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Heavy metal concentrations in oysters (crassostrea iredalei) and mussels (perna veridis), collected at Tok Bali Lagoon, Kelantan
Fadlina Azlan.

Lihat sebelah

HEAVY METALS CONCENTRATION IN OYSTERS (*Crassostrea iredalei*) AND MUSSLELS (*Perna viridis*) COLLECTED AT TOK BALI LAGOON, KELANTAN

By

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Research Report submitted in partial fulfilment of the Requirements for the degree of Bachelor of Science (Marine Biology)

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JABATAN SAINS SAMUDERA
FAKULTI SAINS DAN TEKNOLOGI
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MALAYSIA

PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk :
HEAVY METALS CONCENTRATION IN OYSTERS (*Crassostrea iredalei*) AND MUSSSELS (*Perna viridis*) COLLECTED AT TOK BALI LAGOON, KELANTAN.
oleh FADLINA BT AZLAN No.matrik UK 8140 telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Samudera sebagai memenuhi sebahagian daripada keperluan memperolehi ljazah SARJANA MUDA SAINS (BIOLOGI MARIN), Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

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Specially dedicated to my loving family....

'kakak dah hasilkan buku ooo..'

My friends..

'aku akan try upgrade jadi Intel Pentium 4, hahahaha....'

For Arwah Ayah...

'miss ur voice....'

Untuk oyster dan mussels yg jadi mangsa kajian aku...

'tima kacih...'

Untuk lab ocean yg jadi destinasi percutian sem 5 aku..

'syok..'

Fadlinaazlan

'setiap hari yg kita lalui adalah sejarah'

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LIST OF ABBREVIATIONS

AAS	Atomic Absorption Spectrometer
cm	centimetre
g	gram
µg	microgram
wt	weight
ml	mililiter
Cu	cuprum
Cd	cadmium
Pb	Plumbum, lead
Zn	zinc
H2NO3	nitric acid
H2O2	hidrogen peroxide
ppm	part per thousand
V	volume
P< 0.05	significant difference
P>0.05	no significant difference
ANOVA	analysis of variance
df	degree of freedom
SS	sum of square
MS	mean of square
SD	standard deviation
R2	r-squared
µg/g	microgram per gram
C. iredalei	*Crassostrea iredalei*
P. viridis	*Perna viridis*

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ABSRACT

The study of heavy metals concentrations were conducted on oysters (*C. iredalei*) and mussels (*P. viridis*) collected from the cages, which owned by the Department of Fisheries in the Tok Bali Lagoon, Kelantan. The cages are located in the middle of Tok Bali River. The oysters and mussels samples were dried and used for heavy metals (copper, lead, cadmium and zinc) detection using Atomic Absorption Spectrometer (AAS). The results showed that oysters have high concentration of Zinc (128.29 to 130.90 µg/g dry wt) than other metals and higher than Zinc concentration in mussels (109.72 to 132.04 µg/g dry wt). From the t-test analysis, copper and cadmium were found to have significant difference between species. However, both organisms showed low concentration of lead and Cadmium. Different sizes of oysters and mussels are seemed to have no influence heavy metals concentration in their tissues. This study also indicates that different species have the different ability of heavy metals accumulations.

ABSTRAK

Sampel tiram (*C. iredalei*) dan kupang (*P. viridis*) yang dikutip dari sangkar ikan milik Jabatan Perikanan telah digunakan untuk membuat kajian kepekatan logam berat di Lagun Tok Bali, Kelantan. Sangkar ikan ini terletak di pertengahan Sungai Tok Bali. Sampel-sampel ini dikeringkan dan digunakan untuk mengesan logam berat (Kuprum, Kadmium, Plumbum dan Zink) menggunakan Penyerapan Atom Spectrometer (AAS). Keputusan telah menunjukkan tiram mempunyai kepekatan Zink (128.29 hingga 130.90 µg/g berat kering) yang tinggi berbanding dengan logam lain. Kepekatan Zink di dalam tiram juga adalah lebih tinggi berbanding kupang (109.72 hingga 132.04 µg/g berat kering). Melalui t-test, didapati bahawa pengumpulan kuprum dan Kadmium di dalam kedua-dua organisma mempunyai perbezaan nyata ($P<0.05$). Walaubagaimanapun, kedua-dua organisma ini menunjukkan kepekatan Kadmium dan Plumbum yang rendah di dalam tisunya. Perbezaan dari segi saiz organisma pula tidak menunjukkan sebarang perbezaan yang nyata di dalam pengumpulan logam berat di dalam tisu. Kajian ini juga telah menunjukkan spesies yang berbeza mmpunyai kebolehan mengumpulkan logam berat pada kepekatan yang berlainan.