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

Alexandria University
Faculty of Agric. (Saba-Basha)
Plant Production Dept.

NITROGEN USE EFFICIENCY OF POTATO CROP IN THE NEWLY RECLAIMED CALCAREOUS SOIL

A THESIS

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BY

AHMED MOHAMED MOHAMED HUSSEIN

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Alexandria University
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Ahmed Hussein

INTRODUCTION

1. INTRODUCTION

Potato (*Solanum tuberosum*, L.) is an annual, herbaceous and dicotyledonous plant with fleshy tubers that arise to underground stems which are erect stages of development but later became spread and prostrate or semi-prostrate. Tubers have buds or eyes, from which sprouts arise under certain conditions and are harvested for human consumption or animal feed or for producing the new seeds. It is an important crop in the human diet and not only the most important vegetable, crop in terms of quantities produced and consumed world wide, but also the fourth major food crop after wheat, rice and corn. It is considered to be one of the most important vegetable crops in Egypt. The total area cultivated with potatoes increased from 53700 feddans in 1978 to 190000 feddans in 1995, the production was 733.000 and 2.000.000 tons, respectively (Ministry of Agric. and Reclamation, Egypt (1995), Economic Bulletin).

In Egypt, potatoes are cultivated in three seasons, summer, fall and winter (Mehayara). The crop of winter season is mainly produced for export to the European countries.

Many major projects are going on to grow winter potatoes in the newly reclaimed areas depending upon the available knowledge of growing potatoes in the Nile Valley. It is well-known that nitrogen has a major role in the production and maintenance of an optimum plant canopy for continued tuber growth through long growing season. Knowledge of plant response to N fertilizer and optimum nitrogen

level is essential for high potato production. Also, potato are known to uptake plant nutrient requirements heavily, in order to produce high yield. Most researchers agreed that N is the key element in fertilizing potatoes.

A knowledge of the residual soil N, rate amount of fertilizer and time of application and the individual crop needs, are all required to optimize N fertilization recommendations. Recommendations based on these factors have the potential for improving N fertilizer efficiency, as well as increasing production with indeterminate potato varieties. Both efficiency and production may be optimized by N fertilization practices (rate and time of application) that maximize plant and tuber growth rates early and during the growing season.

Exaggeration of amounts of N being applied to the crop which mostly applied at 2 doses only are strongly believed to be of great value in these areas. Nevertheless, the soil in such areas contains considerable percentage of sand, which reduces its water holding capacity, and consequently results in significant losses of N fertilizer, especially in case of adding the whole quantity into two doses. Such conditions are thought to reduce N use efficiency and consequently affecting tuber yield and quality..

This investigation was carried out to ameliorate N-use efficiency in such areas and finding out the optimum N quantity applied to the crop and the number of N doses to improve potato yield and quality.

REVIEW OF LITERATURE