International Journal of ChemTech Research
CODEN(USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.10 No.7,pp961-973,2017

Environmental Geochemistry and Fractionation of Cadmium Metal of Brullus Lagoon, Egypt

Abd El-Monsef Ahmed El- Badry*

National Institute of Oceanography and Fisheries, Aswan Research Station, Egypt

Abstract: The pollution of water and surficial bottom sediment of the Brullus lagoon is indicative of both water and food web quality in general. Fourteen samples were collected from surface water sample and bottom sediments sample among sites covering the Brullus Lagoon during summer 2014, in addition to seven bottom sediment sample collected from the sits near outlet of agricultural drains. A few research were carried related to study of fractionation of Cadmium elements, so, the main objective of this study is assessment of environmental for this toxic element through the Egyptian standards and the world-wide organizations. Analytical techniques have been utilized to analyze cadmium content. The sequential extraction of the Cadmium Metal is conducted on representative samples in order to assess the potential mobility and bioavailability of this metal in the studied sediments. The present study documents hard pollution by Cd, possibly as a result of using fertilizer. The territory around inlet and southeastern drain show obvious pollution by the studied metal. The main reason for such pollution resulting from industrial activities and agricultural drains. The disregards of the anthropogenic activities are the main reason of pollution in the studied lagoon. Among all the fractions for Cd, the reducible fraction was the most abundant pool, followed by exchangeable, carbonate, organic and finally Fe- Mn hydroxide fraction. Calculated pollution indicators encompass contamination factor and geoaccumulation index were reflects high level of pollutants in the vicinity of the agricultural activity at the northern areas, also, adjacent to southern drains. Oversight permanent and Bureaucracy program for monitoring the abundance and distribution of toxic metals in the studied lake should be enjoined.

Keywords: Brullus lagoon, bottom sediments, pollution, cadmium content, Fractionation of Cadmium, Egypt.

*****