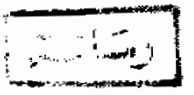
STUDIES ON THE BIOCHEMICAL COMPOSITION OF FISH FLESH AND BLOOD CHARACTERISTICS OF SOME FISHES LIVING IN SOME POLLUTED AREAS IN THE RIVER NILE

THESIS

Sumbmitted for the partial fulfillment of the Master Degree in Biochemistry



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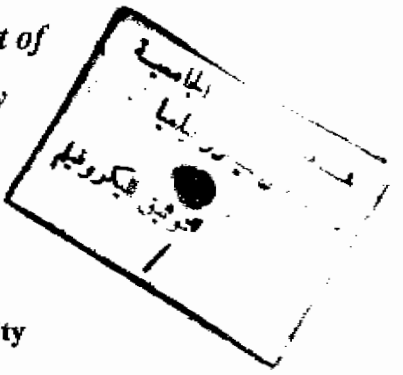

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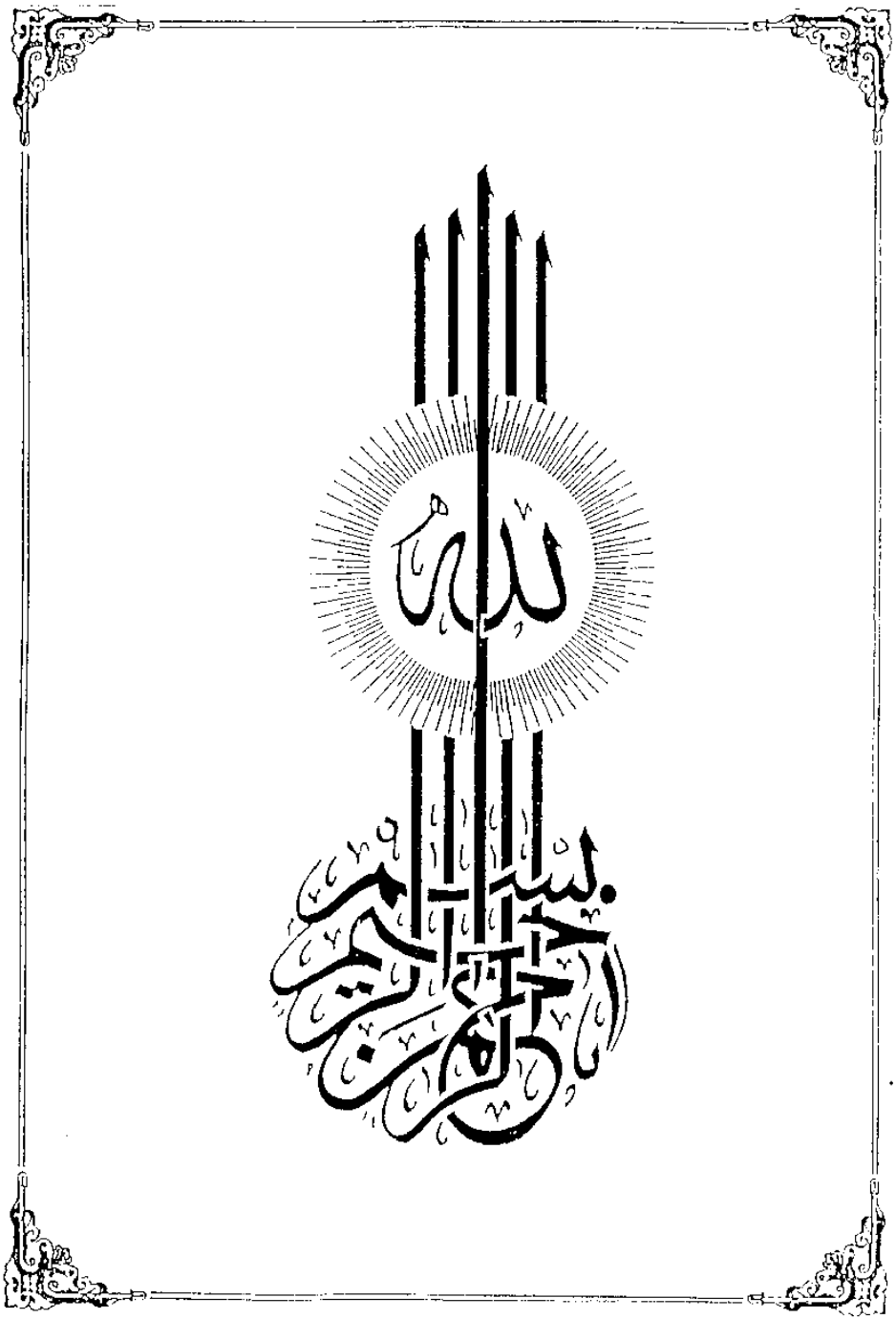

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ACKNOWLEDGMENTS

I would like to express my deepest gratitude and appreciation to professor . Dr. Eisa Ahmed Eisa prof. of biochemistry Faculty of Science, Ain Shams University for his supervision and guidance.

