DISTRIBUTION OF ALIPHATIC AND AROMATIC HYDROCARBON IN SEDIMENT IN WATERS OFF PULAU PERHENTIAN, SOUTH CHINA SEA

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Tarikh	Waktu Pemulangan	Nombor Ahli	Tanda tangan
13/12	4/00	GSK0220	
3/6/10	11-00 pm	GSK 0736	
26/7/10	12-00	GSK 0736	

30/3/10

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BY

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ABSTRAK

Kandungan dan jenis Hidrokarbon Alifatik (AH) dan Hidrocarbon Polisiklik Aromatik (PAH) dalam sampel sedimen dari Pulau Perhentian ditentukan secara kuantitatif dan kualitatif dengan menggunakan GC-FID. 12 buah stesen telah dipilih.

Keseluruhannya, min kandungan hidrokarbon berjulat di antara 0.07 – 16.266 $\mu g.g^{-1}$ dan 0.262 – 11.218 $\mu g.g^{-1}$ berat sedimen kering untuk penyampelan kali pertama dan kedua. Bagi kandungan AH spesis, sebanyak 0.06 – 16.136 $\mu g.g^{-1}$ dan 0.162 – 10.979 $\mu g.g^{-1}$ berat kering sedimen dikesan dalam sedimen untuk penyampelan kali pertama dan kedua masing-masing. Manakala bagi kandungan PAH spesis dalam sedimen berjulat dari tidak dapat dikesan hingga 0.656 $\mu g.g^{-1}$ dan dari 0.0535 hingga 0.919 $\mu g.g^{-1}$ berat kering sedimen untuk penyampelan kali pertama dan kedua. Spesis dominan bagi AH yang C_{18} dan C_{24}. Manakala untuk PAH ialah Acenapthene dan Phenantrene.

Kandungan organik karbon dalam sedimen berjulat dari 0.34 – 1.34 % dan 0.85 – 2.34 % bagi penyampelan kali pertama dan kedua. Korelasi ditunjuk antara kandungan organik karbon dan hidrokarbon dalam sedimen (dengan pekali korelasi, r = 0.5186 dan 0.6219).

Kandungan jumlah lipid diekstrak dalam sedimen berjulat dari 89.99 – 379.62 $\mu g.g^{-1}$ dan 209.87 – 919.62 $\mu g.g^{-1}$ bagi penyampelan kali pertama dan kedua dengan korelasi bersama kandungan hidrokarbon (pekali korelasi, r = 0.4945 dan 0.6761).

ABSTRACT

The amounts and types of AH and PAH compounds in sediment samples from Pulau Perhentian were determined quantitatively and qualitatively by using Gas Chromatography with Flame Ionization Detector (GC-FID). 12 sampling sites were being established.

The mean total hydrocarbon contents in sediments ranged between 0.07 – 16.266 $\mu g.g^{-1}$ and 0.262 – 11.218 $\mu g.g^{-1}$ dry sediment weight respectively. For the AH contents, 0.06 – 16.136 $\mu g.g^{-1}$ and 0.162 – 10.979 $\mu g.g^{-1}$ dry sediment weight were detected in sediments for first and second sampling. Meanwhile, PAH contents in sediments varied from undetectable to 0.656 $\mu g.g^{-1}$ and from 0.0535 to 0.919 $\mu g.g^{-1}$ dry sediment weight. The dominant AH compounds detected in sediments were C_{18} and C_{24} while for PAH compounds were Acenapthene and Phenanthrene.

The organic carbon contents in sediments range from 0.34 – 1.34 % for first sampling and 0.85 – 2.34 % for second sampling. A significant correlation of organic carbon and hydrocarbon contents in sediment was shown with coefficient correlation (r = 0.5186 and 0.6219).

The Total Extractable Lipids in sediments varied from 89.99 to 379.62 $\mu g.g^{-1}$ and from 209.87 to 919.65 $\mu g.g^{-1}$ dry sediment weight for first and second sampling, with significant correlation with hydrocarbon content in sediment (r = 0.4945 and 0.6761)