



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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التوثيق الإلكتروني والميكروفيلم

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"Control of some infectious diseases affecting cultured *Pangasius*"
Spp. by recent bioproducts application

A thesis submitted by
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For the degree of Ph.D.
(Aquatic Animal Medicine and Management)

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

وَأَنْ لَّيْسَ لِلْإِنْسَانِ إِلَّا مَا سَعَى

(٣٩) وَأَنَّ سَعْيَهُ سَوْفَ يُرَى

(٤٠) ثُمَّ يُجْزَاهُ الْجَزَاءَ الْأَوْفَى

(٤١)

صدق الله العظيم

(سورة النجم)



Supervision sheet

**Control of some infectious diseases affecting cultured
Pangasius Spp. by recent bioproducts application**

Ph.D Thesis

In

(Aquatic Animal Medicine and Management)

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ABSTRACT

The present study aimed to identifying the main bacterial agent causing disease problem among *P.hypophthalmus* fish in semi intensive and intensive fish farms in Egypt and to assessment the efficacy of nucleotides (Nucleoforce™) on growth, hematological, non-specific immunological parameters and disease resistance in *pangasius hypophthalmus* fish.

This study was conducted on 70 diseased *Pangasius hypophthalmus* fish collected from different *Pangasius* fish farms in Egypt. Bacteriological examination revealed the isolation of *Pseudomonas aeruginosa* that was biochemically confirmed using MALDI-TOF MS and VITEK 2 compact system. The prevalence and virulence of *Pseudomonas aeruginosa* were estimated genotypically using species specific 16S rDNA gene, *OprL* and *ToxA* virulent genes for detection of pathogenic strains followed by sequencing analysis. Pathogenicity of isolated *Pseudomonas aeruginosa* was confirmed by experimental intraperitoneal injection of healthy *Pangasius hypophthalmus* with positively virulent strains resulting in high mortalities among injected fish. Dietary nucleotides were incorporated in diet at different concentrations; group I control, group II 250 g/ ton diet and group III 500 g/ ton diet for 8 weeks. At the end of feeding trial, weight gain and specific growth rate (SGR) were recorded. Results showed that there was a significant increase in WG, SGR in fish groups received diet supplemented with nucleotides in comparison with the control

group. Haematogram indices showed a significant elevation in RBCs count, HB value, WBCs and leukocytic count. Biochemically, High super oxide dismutase (SOD) activity, total protein and globulin levels were recorded in fish fed on 500g/t nucleotide (NT). Immunologically, Lymphocytic proliferation activity, Nitric oxide concentration and Serum lysozyme activity were continuously increased in 250g/t and the 500g/t NT treatment groups along feeding duration.

In conclusion, the supplementation of fish diet with nucleotides in concentration of 500g/t nucleotide can improve the general health status of *P. hypophthalmus* via increasing the disease resistance against *P. aeruginosa*.

Keywords: Nucleoforce™, *pangasius hypophthalmus*, Hematogram, immunological parameters, *Pseudomonas aeruginosa*.

Acknowledgements

First of all, I wish to express my sincere gratitude to "ALLAH" who gives me life, Islam, and all things that make me able to finish this work,

*I would like to express my sincere gratitude and deepest appreciation to **Prof. Dr. Mohamed Moustafa** Prof. of Aquatic Animal Medicine and Management, Faculty of Vet Med. Cairo University, for his helpful, supervision and facilities offered throughout the course of this work,*

*I would like to express my sincere gratitude and deepest appreciation to **Prof. Dr. Mohamed abdl –Aziz** Prof. of Aquatic Animal Medicine and Management, Fac. of Vet. Med. Cairo University, for his supervision, guidance, his kind help and suggested me such an interesting issue followed by drawing a very fine scheme.*

*Words cannot adequately express the feelings of gratitude I have for **Dr. Dalia Ashraf** Lecturer of Aquatic Animal Medicine and Management for precious advices for her kind supervision, advice, and help during the progress of this work,*

