

B504 Reductive Dehalogenation of 2,3,4-Trichlorophenol by the Leachate of Landfill Site

Seong Ju Song*, In Gil Yoon, O-Seob Kwon
Department of Environmental Science, Inje University

Anaerobic biodegradation of 2,3,4-trichlorophenol by the leachate of landfill site (Kimhae) were investigated by enrichment culture using a mineral medium containing 0.1 % yeast extract and 0.1 % peptone under 85 % CO₂ + 15 % H₂ or 85 % N₂ + 10 % CO₂ + 5 % H₂ atmosphere. For the 2,3,4-trichlorophenol in acclimated sample, reductive dechlorination of the Cl group ortho to phenolic OH was observed. N₂ / CO₂ / H₂ head space exhibited better dehalogenation rates compared to CO₂ / H₂ head space.

B505 A Study on Geochemical Properties and Sediment Enrichment Factor of Lake Chungcho Sediments

Sang Ho Jun*, Nam Hee Choi
Department of Environmental Science, Kangwon National University

Geochemical properties and sediment enrichment factor (SEF) of heavy metals in Lake Chungcho sediments were investigated. The sediments at each location consist characteristically of a reddish-brown floc from zero to a few millimeters thickness at the sediment-water interface overlying a soft gray to dark gray ooze. The sediment particle size consists of fine grain size at above 7.0m and coarse at below 7.0m. The sediments consist of 50-75% clay-size materials with silt size sediment comprising most of the remainder. The most of the trace metal contents is much greater near the sediment-water interface than at the deep horizon, except for Mn. The high sediment-water interface concentration was considered to be related to increased anthropogenic loading of the metals in recent years. Aquatic environment of Lake Chungcho was changed aerobic into anaerobic condition from 2.0m depth of sediments. It is indicated that decrease of Mn and carbonate contents from 2.0m to surface depth. Heavy metal contents were decreased from surface to 1.0m depth and little changed from 1.0m to 7.0m depth of sediment. Natural background level of Cd, Zn, Cu, Cr, Mn and Ni in Chungcho sediments were 0.6, 52.6, 48.4, 4.8, 16.9 μ g/g and 18.0 μ g/g respectively and natural background depth was below 1.0m. Sediment enrichment factors of Cd, Zn, Cu in surface sediments were 1.2, 1.3, 1.0, respectively. Ni, Cr were zero and Mn was -0.8. It is concluded that Cd, Zn and Cu were affected by anthropogenic activity in basin area of Lake Chungcho.