

# بسم الله الرحمن الرحيم



-C-02-50-2-





شبكة المعلومات الجامعية التوثيق الالكتروني والميكرونيلم





## 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



يجب أن

تحفظ هذه الأقراص المدمجة يعيدا عن الغيار







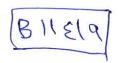
بالرسالة صفحات لم ترد بالأصل











Suez Canal Univ. Fac. of Vet Med. Dept. of Poultry and Fish diseases

### STUDIES ON ANASAKIASIS AMONG SOME MARINE FISHES

Thesis presented by

Fatma El-Zahra Mohamed Hassan B.V.Sc. 1980, Zag. Univ. Dipl. of Clin. Patho.,1985 Dipl. of Fish Diseases and Management, 1995

FOR THE DEGREE OF MASTER OF VET. MEDICAL SCIENCE (Fish Diseases and Management)

Under supervision of

Prof. Dr.

Ismail A. M. Eissa

Prof. of Fish Diseases and head Dept. of Poultry and Fish Diseases Faculty of Vet. Medicine Suez Canal University Prof. Dr. Badran

Ahmed F. H. Badran

Prof. of Fish Diseases Faculty of Vet. Medicine Suez Canal University

Submitted to

Faculty of Veterinary Medicine Suez Canal University

(1997)

Suez Canal University
Faculty of Veterinary Medicine
Department of Avian and Aquatic
Animal Diseases

#### APPROVAL SHEET

This is to approve that the thesis Presented by Fatma El-Zahra Mohamed Hassan to the Faculty of Veterinay Medicine, Suez Canal University entitled (Studies on Anisakiasis among some marine fishes) for the degree of M.V.Sc has been approved by the examining committee on November 1997 Committee members:

Prof. Dr. \ Abd El-Monem Ahmed Salem

Prof. Dr. of Animal and Fish Medicine

Faculty of Vet. Med., Cairo Univ.

Prof. Dr. | Mohamed Adel Abbas

Prof. of Parasitology, Head Department of Animal production, National Research Center.

Prof. Dr. | Ismail Abd El-Monem Eissa

Head Dept. of Avian and Fish Diseases,

Fac. of Vet. Med., Suez Canal Univ.

Prof. Dr. \ Ahmed Fekri Husseen Badran

Prof. of Fish Diseases and Management, Dept. of Avain and Fish Diseases, Fac. of Vet. Med.,

Suez Canal Univ.

signature

M OIP Abbaz

Jameil Cissa

A.F. Badran

Dated on November, 1997



#### **ACKNOWLEDGMENTS**

Sincere thanks and grateful are offered to Professor Dr. Ismail A.M. Eissa, Professor of Fish Diseases and head of Department of Poultry and Fish diseases ,Faculty of Veterinary Medicine ,Suez Canal University for his kindly assistance ,his valuable advisees the opportunity to examine a prepublication copy of the manuscript and for giving helpful suggestions during this research .

I am very pleased to acknowledge Professor Dr. Ahmed F.H. Badran, Professor of Fish Diseases, Faculty of Veterinary Medicine, Suez Canal University for his skillful technical assistance ,practical knowledge and reviewing of this manuscript.

I am indebted to both who without their efforts, interest and generosity I could not have the ability to cover the subject matter as completely and as thoroughly as desired ,to them I extend my great thanks, a lot of thanks also are going to the staff members of the Department in addition to the tenchicans for their assistance and kindly help during this work.

