

## HISTAMINE IN CANNED,SMOKED AND SALTED FISH PRODUCTS

By

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*A total of 150 samples of different fish products included 50 samples from each of canned fishes ( 25 each of Tuna & Mackerel ) , smoked fishes ( 25 each of Salmon & Herring ) and Salted fishes( 25 each of Fesiekh & Sardine ) were collected from different localities of different sanitation levels at Kalyobia Cairo and Giza Governorates .Collected samples were analysed for determination of their pH , histamine levels and bacteriologically for histamine producing bacteria*

*The obtained results revealed that the mean values of pH for each of Tuna , Mackerel , Salmon , Herring ,Fesiekh and Sardine were 6.1, 6.5, 6.1, 6.3, 6.4 and 6.2 , respectively.*

*On the other hand , the mean values of histamine levels measured in the same examined fish products samples were  $10.096 \pm 2.10$ ,  $11.120 \pm 2.49$ ,  $7.548 \pm 1.83$ ,  $14.236 \pm 2.61$ ,  $26.752 \pm 2.94$  and  $29.296 \pm 2.97$  , respectively.*

*In comparison , 44% , 52% , 20 % ,64 % , 100% and 100% of the examined Tuna . Mackerel ,Salmon , Herring ,Fesiekh and Sardine samples contained histamine exceeded the recommended levels by Egyptian Standards ( 1990 , 1991 ,1994, 1995 and 1996 ) ( 10 mg / 100 gm of muscles ) .*

*Clostridium perfringens, Enterobacter aerogenes, Enterobacter cloacae, E. coli, Proteus morgani, P. vulgaris, , Pseudomonas aeruginosa, Klebsiella pneumoniae and Bacillus cereus could be isolated from the examined samples with different percentages.*

*The public health significance of histamine in fish products and methods of prevention were discussed.*

### Introduction

Growth of histamine-producing bacteria on fish products can lead to generation of hazardous levels of histamine in these products.. Freshly caught tuna contains little, if any, histamine in its muscler tissues, but possesses large amounts of free histidine. The spoilage of fish by bacteria that have the enzyme, histidine decarboxylase, leads to formation of a high amounts of histamine. Many bacteria possess histidine decarboxylase, but only a few species have the capacity for producing large quantities of histamine in short periods such as *Proteus morgani*, *Enterbacter aerogenes* , selected strains of *Klebsiella pneumonia* and *Hafnia alvei* have the potential to produce

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