



شبكة المعلومات الجامعية

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شبكة المعلومات الجامعية
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شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكرو فيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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15-25- c and relative humidity 20-40%

بعض الوثائق الأصلية تالفة

بالرسالة صفحات لم ترد بالاصل

STUDIES ON THE PHYSIOLOGY AND PRODUCTION OF WHEAT

By



AZZA EL-SAYED AHMED KHAFFAGY

B.Sc., Agronomy, Fac. Agric.

Tanta Univeristy, 1991

THESIS

Submitted in Partial Fulfilment of
The Requirements for the Degree of

MASTER OF SCIENCE

IN

(AGRONOMY)

Faculty of Agriculture
Kafr El-Sheikh, Tanta University

1998

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CONTENTS

	<i>Page</i>
INTRODUCTION	1
REVIEW OF LITERATURE	2
MATERIALS AND METHODS	23
RESULTS AND DISCUSSION	29
A) Growth analysis and attributes	29
1- Dry matter accumulation.	29
2- Dry matter distribution	37
3- Leaf area index	38
4- Crop growth rate	44
5- Relative growth rate	44
6- Chlorophyll content	45
B) Yield and yield Attributes	49
1- Plant height	49
2- Spike length	52
3- Number of spikelets per spike	53
4- Number of grains per spike	56
5- Grain weight per spike	58
6- 1000-grain weight	59
7- Grain yield per feddan	60
8- Straw yield per feddan	63
9- Biological yield per feddan	66
SUMMARY	68
REFERENCES	76
ARABIC SUMMARY	

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INTRODUCTION

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Wheat (*Triticum aestivum* L.) is the leading food crop in the world farming and the most important cereal crop grown in Egypt. Increasing wheat productivity under Egyptian conditions is one of the main targets of the agronomists.

The yield of wheat is a function of many factors among which preceding crops, seeding rate and nitrogen fertilization are of great importance. As wheat comes after summer field crops in the rotation, the species of preceding crops play a dominant role in the production of wheat plant. Moreover, the amount of seeding rate and fertilizers are among factors of prime importance influencing the yield of wheat. Nitrogen is the plant nutrient most universally needed to meet the fertilizer requirement for the high crop yields obtained in Egypt.

Therefore, the objectives of this investigation were to study the effect of the preceding crop, seeding rate and nitrogen level on the growth, yield and yield components of wheat cv.; Giza 163 (*Triticum aestivum* L.).

REVIEW OF
LITERATURE

REVIEW OF LITERATURE

Some of the previous work with regard to effect of preceding crops, seeding rates and nitrogen levels fertilization on the growth and yield of wheat will be reviewed as follows :

1- EFFECT OF PRECEDING CROPS:

Singh *et al.* (1972), showed that there were differences in grain yields of wheat due to the preceding crops i.e. maize and paddy.

Frolov (1975), found an increase in grain yield of wheat by about 0.5-1.4 t/ha depending on the preceding crop.

Prokopov *et al.* (1975), showed that winter wheat grown after legumes yielded 3.91 t grain/ha compared with 3.29 t when grown after cereals.

Googe (1976), reported that spring wheat grown after maize, fallow, peas, buck wheat, sunflower, potatoes, wheat or sugar beet, gave average grain yield of 2.15, 2.00, 1.87, 1.83, 1.78, 1.75, 1.40 and 1.34 t/ha, respectively.

Nemykin (1976), reported that grain yield of winter wheat grown after fallow, winter wheat/ vetch mixture for fresh fodder, silage maize or in monoculture amounted to 3.81, 3.45, 3.08 and 2.45 t/ha, respectively.

Pésik (1976), found that growing wheat in rotations of clover/ wheat/ sugar beet/barley gave higher yield compared with sugar beet/ barley/ wheat/ barley (80% cereals), barley/wheat (100% cereals) or wheat in monoculture.

Singh (1976), demonstrated that wheat gave the highest average grain yield of 3.22 t/ha when sown after soybeans and the lowest yields of 2.66 t when sown after sorghum.

Sandhu *et al.* (1977), found that the grain yield was 4.07 t/ha in maize/ potato/wheat/mung rotation, 4.13 t/ha in maize/wheat/mung rotation and 4.13 t/ha in the standard maize/ wheat rotation.

Zatko (1978), showed that wheat yield was higher after rape (6.97 t/ha) and silage maize (6.91 t/ha) than after barley (6.47 t/ha).

Meelu *et al.* (1979), found that grain yield of wheat following rice in rotation rice/ wheat/mung bean were 0-390 kg lower than in wheat following maize in the maize/ wheat/mung bean rotation.

Demo and Zàková (1980), stated that average grain yield was higher after winter rape (7.95 t/ha) than after silage maize or spring barley (7.37 and 6.98 t/ha, respectively).

Bocz and Sarvari (1981), examined the effects of three preceding crops on wheat yield and found that pea was the best and wheat was the worst preceding crop.

Brandon *et al.* (1981), reported that grain yield was higher 1 year after a preceding rice than in immediately following rice.

Burlacu *et al.* (1981), demonstrated that grain yield was highest when peas were the preceding crop and lowest when sugar beet was the preceding crop.

Petkov (1981), demonstrated that all wheat cultivars produced low yield when the preceding crop was wheat. After maize for grain the cultivars increased their yield by 62.3%; after sunflower by 73.2% and after beans by 85.6% as compared to the results obtained after wheat.

Sullivan *et al.* (1981), indicated that wheat yields were markedly superior when following soybeans compared with wheat after maize or sorghum.

Zatko and Bielcky (1981), showed that wheat yield was 4% higher after silage maize than after spring barley.

Balsan and Zatko (1982), found that yields of winter wheat were higher when it had been sown after previous crops of legumes or silage maize than after barley.

Decau and Pujol (1982), found that grain yield were lowest after sorghum and maize and highest after Lucern and soybean.

Haban and Zatko (1982), reported that grain yield was 8.8% higher after Lucern and 5.7% higher after silage maize compared with those after barley.

Shafshak *et al.* (1982), indicated that crop rotation had no significant effect on 1000-grain weight and straw yield of wheat.

Turcany and Macuhova (1982), showed that wheat yield destined as the proportion of cereals in the rotation increased, and further decline was seen over the duration of study.