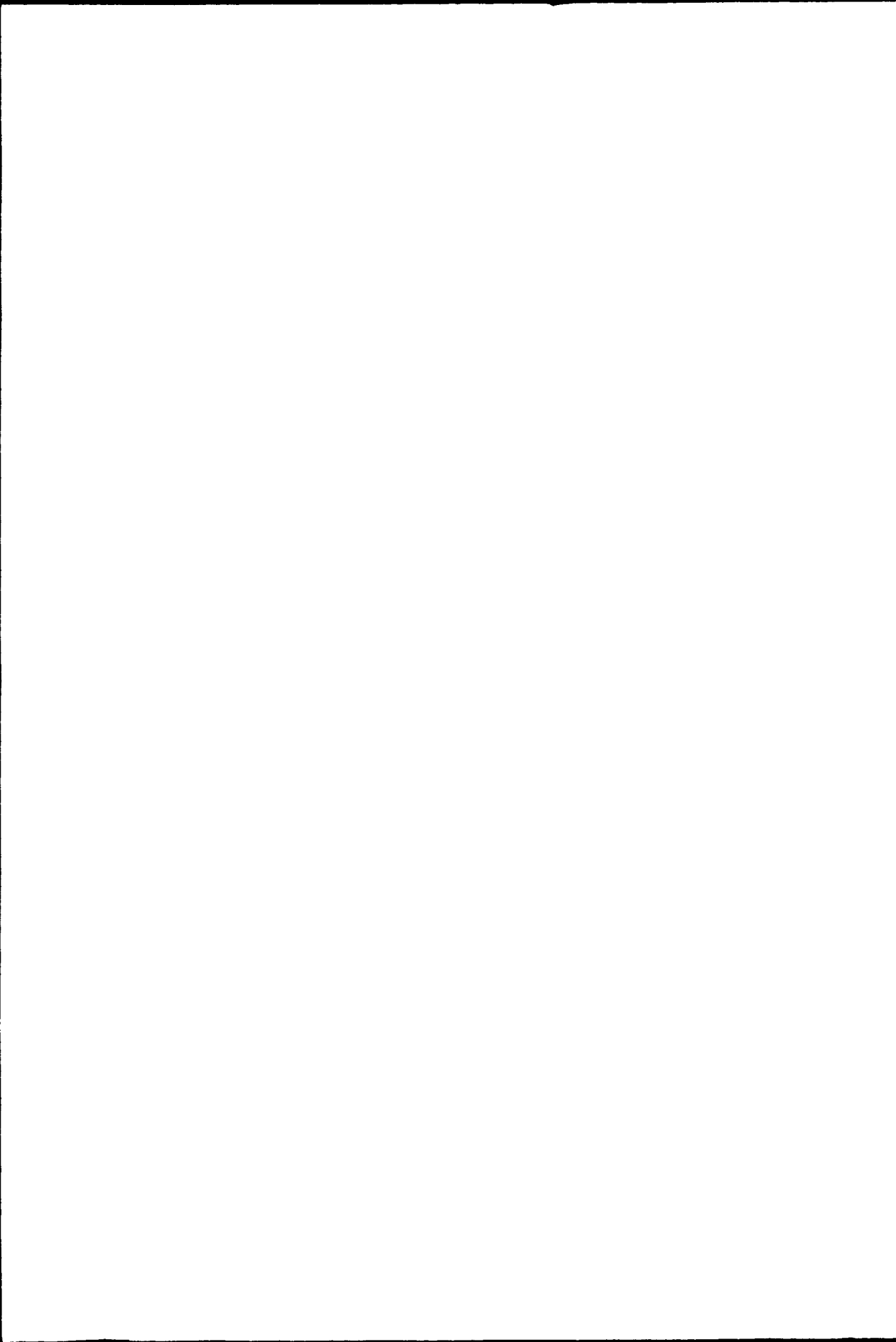
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