

DETERMINATION OF (Al, Fe, Mn, Cu) CONCENTRATIONS IN SEDIMENT
IN JOHOR COASTLINE IN RELATION TO ORGANIC CARBON
CONTENT AND PARTICLE SIZE DURING EAST MONSOON

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DETERMINATION OF (Al, Fe, Mn, Cr) CONCENTRATIONS IN SEDIMENT IN
JOHOR COASTLINE IN RELATION TO ORGANIC CARBON CONTENT AND
PARTICLE SIZE DURING POST MONSOON

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ABSTRAK

Sebanyak 15 sampel sediment telah diambil dari Perairan Pantai Johor (Laut China Selatan) dan dianalisis untuk menentukan kepekatan Al, Fe, Mn dan Cr. Analisis dilakukan dengan menggunakan kaedah pencernaan sepenuhnya dan dikira dengan menggunakan ICPMS. Sampel juga dianalisis untuk menentukan kandungan karbon organic, taburan saiz sample dan ciri lain yang mempengaruhi taburan logam berat di dalam sediment. Keputusan menunjukkan bahawa julat kepekatan logam berat adalah $726.4 \mu\text{g/g} \pm 203.34 \mu\text{g/g}$ hingga $218.06 \mu\text{g/g} \pm 27.51 \mu\text{g/g}$ bagi Mn, $110.86 \mu\text{g/g} \pm 38.49 \mu\text{g/g}$ hingga $14.97 \mu\text{g/g} \pm 1.79 \mu\text{g/g}$ bagi Cr, $8.36\% \pm 5.02\%$ hingga $0.82\% \pm 0.16\%$ bagi Fe dan $8.70\% \pm 4.11\%$ hingga $0.72\% \pm 0.11\%$ bagi Al. Analisis perhubungan korelasi antara logam berat dengan kandungan karbon organic menunjukkan Al, Mn dan Cr berkolerasi positif dengan organic karbon, selain itu analisis perhubungan dengan saiz partikel juga menunjukkan Al, Mn dan Cr berkolerasi positif dengan saiz partikel.

ABSTRACT

Fifteen sediment samples were collected from Johor coastline (South China Sea) and analyzed for Al, Mn, Cr and Fe concentrations. The analysis was carried out using total digestion method and measurements by ICPMS. The sediment were also analyzed for organic carbon content, grain size distribution and other general characteristic that may influence the distribution of heavy metals in sediment. The range of concentration of Mn is $726.4 \mu\text{g/g} \pm 203.34 \mu\text{g/g}$ to $218.06\mu\text{g/g} \pm 27.51 \mu\text{g/g}$. Cr is $110.86 \mu\text{g/g} \pm 38.49 \mu\text{g/g}$ to $14.97 \mu\text{g/g} \pm 1.79 \mu\text{g/g}$, Fe is $8.36\% \pm 5.02\%$ to $0.82\% \pm 0.16\%$ and Al is $8.70\% \pm 4.11\%$ to $0.72\% \pm 0.11\%$. Correlation analysis between metals with organic carbon indicates that Al, Mn and Cr had a significant positive relationship with organic carbon. Correlation analysis between metals with particle size also showed that Al, Mn, and Cr had a significant positive relationship with particles size.