#### **CONTENTS**

	Page
I. INTRODUCTION	1
II. LITERATURE	3
III. MATERIAL AND METHODS	23
IV. RESULTS	29
V. DISCUSSION	58
VI. SUMMARY	66
VII. REFERENCES	69
ARABIC SUMMARY	

#### LIST OF TABLES

Table	(1): Showing the prevalence of isolated Anisakid nematodes	
	among the examined marine fish species.	32
Table	(2): Seasonal prevalence of Anisakid nematodes among some marine fish species.	33
Table	(3): Prevalence of isolated Anisakid nematodes in different seasons in Hake fish (Saurus tumbil).	35
Table	(4): Prevalence of isolated Anisakid nematodes in different seasons in Seabream (Sparus aurata)	36
Table	(5): Prevalence of isolated Anisakid nematodes in different seasons in Sardine fish (Sardina pilchardus)	37
Table	(6): Range of isolated Anisakid nematodes in some marine fish species.	39
Table	(7): The average body weight of examined fish species in relation to percentage of infestation with Anisakid nematodes.	40

#### LIST OF FIGURES

Fig. (1): Coiled larvae of Anisakis simplex in body cavity of Saurus	
tumbil (Hake fish ).	42
Fig.(2): Showing major magnification of Anisakis simplex larvae in	
body cavity of Saurus tumbil (Hake fish).	43
Fig.(3): Showing the ventriculus of Anisakis simplex larva.	44
Fig.(4): Cephalic extremity of Anisakis simplex larva.	45
EP = Excretory pore.	
Fig.(5): Ventriculus of Anisakis simplex larva.	46
Fig.(6): Annulation on cuticle at the median part of the body of	47
Anisakis simplex larva.	
Fig.(7): Posterior end of Anisakis simplex larva.	48
Fig.(8) :Larva of Hysterothylacium spp in body cavity of Sparus aurat	
(Seabream ) fish.	49
Fig.(9): Male and female larvae of Hysterothylacium spp.	50
Fig.(10):Larva of Hysterothylacium spp. Showing ventricular zone	
,intestinal caecum and ventricular appendix.	51
Fig.(11): Cephalic end of Hysterothylacium spp.	52
Fig.(12): Posterior end of Hysterothylacium spp.	53
Fig.(13): Coiled larvae of Pseudoterranova spp. in abdominal cavity	
of Saurus tumbil (Hake fish).	54
Fig.(14) : Embedded larvae of Pseudoterranova within the muscles of	55
Saurus tumbil (Hake fish).	
Fig.(15): Ventricular zone of larva of Pseudoterranova spp.	56
Fig.(16) Anterior end of Contracaecum spp.	5



#### I. INTRODUCTION

The aquatic environment itself appears to play an important role in the development of parasitic affections. Many parasites clearly associate their life histories with this type of environment. Developmental stages of many trematodes ,cestodes and nematodes require the conditions encountered in this environment to proceed and complete their life cycles (Takashi et al. 1986)

The worldwide increase in fish production has increased the prevalence and importance of fish diseases. The parasitic diseases especially have become very important with the development of fish cultures in regions without a tradition of fish production with the import, export and exchange of commercial fish for breeding and culture between different countries and continents with the introduction of various forms of intensive fish culture and industrial breeding.

Nematodes are common parasites not only in freshwater fishes ,but also they constitute a significant part of parasitism in wild marine and brackish water fishes . In addition ,the rapid development of marine aquaculture during recent years , makes their importance as fish pathogens is increasing . Probably , the most important group of nematode parasites of marine fish are the so called "Anisakid " worms members of the family Anisakidae of the order Ascarididae (Sindermann ,1990) .

In some regions, fish nematodiasis also represents an important public health problem because fish may be considered as a source of the serious nematodes affecting man as for example anisakiasis (Smith, 1983).

The presence of Anisakis species larvae in food fish achieved public health significance ,consumption of live larvae with raw or inadequately cooked fish lead to eosinophilic granuloma in the alimentry tract of man (Smith and Wootten, 1975)

As Hake fish ,Seabream ,Mullet and Sardine fishes are popular fishes with high quality marine ones in Egypt .The aim of the present study was directed to such species and concentrated to investigate the following :

- -Prevalence of the intensity of Anisakid nematodiasis and seasonal variation in marine fishes.
- Clinical and postmortem features of diseased fishes.
- -Isolation and identification of the parasites causing Anisakiasis in diseased marine fishes
- -Relationship between rate of infestation with body weight of diseased marine fishes
- -A trial for destruction Anisakid nematodes in fish.