سامية محمد مصطفى

شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

سامية محمد مصطفى

شبكة المعلومات الجامعية

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التوثيق الالكتروني والميكروفيلم

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سامية محمد مصطفى

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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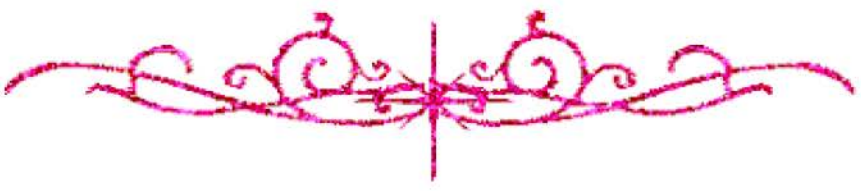

سامية محمد مصطفى

شبكة المعلومات الجامعية

بالرسالة صفحات لم ترد بالأصل

BIOCHEMICAL STUDIES ON WHEAT PLANT

BY

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THESIS

Submitted in partial fulfillment of the

Requirements for the degree of

DOCTOR OF PHILOSOPHY

IN

Agricultural Biochemistry
Department of Biochemistry
Faculty of Agriculture
Cairo University

2004

APPROVAL SHEET

Title: Biochemical Studies on Wheat Plant.

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Branch **Approval :** 12/7/2004

(Cairo Univ. Press. 1524-1984-5000ex/)

ABSTRACT

Calcareous soils characterized by increasing pH and calcium carbonate values which negatively affected on macro-and micronutrients availability needed for plants.

Therefore, two field experiments were carried out at Nubaria Agricultural Experimental station, agricultural Research center (ARC) during the two successive seasons.

The following results were obtained.

1- Yield and yield components :

a- Grain yield / feddan and 1000 grain weight were significant increased with sulphur supply.

b- Yields and yield components were increased with different applied micronutrients.

c- Grain and straw yields and grain index were significantly affected with micronutrients application under applied sulphur treatments by seed coating method.

2- Photosynthetic pigments :

a- Chlorophyll a,b, total and carotenoids contents were increased with sulphur application.

b- All applied microntrients induced significant increments of chlorophyll a,b, total and carotenoids contents.

c- All photosynthetic pigments contents increased with different micronutrients under sulphur application.

3- Enzyme activities :

a- polyphenol oxidase and peroxidase enzyme activities were slightly and insignificantly increased by suphur application.

b- The activities of polyphenol oxidase, peroxidase and catalase enzymes were significantly increased with all studied micronutrients application.

c- Peroxidase and catalase enzyme activities in wheat flag leaf were significnatly increased with sulphur application under different micronutrients application.

4- Mineral concentrations :

a- Sulphur application caused insignificant increases for N,P,K, Mn, Cu concentrations, wherease Zn, Fe conecntration of flag leaf was significantly affected.

b- There were significant and positive responses to Zn, Mn, Fe and Cu applications for N, Zn, Mn and Fe concentrations of flag leaves and N, Zn and Cu concentrations of grains.

c- Nitrogen, Zn, Mn, and Fe concentratins of wheat flag leaf were significantly increased by the interaction effects between sulphur and different micronutrients application, wherease P,K and Cu concentration were insignificantly affected.

5- Carbohydrate fractions :

a- Total corbohydrates, total soluble and non soluble sugars as well as reducing and non reducing sugars were slightly affected with sulphur.

b- Total carbohydrates, non soluble sugars and reducing sugars were slightly and insignificantly affected by different micronutrient applications.

c- Total corbohydrates, total soluble and non soluble sugars as well as reducing and non reducing sugras were slightly

6- Crude protein, free and total amino acids and gluten contents :

a- All studied parameters increased with sulphur supply except gluten hydration percentages which was decreased.

b- Crude protein, total and free amino acids and gluten (wet and dry) were significantly increases with all micronutrients application.

c- Total and free amino acids and gluten fraction were insignificantly affected by the interaction effect between sulphur and micronutrients application.

7- Amino acids composition :

a- All amino acids (essential and non essential) were increased with sulphur supply.

b- All amino acids were increased with different micronutrient applications.

c- The superior interaction treatment for raising all amino acids (essential and non essential).

8- Amino acids percentages :

a- The amino acids (essential and non essential) precentages had no clear effect by all different sulphur of micronutrients treatments and their combinations.

Generally, we advice the farmers to apply elemental S (10gS/kg seeds) and iron nutrient (0.3 g Fe/kg seeds) by seed coating method to produce the highest yield.

ACKNOWLEDGEMENT

It gives me immense pleasure to express my deep sense of gratitude to **Prof. Dr. Omar Abdel Aziz Shaban,** Prof. of Biochemistry, Faculty of Agriculture, Cairo University, for his supervision, valuable guidance, encouragement, helpful suggestion, continuous support throughout the course of this investigation and help during the writing of thesis .

Deep thanks to **Prof. Dr. Ahmed Osman Mohamed Osman,** Head Researcher, Plant Nutrition Research Section, Soil, Water and Environment Research Institute, for his supervision, valuable suggestion, advice, encouragement, helpful and faithfully care.

I wish to thank all the staff members of Plant Nutrition Section, Agriculture Research Center, for their helps and all facilities they offered.

I would like to express my deepest gratitude to all those who contributed in any way to fulfill this investigation.