



Determination of Total Organic Carbon (TOC) in Sediment of Mat River[#]

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Abstract: The determination of concentration of TOC in sediment and soil samples is an important parameter on environmental evaluation and investigation of the quality of the environment. The organic matter is spread everywhere in the land and in the aquatic environment. One of the most important characteristic of organic matter is their ability to bind with ions of metals present in the sediment and to form complex components soluble or insoluble. These complexes interact with the minerals present in the clay to form particles that are capable to absorb other contaminants. Walkley – Black method is used for the determination of TOC in the sediment samples of Mati River. The method is based on the reduction of chromic acid from carbon present in the sediment in the presence of sulfuric acid. The overstock of $K_2Cr_2O_7$ was detected using the spectrophotometer method (SF UV – VIS), according the ability of Cr (IV) to form very stable colored complex compound with diphenilcarbazine. The total organic carbon content of sediments is spatially varied. There were large differences in total organic carbon values that reflected the variable depositional processes. The total organic carbon levels at Mat River varied from 0.216% at third station to 1.416% at the most polluted site. Lower total organic carbon concentrations for sediment samples have been collected near the Burrel City, the upriver station and near the ex-factory of copper in Rubik, compared with the sediments collected near of polluted urban area which have large value of the concentration of TOC.

Keywords: *TOC, UV/Vis, complex compound, Walkley – Black method, aquatic system, sediments.*

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