

Mercury and methyl mercury pollution in sediments of Hormozgan province

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Received date: 2016/06/12

Reception date: 2016/09/11

Abstract

Pollution is one of the most important issued problems in protection of marine areas and saving their ecological balance. Although contaminants remain for a long time in sediments, but their biological activities and also variation of physical and chemical conditions can shift them to upper waters. Heavy metals especially mercury due to their toxicity and persistence in the environment are important in terms of public health. In order to determine the mercury and methylmercury levels in sediment of Hormozgan Province, 51 surface sediment samples were sampled from 6 transects (in 3 depths) located at Strait of Hormoz, Larak Island, Faror Island, Qeshm Island, around Tonb e Bozorg and Lavan Island in January 2008. After preparation and acid digestion, samples were analyzed using Cold Vapor Atomic Absorption Spectrometry. The results of this study demonstrated that accumulation of mercury in the sediments of deeper parts around Larak and Faror Islands was more than other stations and depths. Minimum and maximum mercury levels in the sediments of Hormozgan province were belonged to the sediments of 24 meters in arrounds of Lavan Island and to the sediments in the depth of 94 meters at the strait of Hormoz as 12 and 55ng/g d.w., respectively. The range of methylmercury was varied from 0.9 at the depth of 59 meters of Larak Island to 0.41 ng/g d.w. at the depth of 85 meters of Lavan Island. The maximum total mercury level in the sediments of Lavan Island (consisting of 3 depths) was 43ng/g d.w., which was almost 70% more than median mercury level in the sediments of Ton e Bozorg Island (29.3 ng/g d.w).

Keywords: Pollution, Mercury, Methylmercury, Sediments, Hormozgan Province.