

بسم الله الرحمن الرحيم





شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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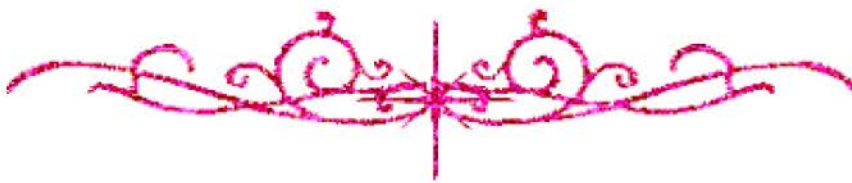
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بالرسالة صفحات
لم ترد بالأصل



Effect of irrigation water quality and some practices of organic farming on crop productivity, quality and soil fertility

Submitted By

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A thesis submitted in Partial Fulfillment

Of

The Requirement for the Doctor Degree

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2021



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا
إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ

صدق الله العظيم
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ABSTRACT

Three field trials were conducted at Al-Betaia village – Mashtoul El-Souk District –Sharqia Governorate during two successive winter seasons (2016-2017, 2017-2018). The main objective of this study is detecting the effect of irrigation water quality and some practices of organic farming on wheat (*Triticum aestivum* L.) crop productivity, quality and soil fertility.

The three experiments included the same treatments which were arranged in split-split plot design including three rates of spraying algae extract (zero, 0.50, 0.75 cm/l), three doses of compost fertilizer (zero, 6, 8 ton/fed.) and two rates of bio fertilizer (zero, cerialine + phospharine + potassium dissolving bacteria). Wheat plants were sown in the three sites. The first site was irrigated using potable water (Nile water) where the second site was irrigated with underground water, The third site was irrigated using the agricultural drainage water. At the same area wheat plants were cultivated on isolate experiment included the recommended NPK fertilizer to evaluate such treatments for the productivity of wheat crop from the practical point of view.

The most important results could be summarized in both seasons as follows:

- 1- In most cases, grain yield and yield components of wheat plants were responded significantly, where the highest value of such treatment resulted in the highest grain yield and best yield components. The result of this study improved that the triple treatment of 0.75 cm/l as algae extract spray, 8 ton/fed. of Compost fertilizer in the presence of bio fertilizer was superior comparing the other treatments.
- 2- The results obtained from applying the recommended NPK fertilizer were relatively near to those obtained from the triple treatment of 0.75 cm/l as algae extract spray, 6 or 8 ton/fed. of compost fertilizer in the presence of bio fertilizer.
- 3- Nutrient contents of N, P and K elements in grain and straw of wheat were increased in most cases according to high levels of such treatments comparing to the control ones.

- 4- The obtained results in two growing seasons were the best when wheat plants were irrigated by Nile water in comparison with the other two sources (underground and agricultural drainage water) .
- 5- Some chemical properties of the alluvial soil under study including organic matter content, soil salinity and the degree of acidity (PH) were estimated towards the safe state compared to its values before conducting the three experiments through the two growing seasons

Key words: Irrigated water quality- Compost- Bio fertilizer- Algae extracts.

List of Contents

Title	Page No.
ABSTRACT.....	I
List of Contents	III
List of Tables.....	V
List of Figures	XI
1.INTRODUCTION	1
2. REVIEW OF LITERATURE.....	4
<i>2.1. Effect of foliar application as (algae extract) on:</i>	<i>4</i>
2.1.1. Yield and yield components:.....	5
2.1.2. plant nutrients and protein:.....	7
<i>2.2. Effect of organic fertilizers application :.....</i>	<i>8</i>
2.2.1. Yield and yield components	9
2.2.2. plant nutrients and protein:.....	13
2.2.3. Some Soil chemical properties:	15
<i>2.3. Effect of bio-fertilizers :</i>	<i>20</i>
2.3.1 Yield and yield components	22
2.3.2 Plant nutrients and protein:	27
2.3.3. Some Soil Chemical properties:	29
<i>2.4. Effect of chemical fertilizer:.....</i>	<i>31</i>
2.4.1. Yield and yield components	31
2.4.2. Plant nutrients and protein.....	32
2.4.3. Some Soil Chemical properties:	34
3. MATERIALS AND METHODS.....	35
<i>3.1. The experimental design</i>	<i>35</i>
<i>3.2. Sampling technique.....</i>	<i>38</i>
3.2.1. Yield component parameters :-.....	38

3.2.2. Yield	38
3.2.3. Soil sampling.....	39
3.2.4. Methods of Soil analysis.....	39
3.2.5. Water analysis	40
3.3. Statistical analysis	41
4. RESULTS AND DISSCUSSION	42
<i>4.1 Effect of spraying wheat plant with algae extract and soil application of compost and biofertilizer under different irrigation water qualities on wheat production.....</i>	<i>42</i>
4.1.1. Yield components.....	42
4.1.1.1. Plant height (cm)	42
4.1.1.2. Number of spikes /m ²	48
4.1.1.3. Number of grains/spike.....	53
4.1.1.4. Grains weight/spike (g)	59
4.1.1.5. Weight of 1000 grain (g)	63
4.1.2 Yield	69
4.1.2.1. Grain yield (kg/fad)	69
4.1.2.2. Straw yield (kg/fad)	78
4.1.2.3. Biological yield (kg/fad).....	83
4.1.3. Harvest index %	87
4.2. Plant nutrients:.....	93
4.2.1. N , P ,K and protein percentage in wheat plants:-	93
4.2.1.1 N , P ,K% in wheat grains:.....	93
4.2.1.2 N , P ,K% in wheat straw:	104
4.2.1.3 Protein percentage in wheat grains:	114
4. 3. Some soil properties after harvesting:	119
4. 3. 1. Soil available of N,P,K (mgkg ⁻¹) as well as organic matter percentage.....	119
4. 3. 1.1. Soil available of N,P,K (mgkg ⁻¹).....	119
4. 3. 1.2. Soil organic matter percentage.....	187
4. 3. 1.3. soil salinity.....	135
4. 3. 1.4. Soil PH	140
SUMMARY	214
REFERENCES.....	218
الملخص العربي.....	1
المستخلص العربي.....	4

