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Abstract

In order to assess the risk of radiocesium (^{134}Cs, ^{137}Cs) in ecosystem of Tokyo Bay after the Fukushima Daiichi Nuclear Power Station (FDNPS) accident, we investigated radiocesium concentrations of Tokyo Bay sediment and of Japanese whiting *Sillago japonica* living in Tokyo Bay. The surveys were conducted once a year during from August 2012 to July 2016. The sediment samples were taken from two points, North side and South side, off the coast of Kisarazu-city, Chiba. The ranges of radiocesium concentration in South side sediment were higher than those in North side sediment. Time dependent decrease in radiocesium concentrations were observed in the sediments. The ecological half-lives of radiocesium were estimated at 1.3 years of ^{134}Cs, 4.0 years of ^{137}Cs, in North side sediment, and at 1.1 years of ^{134}Cs, 2.4 years of ^{137}Cs, in South side sediment. Only a little differences in radiocesium/TOC ratio of the sediment were observed between North side and South side. It is considered that TOC plays an important role as a radiocesium binding substance in the sediment on this study area. The ranges of radiocesium concentration in Japanese whiting were <0.041 ～ 0.27 Bq/kg-wet of ^{134}Cs and 0.11 ～ 1.4 Bq/kg-wet of ^{137}Cs. A correlation between radiocesium level and body size, the estimated age, was not shown in the Japanese whiting. We recognized that the radiocesium concentrations in Japanese whiting living in Tokyo Bay are in safe level as a food. Ecological half-lives of radiocesium in the Japanese whiting were estimated at 3.7 years of ^{134}Cs and 16 years of ^{137}Cs. Concentration of radiocesium in the Japanese whiting was one or two orders of magnitude higher than that in the sea water, and an order of magnitude lower than that in the sediment. Major diets of Japanese whiting are benthic animals, which feed on organic matters of sediment. From these facts, it is considered that radiocesium in the Japanese whiting is mainly transferred from the sediment.