*I would like to record my cordial thank to **Dr. Elsayed Abd Elhy Elsayed** researcher of Fish diseases and management desert research center, for his kind supervision, advice and gentle support.*

*Special appreciation goes to Prof. **Dr. khaled nasr** Prof. of Clinical Nutrition , Faculty of Vet Med. Cairo University, for his assistance and helpful guide in nutrition of fish during the experiment.*

*Many thanks are also extended to all the staff members of the Animal health, Especially **Dr. Islam Wassif** and **Dr. Marwa fawzy** , Desert reaserch center for their kind help.*

Finally I would like to thank all my family for their encouragement.

LIST OF CONTENTS

Chapter number	Item	Page No
1	Introduction	1
2	Review of literatures	4
3	Published Researches	
	(1) Phenotypic and Genotypic characterization of pathogenic <i>pseudomonas aeruginosa</i> isolated from cultured <i>Pangasianodon hypophthalmus</i> in Egypt.	41
	(2) Efficacy of Dietary Nucleotides (Nucleoforce™) on growth, haemato-immunological response and disease resistance in <i>Pangasianodon hypophthalmus</i> fish (Sauvage, 1878) in Egypt	56
4	Discussion	76
5	Conclusion	89
6	Summary	90
7	References	94
Arabic Summary		١

LIST OF TABLES

Table No.	Titles Published Researches	Page No.
1	Nucleotide primer sequences of <i>P. aeruginosa</i> Target genes	43
2	Thermocycling conditions of used primers	43
3	VITEK 2 compact system Biochemical profile of <i>Pseudomonas aeruginosa</i>	45
4	Prevalence of <i>P. aeruginosa</i> infection in different fish farms in <i>P.hypophthalmus</i> fish	45
5	Prevalence of isolation of <i>P. aeruginosa</i> from different organs	45
6	Physical and chemical compositions of basal <i>Pangasianodon</i> fish diets.	59

7	Growth rate, weight gain, specific growth rate and feed conversion ratio of <i>Pangasius</i> fish in Nucleotides supplemented groups.	61
8	Hematogram (Hb, RBCs, Total WBCs, PCV, Lymphocytes, Monocytes and Heterophils) and biochemical indices (Total protein, ALT, AST, urea and creatinine) of Nucleotides supplemented groups before and after challenge with <i>Ps. aeruginosa</i> .	61
9	Superoxide dismutase (SOD) activities of Nucleotides supplemented groups on 4 th and 8 th week before challenge and after challenge with <i>P. Aeruginosa</i>	63
10	Lysozyme activity, Nitric oxide concentration and Lymphocyte proliferation activity of Nucleotides supplemented groups on 4 th and 8 th week before challenge and after challenge with <i>P. aeruginosa</i> .	64
11	Mortality percent of <i>Hypophthalmus</i> challenged with <i>P. aeruginosa</i> for 7 days	64

LIST OF FIGURES

Figure No.	Titles Published Researches	Page No.
1	<i>Pangasianodon hypophthalmus</i> (Mekong Delta, Vietnam)	6
2	<i>Pangasius bocourti</i> (Mekong Delta, Vietnam)	6
3	<i>Pangasianodon hypophthalmus</i> (Egypt)	7
4	Nucleotide structure.	25
5	Digestion and absorption of dietary nucleotides (Hess & Greenberg, 2012).	25
6	PCR products on agarose gel electrophoresis appeared as (A) positive amplicons of 16srDNA gene of <i>P.aeruginosa</i> at 956bp. (B) <i>ToxA</i> virulent gene at 352 bp. and (C) <i>OprL</i> positive virulent gene at 504bp.	38

7	Histopathological changes in infected <i>p.hypophthalmus</i> fish.	47
8	Clinical signs of <i>p.hypophthalmus</i> fish challenged with pathogenic <i>p.aeruginosa</i>.	63