Cairo University
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Determination of heavy metals level in *Mugil cephalus* and *Clarias lazera* fishes

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For the Degree of M.V.Sc.
Hygiene and Control of Meat and its Products

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Abstract

(**Keywords: heavy metals, Clarias lazera, Mugil cephalus, Spectrophotometer)**

Fish are considered as important source of protein, essential minerals, vitamins and unsaturated fatty acids. However, from nutritional and economic point of view, it may be a main source of heavy metals which can counteract their beneficial effects and may cause health hazards for human if consumed for long time. Therefore, eighty fish samples " *Mugil cephalus and Clarias lazera* " were randomly collected from Kafr- El-sheikh governorate, Egypt. Fish samples were collected from different sources (markets, captures and farms) and were analysed for heavy metals residues (Total Mercury, Lead, Cadmium and Zinc) in their flesh using Atomic Absorption Spectrophotometer (AAS). Fish samples collected from market revealed that the percent of samples exceeded the safe permissible limits for Hg, Pb and Cd that established by EOSQC (2010) were 35, 20 & 20% and 65, 55 & 60% for *Mugil cephalus* and *Clarias lazera* respectively. Even though, fish samples were collected from capture showed that 30, 20 & 20% and 50, 40 & 60% for Hg, Pb and Cd residues of *Mugil cephalus* and *Clarias lazera* exceeded such safe permissible limits respectively. The results also showed that the percent of farmed fish samples exceeded the safe permissible limits were 30, 0 & 10% and 70, 40 & 60% for Hg, Pb and Cd residues of *Mugil cephalus* and *Clarias lazera* respectively. The results also clarified that Zn concentration levels of both *Mugil cephalus* and *Clarias lazera* fish were higher than those of other examined heavy metals residues. Moreover, there were non- significant differences *(p>0.05)* in heavy metal concentration levels in flesh of *Mugil cephalus* and *Clarias lazera* which were collected from captures and farms.

Dedication

To

My wife

My lovely daughter and son

My family

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LIST OF CONTENTS

Items	Page
1. Introduction	**1**
2. Review of literature	**4**
• ***Incidence and sources of heavy metals contamination in fish***	**4**
• ***Public health hazards of some heavy metal residues***	**11**
• ***Permissible limits of heavy metals in fish and their maximum acceptable weekly intake in food for human***	**23**
3. Material and methods	**24**
4. Results	**29**
5. Discussion	**36**
6. Conclusion	**42**
7. Recommendations	**43**
8. Summary	**44**
9. References	**47**
الملخص العربي	**١**

LIST OF TABLES

Table No.	Table	Page No.
1.	Mean values of heavy metal residues "ppm" in examined flesh of *Mugil cephalus and Clarias lazera*	29
2.	Incidence of heavy metal residues in examined flesh of *Mugil cephalus* and *Clarias lazera* (n = 40).	31
3.	Comparison between the mean values of heavy metal residues "ppm" in examined flesh of *Mugil cephalus and Clarias lazera*	33