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شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم



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شبكة المعلومات الجامعية



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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**Ecological studies on the Nile tilapia;
Oreochromis niloticus cultured in different
aquatic habitats**

A Thesis Submitted

By

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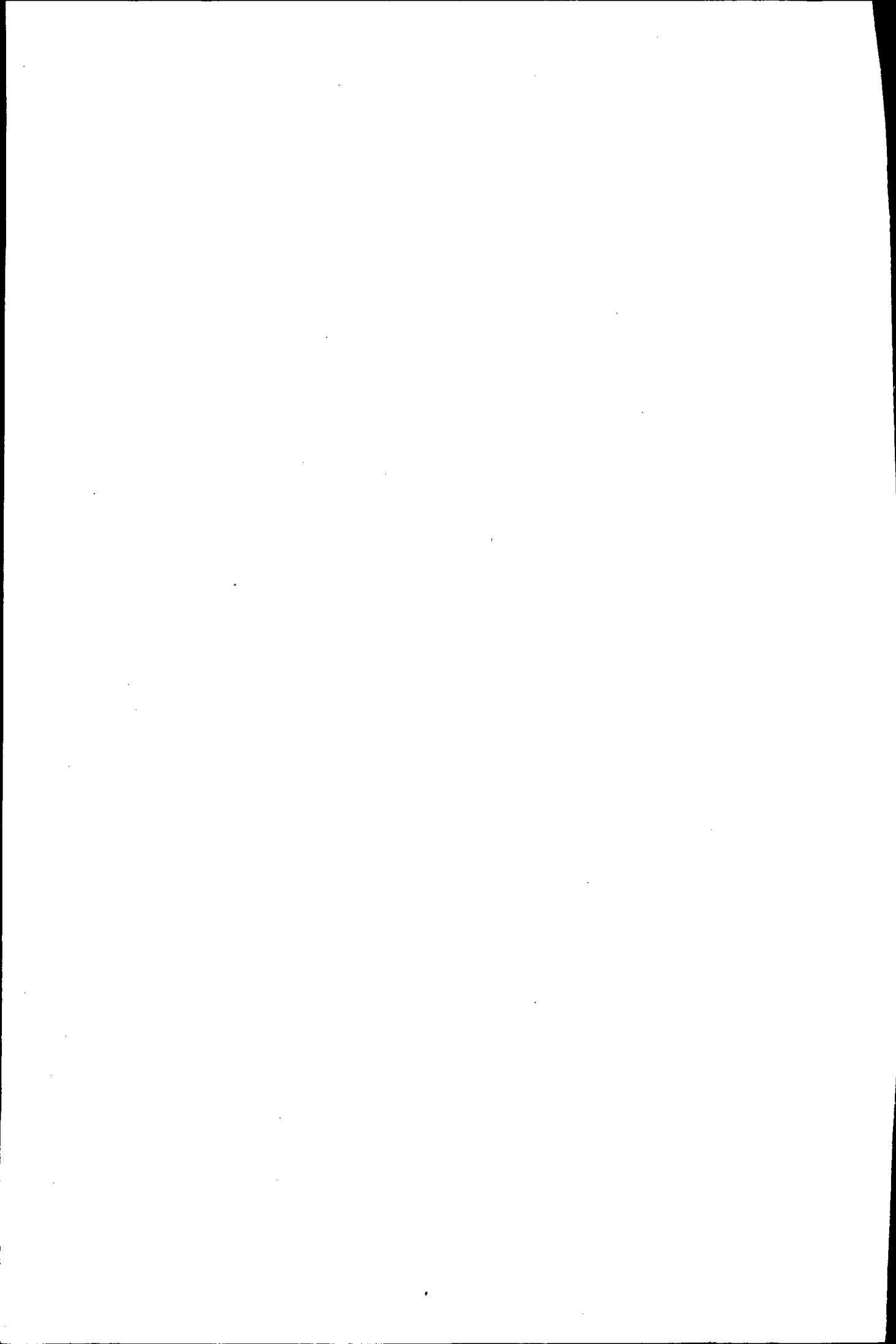
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ABSTRACT

The aquatic habitat with its water quality is considered the main factor controlling the state of health and disease in both cultured and wild fish. In the present investigation the effect of water quality on the quality of the Nile tilapia, *Oreochromis niloticus*, has been studied. For that purpose the fish were collected from three different aquatic habitats: the River Nile in the vicinity of Cairo at 15 km downstream north of the industrial zone of Helwan, El-Abbassa freshwater fish farm and the brackish water farm at El-Fayoum. Physico-chemical characteristics of water collected from the different water bodies showed highly significant differences in the dissolved oxygen, pH, salinity, total hardness, total alkalinity, electric conductivity, total phosphorus and nitrate with the highest values in water collected from El-Fayoum brackish water Farm, except for the dissolved oxygen which was slightly higher in the River Nile than that of the farms. Moreover, concentrations of the heavy metals (Fe, Cu, Zn and Mn) were significantly higher in water collected from both fish farms than that collected from the River Nile, except for zinc which was higher in water collected from the River Nile.

