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Chapter 8

Bioaccumulation of Heavy Metals in Water and Some Tissues of Fish *Carangoides malabaricus*

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Abstract

The accumulation of heavy metals on fish and water has been extensively studied and well documented. However, the research has been mainly focused on the heavy metal's accumulation on the fish tissue and water. The water and fish sample can be collected from Penthakata sea, puri then analyzed the heavy metals like Ca, Zn, Cl, Si, S, P, Fe, Ti, Mn, Cu, Pb, Sn, on some tissues (Liver, Gills, Flesh) of fish and water sample and also determined some physicochemical parameters of water. Cl is highly present in flesh(44700ppm), then gill (10350ppm), and lowest concentration in liver (2560ppm). Cu concentration were lowest in liver (23.4ppm) and gill (79.2ppm) and highest in flesh (290.4ppm). Similarly, the Fe concentration were highest in gills (5550ppm) and flesh (5060ppm) and lowest in liver (23.1ppm) Zn was also low in liver (2.4ppm) but highest in flesh (2620ppm) then gills (955.9ppm). Si levels were highest in gills (17600ppm) then flesh (11290ppm) and lowest in liver (454.6ppm). Liver tissue contained lower concentration of S (410.3ppm) and higher concentration in flesh (309910ppm). Particularly the gills, which contained also higher concentration of Ca and Ti (609220 and 816 ppm, respectively) compared to the flesh (361370 and 571.5ppm). And also, Sn present in liver, Pb present in flesh and Mn present in gills. Water sample contained a different type of heavy metals like Cl, S, P, Ca, Fe values were described below in Table 1. The physicochemical parameters of water, pH is 8.3, total dissolved solid is 155mg/l, hardness is 4.700ppm, alkalinity is 500ppm, DO is 0.2 gm of O₂.

Keywords: Bioaccumulation, Physicochemical parameters, Heavy metals, *Carangoides malabaricus*.

Introduction

The universal problem is the environmental pollution and important pollutants are the heavy metals in aquatic network because of their toxicity, accumulation and biomagnification by marine creatures.