بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــسـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية 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 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

COTTON RESPONSE TO SOIL ANHYDROUS AMMONIA INJECTION UNDER TWO LEVELS OF SOIL MOISTURE

By

OSMAN ABD EL-RAHMAN OSMAN MAZEN

B.Sc. Agric. Science (Poultry Science), Ain Shams University, 1979

A Thesis

Submitted in Partial Fulfillment of the Requirements

for the Degree of

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in

Agricultural Science

(Agronomy)

Department of Agronomy

Faculty of Agriculture

Ain Shams University

2002

APPROVAL SHEET

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This thesis for M.Sc. degree has been approved by:

Prof. Dr.: A. A. Mohamed ..... A. Awad
Prof. and Head of Agronomy Dept., Fac. Agric., Ismailia
Suez Canal University.

Prof. Dr.: A. M. A. Abo-Shetaia ..... A. Abo-Shetaia
Prof. of Agronomy, Fac. Agric.,
Ain Shams University

Prof. Dr.: M. A. Ashoub ..... Mamdouh Ashoub
Prof. of Agronomy, Fac. Agric.,
Ain Shams University (Supervisor)

Prof. Dr.: A. M. Esmail ..... Ali Esmail
Prof. of Agronomy, Fac. Agric.,
Ain Shams University (Advisor)

Date of examination: / / 2001.

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Under the supervisors:

Prof. Dr. Mamdouh A. Ashoub
Department of Agronomy
Faculty of Agriculture,
Ain Shams University

Prof. Dr. Ali M. Esmail
Department of Agronomy
Faculty of Agriculture,
Ain Shams University

Dr. Ibrahim M.A. Abdel Aziz
Soil & Water and Environment Research Institute,
Agricultural Research Center

Department of Agronomy
Faculty of Agriculture
Ain Shams University

2002

ABSTRACT

Osman Abd-El Rahman Osman Mazen. COTTON RESPONSE TO SOIL ANHYDROUS AMMONIA INJECTION UNDER TWO LEVELS OF SOIL MOISTURE. Unpublished Master of Science Thesis, Agronomy Department, Faculty of Agriculture, Ain Shams University, 2002.

The present investigation was carried out at Sakha Research Station, Kafr El-Sheikh governorate during 1999 and 2000 seasons to study the effect of soil injection with anhydrous ammonia (82% N) at two levels of soil moisture contents (11% and 26% by weight at one-foot depth) and two soil depths (10 and 20 cm) on growth, productivity and lint quality, nitrogen uptake and seed oil percentage for the Egyptian cotton cultivar Giza 89.

Results reveal the following findings:

1. Anhydrous ammonia injection at 10, 20 cm depth preplanting whether alone or with urea caused significant increments in plant height, total fresh and dry weight/plant, number of bolls/plant, boll weight, seed cotton yield (per plant and fed) lint yield/plant, lint percentage, seed index, lint index; leaf and stem nitrogen uptake/plant and seed oil percentage in the two seasons, compared to the application of urea alone on the surface of the soil, and caused significant reduction in days to first flower in the two seasons. Meantime, anhydrous ammonia injection had no significant effect on fiber properties in the two seasons.

2. Increasing soil moisture content from 11 % to 26 % before the injection of anhydrous ammonia into the soil caused significant increments in plant height, total fresh and dry weight/plant, number of bolls/plant, boll weight, seed cotton yield (per plant and fed), lint yield/plant, lint index, leaf and stem nitrogen uptake/plant and seed oil percentage and caused significant reduction in days to first flower in the two seasons. Meantime, soil moisture content had no effect on lint percentage, seed index and fiber properties in the two seasons.

3. The application of anhydrous ammonia at a rate of 62 kg N/fed at 20 cm depth and 26 % soil moisture content caused the maximum increments for growth characteristics, yield and yield components, leaf and stem nitrogen uptake and seed oil percentage and caused also the maximum reduction in days to first flower in the two seasons. Meantime, the application of anhydrous ammonia at a rate of 62 kg N/fed at 20 cm depth and 26 % soil moisture content had no effect on lint percentage, seed index and fiber properties in the two seasons.

Key words: Placement of ammonia, dry weight, yield and yield components, lint index, seed index, fiber properties, plant N-uptake and seed oil percentage.

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