Cairo University
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Some Heavy Metals Residues In Crustaceans

A Thesis presented

By

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For the Degree of M.V.Sc. in Meat hygiene and Control

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Abstract

In this study, a total of 100 samples of locally produced marketed crab (Callinectes Pallidus) and shrimp (Penaeus Natialis) 50 of each were collected from different fish markets and supermarkets in Giza Governorate, Egypt. The collected samples were analyzed for determination of lead, Cadmium, mercury and iron concentrations by using Atomic Absorption Spectrophotometry. Results revealed that, the mean concentration of Pb, Cd, Hg and Fe in muscle of crab flesh were 2.09, 0.15, ND and 16.06 ppm, respectively while in shrimp flesh were 0.89, 013, ND and 15.95 ppm, respectively. Also, results revealed that 100% of examined samples of crab and 38% of examined shrimp samples were contained Pb levels over the permissible limit according to **ESS 2360 (1993)**. While, the concentration of Cd were above the permissible limits according to **ESS 2360 (1993)** in all samples by 70% for both types. In addition, the Fe was above the permissible limit According to **WHO (1989)** in crab by 10% and 6% for shrimp flesh samples. Public health significance of the examined heavy metals, prevention measures and recommendations were discussed. Lead toxicity cause central nervous system (neuropathy) and nephritis, Cadmium accumulates in liver and kidney causing kidney damage, Mercury can cross blood brain barrier and placenta cause neurological and teratogenic disorders, finally Iron cause organ failure and death occur.

Key words:

Crustacean, heavy metals, lead, cadmium, mercury, iron.

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LIST OF ABBREVIATIONS

Cd	Cadmium
Fe	Iron (Ferrum)
Hg	Mercury (Hydrargyrum)
H_2O_2	Hydrogen peroxide
Pb	Lead (Plumbum)
EC	European community
ESC	Egyptian stander