Available online at http://bjas.bajas.edu.iq
https://doi.org/10.37077/25200860.2020.33.2.18
College of Agriculture, University of Basrah

Basrah Journal of Agricultural Sciences

ISSN 1814 – 5868 Basrah J. Agric. Sci., 33(2): 207-217, 2020 E-ISSN: 2520-0860

Effect of Sublethal Concentrations of Cadmium on the Histo-pathological Changes of Muscles of *Planiliza abu* Juveniles (Heckel, 1843)

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Received 16 July 2020; Accepted 25 October 2020; Available online 13 November 2020

Abstract: Water heavy metals contamination is an international issue due to its detrimental impact on the environment, aquatic organisms and impairment of the ecological balance systems. Cadmium is a heavy metal that is extremely toxic, even in low doses, thus it is a big concern to the ecosystem. Cd can cause several Patho-morphological changes in various organs in fish. This study was evaluated the effect of sublethal concentrations of Cd toxicity and effects on Histopathological of muscle tissues of *Planiliza abu* Juvenile. Series of Cd concentrations (0.5- 2) ppm were used and the 15d LC_{50} was 0.4 ppm. Several histopathological alterations were observed which increase gradually with increased concentration, included, marked thickening and hypertrophy of muscle bundle were will observed in lowest concentration (0.5 ppm). While in the highest concentration (2 ppm), atrophy, splitting, and separation with intracellular edema were marked in fish muscle bundle.

Key words: *Planiliza abu*. Cadmium. Sublethal concentrations. Muscles. Histopathology.

Introduction

Human activities play a big role to increase metal pollution in waters (Popek *et al*., 2006). Because it is threating aquatic life, available in ecosystem (Abo El Ella *et al*., 2005) and their persistence in the environment (Biswas *et al*., 2012). Heavy metals might be entered from different sources such as soil and anthropogenic activities (Abo El Ella *et al*., 2005) such as, use of fertilizers and pesticides in agriculture and decomposition of organic matter (Bai *et al*., 2010). Some metals are considered potentially toxic (As, Cd, Pb, Hg, etc.), while others are essential (Cu, Zn, Fe and Mn) (Biswas *et al*., 2012). Cadmium is an extremely toxic metal, even in low doses. It is used in industry specifically in electroplating, industrial paints and batteries (Taylor, 1997). Cd is a natural element nonessential element, due to its ability to transfer, deposition and dissolved within ecosystems, this leads to concerns in terms of accumulation in the aquatic food chain (Guardiola *et al*., 2013). Cd element and its concentrations have been detected in the air, water, soil, and plants (Amdur *et al*., 1992). Cd serves as a big concern to the ecosystem, because it has the ability to accumulate in living organism (Mohamed, 2008). Raissy *et al*. (2011) found the presence of Cd in the aquatic animals and ecosystem only in the range of trace concentrations. The concentration of Cd range in the ocean seawater from approximately (0.01-42) µg.l^{-1}