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Heavy Metals Residues in *Oreochromis niloticus* Fish

Thesis presented by

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Abstract

(Key words: *Oreochromis niloticus*, Tissue, Heavy metals, Permissible limits, FAO/WHO)

In the present study, the concentration of heavy metals namely: Al, Cd, Cr, Cu, Fe, Mn and Ni were determined in tissues of fifty samples of *Oreochromis niloticus* fish species collected from different locations in Cairo governorate markets.

The fish tissues were carefully dissected for digestion techniques followed by elements analysis performed with Inductively Coupled Plasma – Optic Emission Spectroscopy (ICP-OES).

There were different levels of heavy metal concentrations in fish tissues.

The concentrations of Al, Fe, Cr, Mn and Ni that were analysed in fish samples revealed to be greater than the permissible limits set by International standards (FAO/WHO).

The mean level of the following elements in comparison with their permissible limits (ppm) (FAO/WHO) Al (70.75 >1.00ppm) with highly significant value ($P < 0.01$), Cr (1.56 >1.00ppm) with highly significant value ($P < 0.01$) , Fe (209.2 >100.00 ppm) with highly significant value ($P< 0.01$), Mn (6.90>1.00ppm) with highly significant value and Ni (0.77>0.6 ppm) with highly significant value ($P < 0.01$).

Other metals concentrations Cd and Cu that were analysed in fish samples revealed to be below the permissible limits set by International standards (FAO/WHO).

The mean level of the following elements in comparison with their permissible limits (ppm) (FAO/WHO) Cd (0.04 < 0.05ppm) with non-significant value ($P > 0.01$) and Cu (3.17< 30.00 ppm) with highly significant value ($P < 0.01$).

Higher levels of heavy metals accumulated by the fish might be due to industrial pollution, activities, agricultural and domestic wastes which need further monitoring and investigations.

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Who brought me up to achieve my dream

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