ACCUMULATION OF LEAD, CADMIUM AND COPPER IN FOOD FISH, ***Oreochromis mossambicus*** IN BEIRA LAKE, SRI LANKA.

K.A. ANIL[1] & A. PATHIRATNE[2]

[1]Food and Chemical Laboratory, Sri Lanka Standards Institution, Colombo, Sri Lanka. [2]Department of Zoology, University of Kelaniya, Kelaniya, Sri Lanka.

Levels of three heavy metals, lead, cadmium and copper in muscle and liver tissues of tilapia, *Oreochromis mossambicus* collected from Beira Lake were assessed along with the metal levels in water and sediments to examine the bioaccumulation potential of these metals in the fish. Samples of fish, water and sediments were collected during June 1999 – August 1999 and the levels of the metals were determined by Atomic Absorption Spectroscopy using standard methods. Of the three metals studied, the levels of lead in water and muscle tissues of the fish were significantly higher than that of the other two metals ($P<0.05$). Levels of lead, cadmium and copper in muscle tissue of the fish were 15.1±1.4, 3.2±0.3 and 0.8±0.1 (mean and SEM in $\mu g\ g^{-1}$ wet tissue weight), respectively. Levels of lead in muscle tissue were positively correlated with the body weight of the fish ($P<0.05$). Levels of the three metals in liver tissue of the fish were 2-91 folds higher than that in the muscle tissue ($P<0.05$). Biotransfer factors of these metals in fish with respect to the water phase ranged from 16 to 43 in muscle tissue and from 89 to 1450 in liver tissue, whereas biotransfer factors with respect to the sediments were 5–76 in muscle and 15–906 in liver of the fish. Results revealed that the levels of lead and cadmium in fish exceeded the maximum permissible levels specified by the statutory authorities for food for human consumption. Hence, consumption of *O. mossambicus* from Beira Lake poses a health risk to the consumers due to accumulation of high levels of lead and cadmium in fish through high biotransfer of metals especially through sediments and water phase.