2013 年 8 月 26 日受付，2013 年 11 月 11 日採録

Abstract

We investigated radioactivity concentrations of ^{134}Cs and ^{137}Cs in river waters, Tokyo Bay sediments and Japanese whitings (*Sillago japonica*) lived in Tokyo Bay. Water samples were taken from Arakawa river mouth and Edogawa river mouth. Due to precipitations at inland areas, the river mouth waters had high concentrations of suspended solid (SS) and radiocesium on July 3 2012. The water sample taken from Arakawa river mouth showed higher concentration of radiocesium than that of from Edogawa river mouth. The sediment sample taken from Arakawa river mouth showed the highest concentration of radiocesium in sediments which were sampled on July 3 2012. In the vicinities of river mouth at the sea, sediments showed decreasing of radiocesium concentration (Bg/1,000 cm^3 of sediment) with distance from river mouths, but there was no the same distribution pattern with the radiocesium concentrations (Bg/kg of dried sediment) of them. Values of $^{134}Cs/^{137}Cs$ activity ratio in sediments suggested that the ^{137}Cs, which was generated by nuclear weapon tests or others before the Fukushima Daiichi Nuclear Power Station accident, was included in the river mouth sediments, and these estimated values was 80 Bq/kg-dry in Arakawa river mouth, and 30 Bq/kg-dry in Edogawa river mouth. Effective ecological half-lives of radiocesium in the sediments taken from off the coast of Kisarazu-shi, Chiba, were about one year of ^{134}Cs and about three years of ^{137}Cs. We recognized that the radiocesium activity concentrations in Japanese whitings living in Tokyo Bay are in safe level as a food. Effective ecological half-life of ^{137}Cs in Japanese whiting was estimated for 1.1 ± 0.4 year. Values of $^{134}Cs/^{137}Cs$ activity ratio of Japanese whitings in 2012 suggested that the radiocesium exposed experience of each fish differed from two year old fish and three year old fish.