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Dissolved Organic Matters Characteristics in Freshwater

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This study was conducted to evaluate the characteristics of dissolved organic matters based on their origins. The dissolved organic carbon(DOC) represents an index for dissolved organic matter and basically regarded as a source of organic pollution. The monthly variations and vertical profiles of dissolved organic carbon(DOC) in Kumoh reservoir were surveyed from May 2001 to April 2002. In addition, other areas such as river, reservoir, sewage and industrial wastewater were also surveyed in summer 2001. Kumoh reservoir was divided with depth into three layers : epilimnion, metalimnion and hypolimnion. The proportion of total DOC(T-DOC) was classified by labile DOC(L-DOC) and refractory DOC(R-DOC) on the basis of long-term incubation. DOC of freshwater and Kumoh reservoir was ranged to be 1.6 ~ 4.1 mgC/L and 2.1 ~ 4.0 mgC/L, respectively. L-DOC accounted for 3 ~ 30% of DOC from watershed. Therefore, refractory dissolved organic carbon(R-DOC) was major component of DOC in the watershed. The decomposition rate(k) ranged from 0.008 d^{-1} to 0.083 d^{-1} in Kumoh reservoir. The highest decomposition rate(k) was observed at River Hoein in freshwater. Therefore, modified total organic carbon analyzer is needed to be applied for effective management of dissolved organic matter.