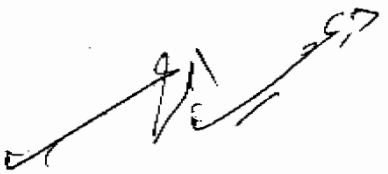
My thanks and appreciation to professor. Dr. Mahmoud El - Sabbagh. prof. of biochemistry Faculty of Science Ain Shams University for his guidance and supervision.

I wish also to express my deepest gratitude and appreciation to professor Dr. Hamed. Hamed Saleh head of Fresh Water and Lakes Department. National Institute of Oceanography and Fisheries Ministry of Scientific Research and Technology for his supervision and help.

My cardial thanks to Dr. Hala M.El-Dessouky lecturer of biochemistry Faculty of Science Ain Shams University for her current helpfull and guidance throughout all this work.

My deepest gratitude and appreciation to professor Dr. Waheb labib prof. of Rearing Fish National Institute of Oceanography and Fisheries for facilitating this work to be accomplished.

More over , I wish to express my deepest appreciation to all members of Inland Water and Fish Culture Branch of the National Institute of Oceanography and Fisheries manily in Barrage Fish Farm.



ABSTRACT

The present study includes the effect of different concentrations of industrial waste water from (Iron - Steel Factory and Soap - Oil Factory) which drained directly in the River Nile and its branches on biochemical composition and blood characteristics of two species of fresh water fishes (Tilapia nilotica and Clarias lazera). The results of biochemical analysis of fish flesh after 1,2 and 3 weeks of exposure to the industrial waste water from the two factories showed a disturbance in the main componants of fish flesh (protein - fat - ash and water contents) in both species of fishes. Also the results of biochemical analysis of fish blood showed a significant increase in serum total proteins, total lipids, s. GOT, s. GPT, s. alkaline phosphatase, urea and creatinine. Serum glucose levels also showed a significant increase in both species of fishes.

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AIM OF THE WORK

Within recent years some areas of River Nile have become polluted by a variety of substances that include, heavy metals, a griculture chemicals sewage and industrial wastes. So the present work was aimed to study two main problems: Firstly , what are the effect of some industrial waste water drained in the River Nile in the vicinity of Cairo from two important factories in Egypt (Iron-Steel Factory and Soap-Oil Factory) on survival, behaviour, biochemical changes on blood and approximat composition (protein - fat - ash - water content) of the body of the fresh water fishes Tilapia nilotica and Clarias Lazera ? Secondry, in what extent is the possible danger on man , who consumes these two industrial wastes contaminated fishes as a source of protein food mostly utilized by majorityof Egyption peoples. ?

ABBREVIATIONS

B.O.D	:	Biochemical oxygem demand.
C.O.D	:	Chemical oxygen demand.
C^o	:	Degree centigrate.
C.L	:	Clarias lazera.
Conc	:	Concentration .
dl	:	100 ml
D.O	:	Dissolved oxygen
D.W	:	Distil water
g	:	gram
L	:	litre.
LC50	:	lethal concentration50.
min	:	Minute.
mg	:	Milligram
N.S	:	Not Significant.
S.E	:	Standard error.
S.GOT.	:	Serum glutamate oxaloacetate transaminase.
S.GPT.	:	Serum glutamate pyruvate transaminase.
St.	:	Standard.
T.n	:	Tilapia nilotica.
U mol.	:	Micromol.
Wt.	:	Weight .
%	:	Percent.

I INTRODUCTION

Introduction

Pollution is deemed one of the most important problems that emerged in our civilized world in Egypt. The problem of environmental pollution has received considerable attention of both the public and official bodies in the present decade. In recent years public alarm raised about the pollutions of the River Nile and other native water sources. Waste products of many factories e.g soap-oil, textile, papers, plastic, iron-steel , petroleum and food industries are the main sources of water pollution. These are either directly pumped or seep into the waste ways. Water pollution is very dangerous not only for the damage it causes to the environment, but also for the fatel effect, it causes to all living organisms.

The principal hazard to public health from polluted stream is the presence of pathogenic bacteria from domestic sewage. In rare cases the presence of acids and other industrial wastes in streams has been beneficial because they serve to inactivate pathogenic and other bacteria resulting from the disposal of untreated sewage. (*Windle, Taylar, 1978.*) .

Bilharziasis one of the most dangerous disease in a developing areas, in which polluted water plays a major role in its transmission.(*Southgate, et al., 1976*)and(*Benarde, 1970.*) Danger to