



Heavy Metal Analysis of *Oreochromis Mossambicus* using Atomic Adsorption Spectroscopy

*Kumar. D¹, Jamunarani. M¹ and Nagarajan. N²

PG & Research Department of Zoology, V.H.N.Senthikumara Nadar College (Autonomous), Virudhunagar, India.

*Corresponding Author E-mail: kumarsxc@yahoo.in

Abstract

The present study to evaluate the bioaccumulation, of *Oreochromis mossambicus* reared with heavy metals concentration viz; Ni, Pb, and Cd fed with different protein diets D1 (40%), D2 (45%), D3 (50%) and D4 (55%) for 14 days. The fish was exposed to Ni, Pb and Cd at different sub lethal concentration of 6.2, 7.2 and 8.3 mg/l twice a day after a feed was given. The heavy metals of Ni, Pb and Cd were assayed after 14 days by using Atomic Adsorption Spectrophotometry and the results were given. The overall heavy metal bio-accumulation of *O. mossambicus* was reported. Certain tissue morphological difference was observed due to metal exposure. In the gill region high accumulation of (3103.47) Cd were observed in (high conc.) of 9.3 mg/l fed with 55% diet, whereas low accumulation of 543.43 were observed in Ni (low conc.) of 6.2 mg/l fed with 45% diet. Likewise muscle, ovaries low and high accumulation were observed. The order of heavy metal accumulation in the region of Gills was Cd > Pb, and Ni and followed by Muscle Cd, > Pb and Ni and Ovary Pb, > Ni and Cd than followed by control diet of 40% protein diets. The results were statistically significant at $p < 0.05$. The accumulation of Nickel, Lead and Cadmium was significantly high where compared with control diet (40%) of fish tissues were reported.

Keywords: Heavy metals, different diets, bio-accumulation of gills, muscle, ovary

Introduction

In the last decades, contamination of aquatic systems by heavy metals has become a global problem. Heavy metals may enter aquatic systems from different natural and anthropogenic (human activities) sources, including industrial or domestic waste water, application of pesticides and inorganic fertilizers, storm runoff, leaching from landfills, shipping and