

THE GEOCHEMICAL PROFILE OF Mn, Co, Cr, AND Fe  
IN KERTEH MANGROVE FOREST, TERENGGANU

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IN KERTEH MANGROVE FOREST, TERENGGANU**

**BY**

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## ABSTRACT

This research was carried out at Kerteh Mangrove Forest, Kerteh. There are not much research has been conducted on Malaysia mangroves especially in geochemical field. There are two different distributions that was analyzed, vertical and horizontal distribution. For vertical, one core was obtained from Station Y where each core measure 100 cm. The horizontal distributions take two stations G and Y where divide 10 samples and 15 samples in each others. The metal data were normalized to Al as a conservative element to composite for the natural textual and mineralogical variability. Total organic carbon (TOC) was determined by titration with ferrous (II) sulphate. Mean concentration for geochemical element are  $178.01 \pm 99.81$  for Mn,  $12.80 \pm 10.14$  for Co,  $36.71 \pm 22.06$  for Cu and  $1.57 \pm 0.90$  for Fe at vertical distribution. At horizontal distribution, Mn ( $230.50 \pm 78.157$ ), Co ( $17.57 \pm 7.98$ ), Cu ( $43.38 \pm 21.41$ ), Fe ( $2.93 \pm 0.37$ ) for station G, meanwhile for Station Y,  $631.46 \pm 192.99$  for Mn,  $28.49 \pm 8.65$  for Co,  $126.67 \pm 19.81$  for Cu and  $7.68 \pm 1.64$  for Fe. For mean value of organic carbon is  $1.68 \pm 0.60$  at vertical distribution and horizontal distribution  $3.87 \pm 0.19$  for station G and  $4.73 \pm 0.59$  for station Y. The percentage of organics carbon is correlated with the metals in both distributions. The association between element and organic carbon showed moderately good and poorly positive in this study. Enrichment factor and normalization was used to point out the level of pollution and it does indicate that all the geochemical elements are from natural source.

## ABSTRAK

Kajian ini dijalankan di kawasan Hutan Paya Laut Kerteh, Kerteh. Tidak banyak kajian yang dijalankan di kawasan ini terutamanya di dalam bidang geokimia. Kajian ini mempunyai dua taburan yang berbeza untuk dianalisa iaitu taburan menegak dan melintang. Untuk taburan menegak, hanya satu teras sedimen diambil daripada kawasan kajian yang mana mempunyai ukuran 100 cm setiap satu. Untuk taburan melintang, dua stesen dikenalpasti iaitu stesen G dan Y yang dibahagi kepada 10 sampel dan 15 sampel setiap satu stesen. data untuk setiap logam dinormalisasikan oleh Al yang bertindak sebagai elemen konservatif untuk tujuan perbandingan kepada tekstur semulajadi dan perubahan mineralogi sedimen. Penentuan jumlah organik karbon (TOC) adalah melalui titratan dengan iron (II) sulfat. Purata kepekatan untuk elemen geokimia untuk taburan menegak adalah  $178.01 \pm 99.87$  untuk Mn,  $12.80 \pm 10.14$  untuk Co,  $36.71 \pm 22.06$  untuk Cu dan  $1.57 \pm 0.90$  untuk Fe. Untuk taburan melintang mengikut stesen adalah Mn ( $230.50 \pm 78.16$ ), Co ( $17.57 \pm 7.98$ ), Cu ( $43.38 \pm 21.41$ ), Fe ( $2.93 \pm 0.37$ ) untuk stesen G sementara untuk stesen Y,  $631.46 \pm 192.99$  untuk Mn,  $28.49 \pm 8.65$  untuk Co,  $126.67 \pm 19.81$  untuk Cu dan  $7.68 \pm 1.64$  untuk Fe. Purata kepekatan organik karbon untuk taburan menegak adalah  $1.68 \pm 0.60$  dan melintang untuk stesen G dan Y adalah  $3.87 \pm 0.19$  dan  $4.73 \pm 0.59$  masing-masing. Peratusan organik karbon adalah berkadar langsung dengan semua elemen yang dianalisa untuk kedua-dua taburan. Ia digunakan untuk melihat hubungkait antara elemen geokimia dan karbon organik yang menunjukkan hubungan yang sederhana baik dan kurang baik. Faktor pengkayaan dan normalisasi pula untuk mengetahui tahap pencemaran dan asal usul elemen adalah dari sumber semulajadi.