Phytoplankton showed the highest density in the freshwater farm at El-Abbassa and the highest zooplankton density was recorded in the brackish water farm at El-Fayoum. However, water collected from the River Nile in the vicinity of Cairo showed much lower density of both phyto and zooplankton.

Fish collected from the River Nile had lower values of the red blood cell count, haemoglobin content, packed cell volume and serum total lipids but higher white blood cell count and serum; glucose, total protein, AST, ALT, creatinine and uric acid than fish collected from both farms. This indicated that Nile tilapia from the farms are superior in quality compared with those from the River Nile.

Bioaccumulation of either of the studied heavy metals in gills, liver, kidneys and muscles of fish collected from the River Nile was much higher than that of fish collected from El-Abbassa and El-Fayoum farms respectively and led to clear damage in tissues of those vital organs.

The results also revealed that the meat quality of fish collected from El-Fayoum Farm was more superior than that of fish collected from El-Abbassa Farm and the River Nile which appeared of lower quality.



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Contents

	Page
I-Introduction and Review of Literature	1
Aim of work	1
II- Materials and Methods	22
III- Results	30
Description of the studied habitats	30
Water quality	30
Water heavy metals	33
Plankton estimation	35
Condition factor (k)	39
Hepatosomatic index	39
Haematological analysis	44
Serum analysis	48
Serum glucose	48
Serum total protein	51
Serum total lipids	51
Serum AST	51
Serum ALT.....	51
Serum Creatinine	54
Serum uric acid	54
Serum electrolytes	54
Chemical muscle composition	57
Muscle water content	57
Muscle total protein	57
Muscle total lipids	57
Muscle ash	60
Muscle electrolytes	60

Residual heavy metals	63
Histopathological studies	63
IV- Discussion	76
V- Summary	93
VI- References	98
VII- Arabic Summary	

List of Tables

	Page
Table (1): Physicochemical properties of water collected from different aquatic habitats.....	31
Table (2): Average counts of different components of phytoplankton and zooplankton (org./l) in water samples collected from different aquatic habitats.....	36
Table (3): Average total weight, total length and condition factor of the Nile tilapia; <i>Oreochromis niloticus</i> collected from different aquatic habitats.....	40
Table (4): Hepatosomatic index and liver water content of the Nile tilapia; <i>Oreochromis niloticus</i> collected from different aquatic habitats.....	42
Table (5): Blood parameters of the Nile tilapia; <i>Oreochromis niloticus</i> collected from different aquatic habitats	45
Table (6): Serum constituents of the Nile tilapia; <i>Oreochromis niloticus</i> collected from different aquatic habitats	49
Table (7): Serum electrolytes of the Nile tilapia; <i>Oreochromis niloticus</i> collected from different aquatic habitats	55
Table (8): Muscle quality of the Nile tilapia; <i>Oreochromis niloticus</i> collected from different aquatic habitats	58
Table (9): Muscle electrolytes (mg/kg dry weight) of the Nile tilapia; <i>Oreochromis niloticus</i> collected from different aquatic habitats.....	61
Table (10): Iron concentrations in some selected organs (mg/kg dry weight) of the Nile tilapia; <i>Oreochromis niloticus</i> collected from different aquatic habitats.....	64

	Page
Table (11): Copper concentrations in some selected organs (mg/kg dry weight) of the Nile tilapia; <i>Oreochromis niloticus</i> collected from different aquatic habitats.....	66
Table (12): Zinc concentrations in some selected organs (mg/kg dry weight) of the Nile tilapia; <i>Oreochromis niloticus</i> collected from different aquatic habitats.....	68
Table (13): Manganese concentrations in some selected (mg/kg dry weight) of the Nile tilapia; <i>Oreochromis niloticus</i> collected from different aquatic habitats.....	70