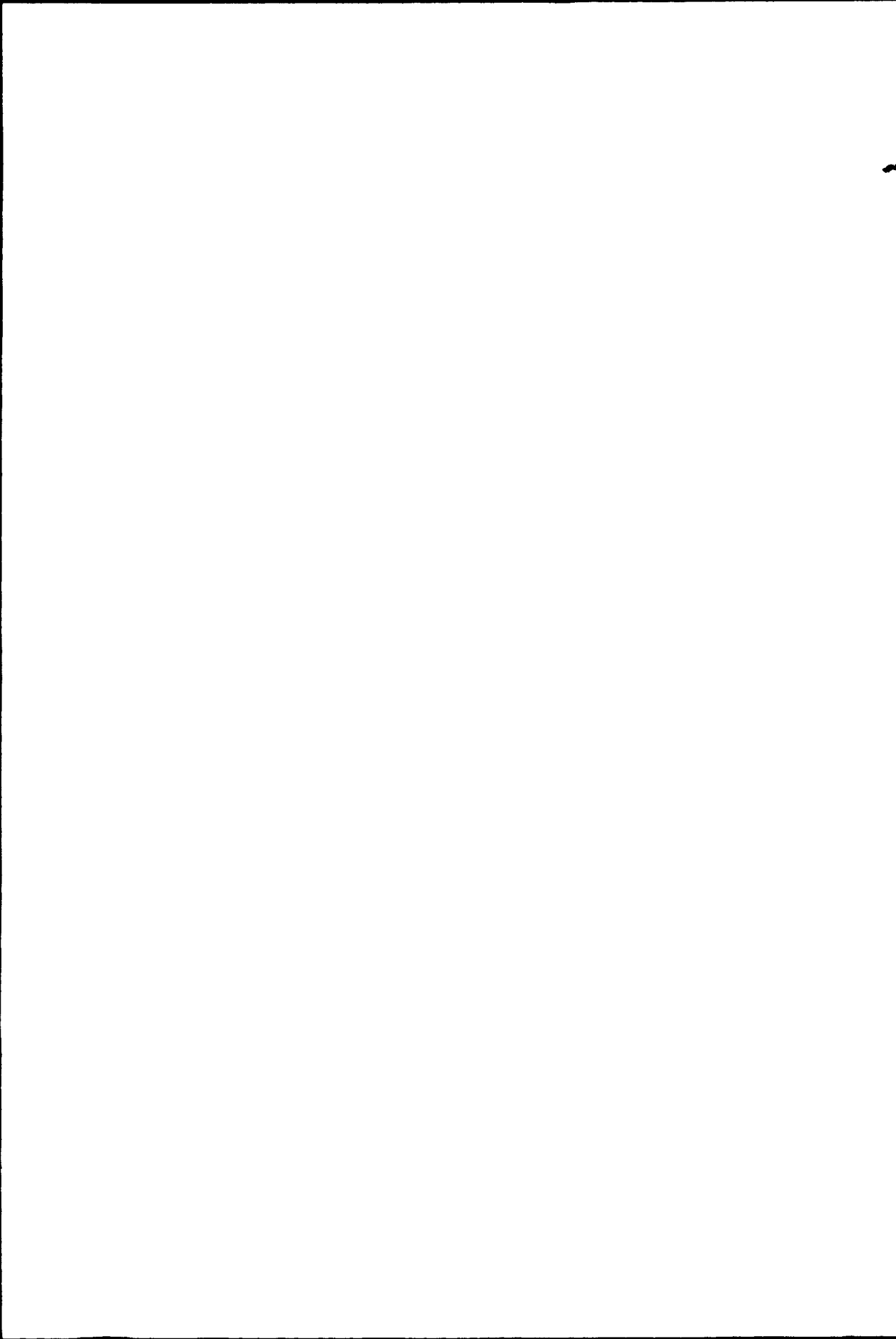
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Degree: M.Sc.

