بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها

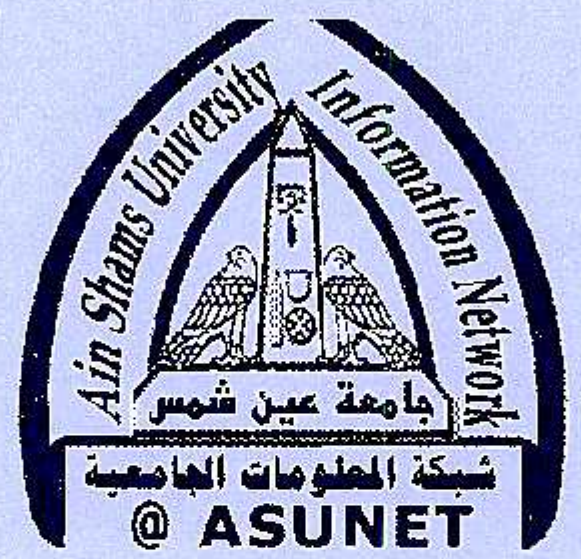
علي هذه الأفلام قد أعدت دون أية تغيرات

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 الاصلية تالفة

بالرسالة صفحات لم ترد
بالاصل

EFFECT OF SOME CULTURAL PRACTICES ON RICE

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CONTENTS

		Page
ACKNOWLEDGMENT		
INTRODUCTION		1
REVIEW OF LITERATURE		3
A.	Growth characters	3
B.	Yield and its components	7
C.	Grain quality characters	19
MATERIALS AND METHODS		23
A.	Growth characters	25
B.	Yield and its components	25
C.	Grain quality characters	26
RESULTS AND DISCUSSION		29
1.	Growth characters	29
2.	Yield and its components	49
3.	Grain quality characters	87
SUMMARY		109
LITERATURE CITED		112
ARABIC SUMMARY		

INTRODUCTION

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Rice (*Oryza sativa* L.) is the main food crop for about one half of the world's population; it is the staple food in the south and southeast Asian countries. About one-third of mankind (1.3 billion people) depends on rice for more than half of its food (Annual Report of International Rice Research Institute (IRRI) for 1976).

About 53% of the world's rice growing area is irrigated and produced 73% of the world's rice (DeDatta, 1986).

In Egypt, rice is considered to be the second export crop after cotton, and also as one of the most important food crops after wheat. It occupies annually about one million feddan with an approximate production of 4.8 million metric tons. There was a gradual increase in the national average of grain yield, from 2.14 tons/fed. in 1976, to 2.40 tons/fed. in 1983 (Food and Agricultural Organization (FAO), 1985). In 1995, the national average yield of rice was about 3.44 tons/fed. (one feddan= 4200 m^2) which equals 8.2 tons/ha (Final Report of Rice National Compaign). This increase was mainly due to replacing the old rice cultivars with the newly improved varieties such as Giza 176, good research and development infrastructure, excellent arrangement for international cooperation in science and technology and above all, hard working farming community.

Under irrigated conditions, rice is either direct seeded or transplanted. In the last decade, direct seeding has been adopted as the most efficient rice planting method in many developed countries where labor supply is limited and expensive (DeDatta, 1986).

As compared with the transplanting method, direct seeding eliminates labor demands for seedbed preparation, seedling care, pulling of seedlings, and seedling transport from nursery to the permanent field.

The sowing date indirectly determines soil temperature and other weather conditions to which the young seedlings, likely, will be exposed during growth, panicle formation, heading and flowering, grain formation and ripening.

The number of plants in a given area of land exerts a marked influence on growth vigor of the individual plant. Increasing the seeding rate causes decreasing the yield per plant. Numerous researchers have reported that establishing a critical rice plant population was necessary to obtain maximum grain yields.

Nitrogen fertilizer management plays an essential role in increasing rice crop productivity. Rice is noted for its poor utilization of fertilizer nitrogen in comparison with other field crops. Increasing nitrogen level, is one of the most important factors that limits productivity of rice cultivars. Hence, a newly cultivated rice cultivar needs further investigation of such important factors to determine the optimum level of each in order to achieve maximum productivity.

The present study aimed to investigate the effects of sowing date, seeding rate, nitrogen level and their interactions on growth, yield and its components and some grain quality characters of the newly cultivated rice cultivar Giza 176.

REVIEW OF LITERATURE

REVIEW OF LITERATURE

Several researchers studied the effect of sowing date, seeding rate and nitrogen levels on rice growth, yield and its components and quality characters. These researchers will be reviewed for each factor as follows :

A. GROWTH CHARACTERS :

1- The Effect of Sowing Date :

Wells *et al.* (1983), in USA, reported that sowing on April 7, May 4 and June 8 significantly affected the phenological stage and number of days to heading.

Dunand and Dilly (1984), in USA, found that delaying in sowing date from mid-April to mid-May reduced plant height.

Yamamato *et al.* (1984), in Japan, found that the number of tillers and plant height responded more to early sowing date.

Canet and Colon (1986), in Cuba, reported that sowing in mid-July significantly reduced plant height compared with earlier sowing in mid-April or May and June.

Rao (1986), in India, found that early sowing produced more tillers than late sowing.

El-Kalla *et al.* (1987), in Egypt, reported that the number of days from sowing to heading had gradually decreased with delay in sowing to June 20. The tallest plants were those resulted from earlier date, i.e. at April 20.

El-Nemer (1987), in Egypt, found wide variations for vegetative period due to differences in sowing date.

Jiang and Zhou (1987), in China, revealed that delay in sowing at July 25 decreased the number of tillers/mu (1 mu= 670 m^2).

Park *et al.* (1990), in Korea, recorded that critical sowing dates based on heading date of rice cultivars Odaebyeo, Balagonbyeo and Seomlinbyeo were 10th June and 20th May.

Abd El-Rahman *et al.* (1992), in Egypt, stated that the earlier sowing date (May 1st) gave superior plant height and panicle length.

Assey *et al.* (1992), in Egypt, found that tallest plants were obtained from April 10 sowing date when compared with delayed sowing dates of 20th and 30th April.

El-Kalla *et al.* (1994), reported that sowing at May 15th recorded higher means of plant height than sowing dates at May 1st and May 30th.

2- The Effect of Seeding Rate :

Shaalan and Ali (1981), in Egypt, reported that increasing seeding rate up to 60 kg seeds/feddan, increased the plant height for Giza 170 rice cultivar.

Aliaca *et al.* (1985), in Spain, using seeding rates of 96, 144 and 192 kg/ha, reported that there was no marked response of seeding rate on the number of tillers/plant.