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2011

Heavy metas in biological samplesat Mengabang Telipot river surrounding Universiti Malaysia Terengganu (UMT) / Norshahida Ajelan.

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Lihat sebelah

HEAVY METALS IN IOLOGICAL SAMPLES AT MENGABANG TELIPOT RIVER SURROUNDING UNIVERSITI MALAYSIA TERENGGANU.

BY
NORSHAHIDA BT AJELAN

Research Report submitted in partial fulfillment of the requirements for the degree of Bachelor of Science (Marine Science)

FAKULTI PENGAJIAN MARITIM DAN SAINS MARIN
UNIVERSITI MALAYSIA TERENGGANU
2007

JABATAN SAINS SAMUDERA
FAKULTI PENGURUSAN MARITIM DAN SAINS MARIN.
UNIVERSITI MALAYSIA TERENGGANU

PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk :
HEAVY METALS IN BIOLOGICAL SAMPLES AT MENGABANG TELIPOT RIVER SURROUNDING UNIVERSITI MALAYSIA TERENGGANU oleh **NORSHAHIDA BT AJELAN** No. Matrik : **UK 9922** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Samudera sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah **Sarjana Muda Sains (Sains Samudera)**, Fakulti Pengurusan Maritim dan Sains Marin, Universiti Malaysia Terengganu.

Disahkan oleh :

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Tarikh : 2/3/08

DEDICATION ;

THIS THESIS IS DEDICATED TO MY PARENTS, BROTHERS AND SISTERS, AND ALSO TO ALL MY FRIENDS. THANK YOU FOR ALL YOUR SUPPORTS AND ENCOURAGEMENTS

ACKNOWLEDGEMENTS

In the Name of Allah, The Merciful and The Compassionate, my gratitude is immeasurable for His blessings upon me. Special thanks to my beloved father, Ajelan bin Talib and my beloved mother, Mahaya bt Shaari who continously prays for my success and never fails to offer encouragement and motivation to inspire me.

Sincere thanks and appreciation is also expressed to Assoc. Prof. Dr. Mohamed Kamil bin Abd Rashid for his invaluable guidance, advice, suggestions and constuctive critisms throughout my final year project. Not forgetting all the laboratory assistants in Oceanography laboratory: En. Kamari,En. Kamarun,En. Raja and En. Sulaiman and also Science Officer at INOS ; En Azam, En. Mohd Rodila and En Joseph for their help during the laboratory sessions. Special appreciation is also expressed to Mr Ong Meng Chuan for his help, assistance and advices throughout my project.

My deepest gratitude must definitely go to the special person in my life, Muhammad Saifuddin bin Idris for his blessings and prayers i was able to get the strength and inspirations; special thanks for undying supports that you given me thus far. I also appreciate my coursemate of Bachelor of Degree Marine Science 2004-2007 especially to my best friends Aida, Miza, Lynn, Intan, Ina, Echot, Maiza, Jaja and everyone involved in my project that i did not state above, i really appreciate fo all your helps and thoughts throughout my project.

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ABSTRACT

Concentrations of Cd, Cu, Pb, Zn and Cr were determined in the muscle, stomach and gills of biota caught using beam trawl at 4 stations in Mengabang Telipot River surrounding Universiti Malaysia Terengganu. Heavy metal concentrations the tissues tended to vary significantly among stations, and all stations thought to be contaminated by untreated domestic wastes showed particularly high metal concentrations. For Station 1, the ranges of concentration in biota were as follows : the range of Cr was 625.8 μg/g to 920.7 μg/g, that of Pb was from 203.9 μg/g to 7096.2 μg/g, that of Cd was from 6.8 μg/g to 501.8 μg/g, that of Cu 10.7 μg/g to 810.1 μg/g, and that of Zn was from 60.6 μg/g to 1968.5 μg/g. There are no biota caught at Station 2. For Station 3, the ranges of concentration in biota were as follows : the range of Cr was from 577.7 μg/g to 1190.8 μg/g, that of Pb was from 62.5 μg/g to 2448.1 μg/g, that of Cd was 4.4 μg/g to 182.1 μg/g, that of Cu was from 2.5 μg/g to 760.6 μg/g, and that of Zn was 29 μg/g to 2428.7 μg/g. For Station 4, the ranges of concentration in biota were as follows : the range of Cr was 791 μg/g to 904.4 μg/g that of Pb was 711 μg/g to 23399 μg/g, that of cadmium was from 59.9 μg/g to 711 μg/g, that of Cu was from 84 μg/g to 756.6 μg/g, and that of Zn was from 831 μg/g to 1813.6 μg/g. The concentrations of some metals in some tissues exceeded the acceptable levels for a food source for human consumption. The results of this study indicated that the metals present in the river were taken up by the biota through food, water, and sediment, and regardless of their biological needs showed high metal concentrations.

ABSTRAK

Kepekatan logam Cd, Cu, Pb, Zn and Cr telah ditentukan di dalam bahagian perut, otot dan juga insang biota yang di tangkap menggunakan pukat di sungai Mengabang Telipot di sekeliling Universiti Malaysia Terengganu. Kepekatan logam berat ini dalam tisu adalah cenderung berubah-ubah memgikut stesen. Kesemua stesen mempunyai kebarangkalian atau kemungkinan menjadi kawasan yang berisiko tinggi untuk tercemar kerana menjadi tempat buangan sisa organik yang tidak di rawat dan ini menyebabkan kandungan logam berat menjadi tinggi. Di Stesen 1, julat kepekatan logam dalam biota adalah seperti berikiut : dari 625.8 μg/g hingga 920.7 μg/g untuk Cr, dari 203.9 μg/g hingga 7096.2 μg/g untuk Pb, dari 6.8 μg/g hingga 501.8 μg/g untuk Cd, dari 10.7 μg/g hingga 810.1 μg/g untuk Cu, dan dari 60.6 μg/g hingga 1968.5 μg/g untuk Zn. Tiada biota yang berjaya ditangkap di Stesen 2.Untuk Stesen 3,julat kepekatan logam dalam biota adalah seperti berikiut : dari 577.7 μg/g hingga 1190.8 μg/g untuk kromium, dari 62.5 μg/g hingga 2448.1 μg/g untuk plumbum, dari 4.4 μg/g hingga 182.1 μg/g untuk kadmium, dari 2.5 μg/g hingga 760.6 μg/g untuk Cu, dan dari 29 μg/g hingga 2428.7 μg/g. Bagi Stesen 4, julat kepekatan logam adalah seperti : dari 791 μg/g hingga 904.4 μg/g untuk Cr, dari 711 μg/g hingga 23399 μg/g untuk Pb, dari 59.9 μg/g hingga 711 μg/g untuk Cd, dari 84 μg/g hingga 756.6 μg/g untuk Cu, dan untuk Zn ialah dari 831 μg/g hingga 1813.6 μg/g. Kepekatan sebahagian logam dalam kebanyakan tisu biota melebihi tahap selamat yang dibenarkan untuk sumber makanan manusia. Keputusan dalam kajian ini mendapati logam yang terdapat disini masuk kedalam biota melalui pemakanan, air, dan sedimen.