List of Tables

Table No.	Title	Page No.
Table (1):	The Chemical composition of algae extract was given	36
Table (2):	Some physical and chemical analysis of compost was given	37
Table (3):	Some physical and chemical characteristics of the experimental soil in both seasons.	40
Table (4):	Some chemical characteristics of the used experimental water.....	41
Table (5):	Mean values of plant height (cm) as affected by spray of algae extract, compost and biofertilizer under Nile water irrigation source in 2016/2017 and 2017/2018 growing seasons.	45
Table (6):	Mean values of plant height as affected by spray of algae extract, compost and biofertilizer with underground water irrigation source in 2016/2017 and 2017/2018 growing seasons.	46
Table (7):	Mean values of plant height (cm) as affected by spray of algae extract, compost and biofertilizer under agricultural drainage water irrigation source in 2016/2017 and 2017/2018 growing seasons.....	47
Table (8):	Mean values of spikes no. /m ² as affected by spray of algae extract, compost and biofertilizer under Nile water irrigation source in 2016/2017 and 2017/2018 growing seasons.	50
Table (9):	Mean values of spikes no. /m ² as affected by spray of algae extract, compost and biofertilizer with underground water irrigation source in 2016/2017 and 2017/2018 growing seasons.	51
Table (10):	Mean values of spikes no. /m ² as affected by spray of algae extract, compost and bio fertilizer under agricultural drainage water irrigation source in 2016/2017 and 2017/2018 growing seasons.....	52
Table (11):	values of grains no./spike as affected by spray of algae extract, compost and bio - fertilizer under Nile water irrigation source in 2016/2017 and 2017/2018 growing seasons.	56
Table (12):	values of grains no. /spike as affected by spray of algae extract, compost and biofertilizer with underground water irrigation source in 2016/2017 and 2017/2018 growing seasons.	57
Table (13):	values of grains no. /spike as affected by spray of algae extract, compost and biofertilizer under agricultural drainage water irrigation source in 2016/2017 and 2017/2018 growing seasons.....	58
Table (14):	Mean values of grains weight / spike (g) as affected by spray of algae extract, compost and biofertilizer under Nile water irrigation source in 2016/2017 and 2017/2018 growing seasons.....	60

Table (15): Mean values of grains weight / spike (g) as affected by spray of algae extract, compost and biofertilizer with underground water irrigation source in 2016/2017 and 2017/2018 growing seasons.....	61
Table (16): Mean values of grains weight / spike (g) as affected by spray of algae extract, compost and biofertilizer under agricultural drainage water irrigation source in 2016/2017 and 2017/2018 growing seasons.	62
Table (17): Mean values of 1000 grain weight (g) as affected by spray of algae extract, compost and bio fertilizer under Nile water irrigation source in 2016/2017 and 2017/2018 growing seasons.	65
Table (18): Mean values of 1000 grain weight (g) as affected by spray of algae extract, compost and biofertilizer with underground water irrigation source in 2016/2017 and 2017/2018 growing seasons.	66
Table (19): Mean values of 1000 grain weight (g) as affected by spray of algae extract, compost and bio fertilizer under agricultural drainage water irrigation source in 2016/2017 and 2017/2018 growing seasons.	67
Table (20): The relative increase percentage of wheat yield components as affected by main treatments under various irrigation water in the second season.	68
Table (21): Mean values of grain yield (kg/fad) as affected by spray of algae extract, compost and biofertilizer under Nile water irrigation source in 2016/2017 and 2017/2018 growing seasons.	72
Table (22): Mean values of grain yield (kg/fad) as affected by spray of algae extract, compost and bio fertilizer with underground water irrigation source in 2016/2017 and 2017/2018 growing seasons.	73
Table (23): Mean values of grain yield (kg/fad) as affected by spray of algae extract, compost and bio fertilizer under agricultural drainage water irrigation source in 2016/2017 and 2017/2018 growing seasons.	74
Table (24): Mean values of straw yield (kg/fed) as affected by spray of algae extract, compost and bio fertilizer under Nile water irrigation source in 2016/2017 and 2017/2018 growing seasons.	80
Table (25): Mean values of straw yield (kg/fed) as affected by spray of algae extract, compost and biofertilizer with underground water irrigation source in 2016/2017 and 2017/2018 growing seasons.	81
Table (26): Mean values of straw yield (kg/fed) as affected by spray of algae extract, compost and bio fertilizer under agricultural drainage water irrigation source in 2016/2017 and 2017/2018 growing seasons.	82
Table (27): Mean values of biological yield (kg/fad) as affected by spray of algae extract, compost and biofertilizer under Nile water irrigation source in 2016/2017 and 2017/2018 growing seasons.	84