

DISTRIBUTION OF NITROGEN COMPOUNDS
(INORGANIC AND ORGANIC) IN THE COASTAL WATER OF
PERHENTIAN ISLAND, SOUTH CHINA SEA

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Pengarang GOH SAU LIN		No. Panggilan LP 25 16	
Judul Distribution of Nitrogen compounds		FST 8	
Tarikh	Waktu Pemulangan	Nombor Ahli	Tanda tangan
11/2/04		UK 5757	my
14/2/04	2/00	UK 5569	af
18/7/1	6 pm	UK 0432	sp
23/7/05	2-20 pm	UK 8007	la
25/7/06	6-00 pm	UK 10672	sa
17/8	10:00 pm	UK 99	

17/2/10

Distribution of Nitrogen Compounds (Inorganic and Organic) in the Coastal Water of Perhentian Island, South China Sea.

By
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Abstract:

The distribution of nitrogen compounds (inorganic and Organic) in the coastal water of Perhentian Island, South China Sea were studied. 16 stations were established and they are visited two time.

The first sampling was conducted on 15 – 19 April 2001, the mean and the range of NH_4^+ , NO_2^- , NO_3^- and DON concentration were 0.460 μM , 0.150 – 0.980 μM ; 0.040 μM , 0.011 – 0.082 μM ; 0.194 μM , 0.030 – 0.340 μM and 0.794 μM , 0.520 – 1.250 μM respectively.

For the second sampling conducted on 16 – 19 August 2001, the mean concentration of NH_4^+ , NO_2^- , NO_3^- and DON concentration were 1.075 μM , 0.370 – 9.560 μM ; 0.024 μM , not detectable – 0.045 μM ; 0.168 μM , 0.040 – 0.690 μM and 0.778 μM , 0.540 – 1.140 μM respectively.

The levels of NH_4^+ , NO_2^- , NO_3^- and DON are low in the coastal water of Perhentian Island. The level are comparatively lower than that found in the Strait of Malacca (Tan, 2000), South China Sea (Law and Kamil, 1986), Port Dickson (Chu, 1989), but higher than that detected in the Redang Island (Law et al, 1997). The coastal water of Perhentian Island is safe for marine organisms in term of nitrogen contamination.

The source of nitrogen compounds in the coastal water of the study area are derived probably from the anthropogenic input, terrestrial input, topographical effect, current and waves, light penetration, pH, temperature, dissolved oxygen, primary productivity by phytoplankton, and precipitation during Northeast Monsoon season.

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Abstrak

Taburan kompaun nitrogen (inorganik and organik) di perairan Pulau Perhentian, Laut China Selatan telah dikaji. Persampelan sebanyak 2 kali diadakan dan 16 stesen telah dipilih.

Bagi persampelan pertama yang diadakan pada 15 – 19 April 2001, kepekatan purata dan julat untuk NH_4^+ , NO_2^- , NO_3^- and DON adalah $0.460 \mu\text{M}$, $0.150 - 0.980 \mu\text{M}$; $0.040 \mu\text{M}$, $0.011 - 0.082 \mu\text{M}$; $0.194 \mu\text{M}$, $0.030 - 0.340 \mu\text{M}$ dan $0.794 \mu\text{M}$, $0.520 - 1.250 \mu\text{M}$ masing-masing.

Bagi persampelan kedua yang diadakan pada 16 – 19 Ogos 2001, kepekatan purata dan julat untuk NH_4^+ , NO_2^- , NO_3^- and DON adalah $1.075 \mu\text{M}$, $0.370 - 9.560 \mu\text{M}$; $0.024 \mu\text{M}$, not detectable – $0.045 \mu\text{M}$; $0.168 \mu\text{M}$, $0.040 - 0.690 \mu\text{M}$ and $0.778 \mu\text{M}$, $0.540 - 1.140 \mu\text{M}$ respectively.

Paras NH_4^+ , NO_2^- , NO_3^- dan DON adalah reandah dalam perairan Pulau Perhentian. Paras ini adalah rendah berbanding dengan kajian yang dijalankan di Selat Melaka (Tan, 2000), Laut China Selatan (Law and Kamil, 1986) dan Port Dickson (Chu, 1989). Walaubagaimanapun, paras ini adalah tinggi apabila dibandingkan dengan paras di Pulau Redang. Perairan Pulau Perhentian adalah selamat untuk organisma marin.

Taburan kompaun-kompaun nitrogen di perairan kawasan kajian boleh disebabkan oleh input antropogenik, input dari daratan, kesan topografi, arus dan

ombak, penembusan cahaya matahari, pH, suhu, kandungan oksigen terlarut, produktiviti primer oleh fitoplankton, and taburan hujan semasa monsun Timur Laut.

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