ORAL PRESENTATION

GEOCHEMICAL PROPERTIES OF THE ISKENDERUN AND MERSIN BAY SURFACE SEDIMENTS

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In this study, surface sediment samples, collected from 21 stations in the Iskenderun and Mersin Bay between 2014 and 2016, were analyzed to determine concentrations of basic geochemical parameters (total carbon (TC), total organic carbon (TOC), total nitrogen (TN), grain size) and heavy metals in surface sediments of the inner and central parts of Iskenderun and Mersin Bay. TC concentrations varied regionally between 30 and 73 mg/g dw (dry weight) with maximum values observed in river-fed Göksu-Taşucu region. Locally, the peak values of TOC and TN were determined in the Iskenderun Bay surface sediments due to wastewater discharges. However, on the regional scale, TOC values (range: 1.2-11 mg/g dw) were consistently higher in the muddy sediments of the Mersin Bay due to riverine inputs of refractory organic matter with high TOC/TN molar ratios (11-13). Naturally, similar variability was recorded in the TN content of the surface sediments, ranging from 0.18 to 0.87 mg/g dw. Comparison of heavy metal data with the sediment quality guideline values, Effects Range-Low (ERL) and Effects Range-Median (ERM), indicates that Pb, Cd, Zn and Hg concentrations in the bay sediments were lower than the corresponding ERL values, suggesting the minimum contamination and adverse effects of lead, cadmium, zinc, mercury present in the surface sediments of the two bays. The Cu concentrations in the surface sediments of Samandağ, Ceyhan and Seyhan regions, however, were determined to remain between ERL and ERM limit values, indicating the possible effects of copper contamination from the industrial sources. Furthermore, the measured Cr concentrations exceeded ERM values in Iskenderun and Samandag regions and the major fraction of Cr in sediment is refractory, due to partly introduced wastewater discharges from the metal industries established along the coastal areas of the Iskenderun inner bay.

Keywords: Sediment, organic carbon, heavy metals, Iskenderun Bay, Mersin Bay