FRACTIONATION ANALYSIS OF ANTIMONY IN SOILS AND SEDIMENTS

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Antimony and its species are considered to be priority pollutants interest by the EU and the USEPA. Fractionation analysis was performed to estimate the distribution of Sb(III), Sb(V), Sb-humic acids, Sb-fulvic acids in soils, river, sea, estuarine and channel sediments. The applied procedures for fractionation included: extraction with 0.11 mol l⁻¹ acetic acid (exchangeable fraction); extraction with 0.05 mol l⁻¹ EDTA (pH 7); extraction with 0.1 mol l⁻¹ NaOH (humic fraction). As comparison fractionation using a sequential extraction procedure, proposed by the Standards, Measurements and Testing Programme of the European Union was applied. An attempt was made to estimate the oxidation state of antimony in the various fractions. Electro thermal atomic absorption spectrometry with Zeeman background correction (ETAAS) and hydride generation atomic absorption spectrometry (HG-AAS) were used off-line for the determinations of antimony in the different fractions obtained.