Title of Thesis: Effect of Bio and Mineral Fertilization on Naked Barley under Rainfed and Supplemental Irrigation in Matrouh area, Egypt

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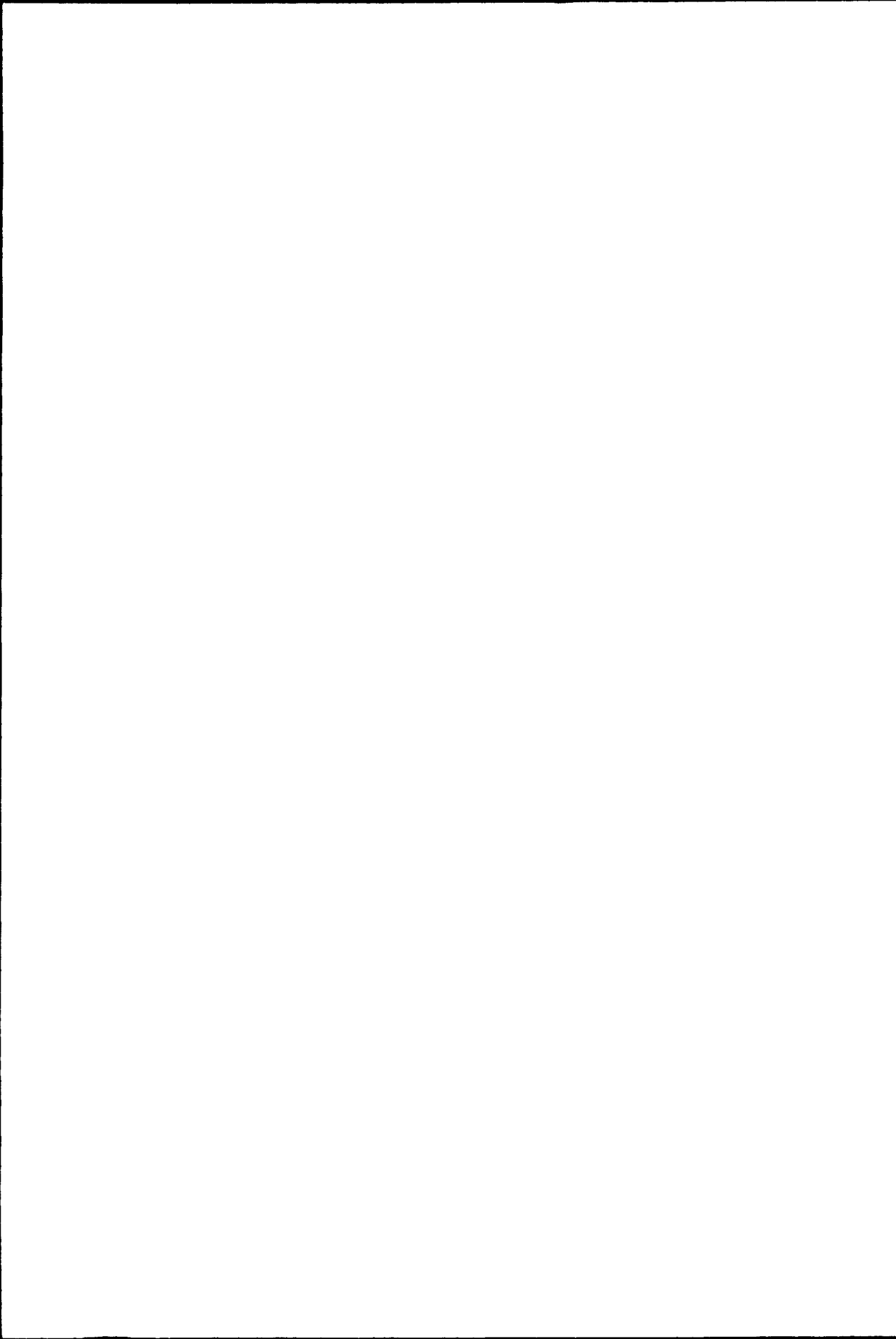
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ABSTRACT

Two experiments were carried out during the 2006/07 and 2007/08 winter seasons at El- Hammam area, Matrouh, Egypt to investigate the influences of supplemental irrigation (SI) and fertilization packages under rainfed conditions on productivity of naked barley (*Hordeum vulgare* L.). Each experiment included 28 treatments which were; four amounts of supplemental irrigation: 252; 378 and 504 m³/ fad. and seven fertilization packages: N₀P₀K₀, 400 g Microbein (Bio-N), N₂₀P_{7.5}K₁₂, N₂₀P_{7.5}K₁₂ + Bio-N/ fad., N₄₀P₁₅K₂₄, N₄₀P₁₅K₂₄+Bio-N/ fad. and N₈₀P₃₀K₄₈. Results showed significant differences among supplemental irrigation treatments in all the studied traits in both seasons. Also, results clearly showed that grain, straw and biological yields were increased by each increment in amount of water supply from 252 to 378 then to 504 m³/ fad. in the two seasons. It is evident that grain yield increased by 23.0, 82.7 and 111.1 % and by 22.9, 81.7 and 110.8 % in the first and the second seasons, respectively. Results indicated that application of 20 Kg N + 7.5 Kg P₂O₅ + 12 Kg K₂O/fad. + Bio-N gave the tallest plants, longest spikes, heaviest 1000-grain weight, as well as, the highest values of grain, straw, biological and protein yields, as well as, highest values of water use efficiency compared to the other tried fertilization packages in both seasons. Under rainfed conditions at El-Hammam area, NWC of Egypt, it could be obtained high gain productivity of naked barley economically, by adding 504 m³/ fad as a supplemental irrigation and 20 kg N +7.5 kg P₂O₅ +12 kg K₂O + 400 g Microbein (Bio-N)/ fad.

Key words: naked barley, supplemental irrigation, NPK fertilization, Bio-N fertilization, rainfall precipitation, grain yield and protein yield



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