



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ





شبكة المعلومات الجامعية



شبكة المعلومات الجامعية

التوثيق الالكتروني والميكرو فيلم

جامعة عين شمس

التوثيق الالكتروني والميكرو فيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون أية تغيرات



يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %



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بعض الوثائق الأصلية تالفة



شبكة المعلومات الجامعية



بالرسالة صفحات
لم ترد بالأصل

STUDIES ON FITNESS OF FISH FOR HUMAN CONSUMPTION

Presented

By

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(B.V.Sc , Zagazig University, 1985)

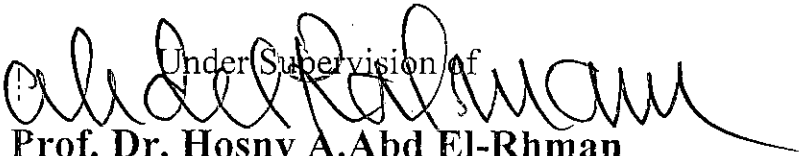
(M.V.Sc Suez Canal University, 1994)

For

Ph. D. In

**Control and Hygiene of Meat, Fish, Their Products and
Animal by Products**

Under Supervision of


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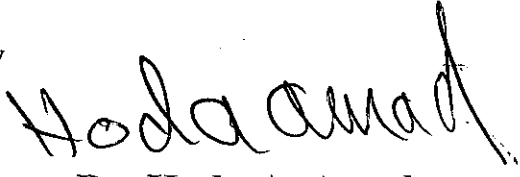
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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

﴿وَهُوَ الَّذِي سَخَّرَ الْبَحْرَ لِتَأْكُلُوا
مِنْهُ لَحْمًا طَرِيًّا وَتَسْتَخْرِجُوا مِنْهُ
حَلِيَّةً تَلْبَسُوهَا وَتَرَى الْفُلَ كَ
مَوَآخِرٍ فِيهِ وَلِتَبْتَغُوا مِنْ فَضْلِهِ
وَلَعَلَّكُمْ تَشْكُرُونَ﴾

صدق الله العظيم

سورة النحل الآية (١٤)

Suez Canal University
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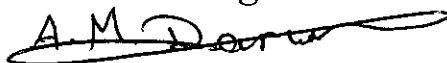
APPROVAL SHEET

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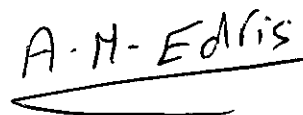
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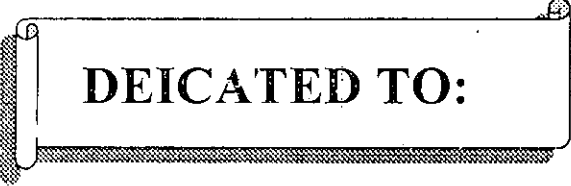
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DEICATED TO:

My Husband

Dr. FATHY

&

My kids

Ahmed, Diana & Mahmoud

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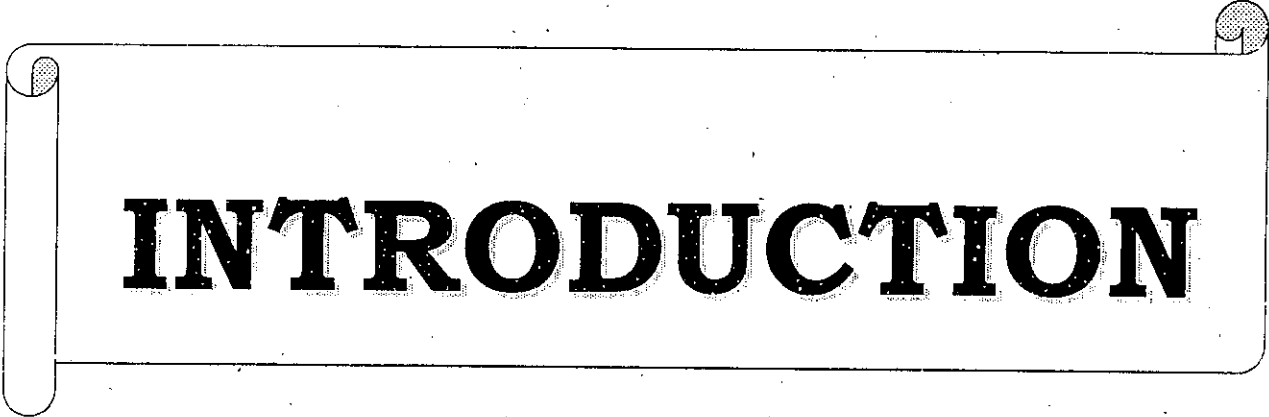
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INTRODUCTION

INTRODUCTION

Fish is considered one of the most important food article which consumed on large scale all over the world. It support the consumer with a high nutritive values protein specially lysine and methionine and good sources of vitamins and minerals. Since the chemical composition can vary widely, not only from fish to fish of the same species but also within an individual fish.

The important of fish flesh in human nutrition lies in the fact that protein content is about 20%, less in fat content ,but a higher proportion of mono-unsaturated or polyunsaturated fatty acids (60-85%). Subsequently, it is thought to be associated with reducing the risk of human cardiovascular disease due to its high content of omega-3-fatty acids which, lower the cholesterol content as well as decreasing the blood clotting activity (**Browne, 1990**).

Fish is prone to rapid microbial spoilage. Its high perishability is attributed to several intrinsic factors which, favour rapid microbial growth namely low collagen and lipid contents and comparatively high levels of soluble nitrogen compounds in the muscle. Fish is subjected to contamination with different microorganisms from different sources during handling , fishing vessel sanitation , processing and storage condition (**Ward and Bay, 1988**) .

Fish is not only highly susceptible to spoilage but is also frequently implicated in the spread of food borne disease. Spoilage of fish and fish products is usually occur as a result of increased numbers of