

THE EFFECT OF TEMPERATURE AND SALINITY ON THE
GROWTH OF *Chlorophyll a* AND *Chlorophyll b*
IN THE SEA OF MALAYSIA
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Fatty acid fatty acid composition in sea cucumber; *Holothuria atra* and *Holothuria ocellata* at Pantai Teluk Bidara, Dungun, Terengganu / Nur Zulaikha Zakariya.

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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk :

FATTY ACID COMPOSITION IN SEA CUCUMBER *Holothuria edulis* AND *Holothuria scabra*
AT PANJAL TELUK BIDARA, DUNBUN, TERENGGANU

oleh NUR IZZATIA BINTI ZAKARIYA No. Matrik: UM 10335

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FATTY ACID COMPOSITION IN SEA CUCUMBER ; *Holothuria atra* AND
Holothuria ocellata AT PANTAI TELUK BIDARA, DUNGUN, TERENGGANU.

By

Nur Zulikha binti Zakariya

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List of abbreviation

μ	micro
ω	omega
FA	fatty acid
SAFA	saturated fatty acid
MUFA	monounsaturated fatty acid
PUFA	polyunsaturated fatty acid
EFA	essential fatty acid
EPA	eicosapentanoic acid
DHA	docosapentanoic acid
NMR	nuclear magnetic resonans
GC	gas chromatography
TLC	thin layer chromatography
HPLC	high performance liquid chromatography
GC-FID	gas chromatography flame ionized detector
FAMES	fatty acid methyl ester

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ABSTRACT

Fatty acids (FA) biomarkers analysis was done to determine the fatty acids composition and to investigate the food sources materials for the sea cucumbers. The analysis was done to examine the lipid content and to compare the fatty acid composition in two species of sea cucumber, *Holothuria atra* and *Holothuria ocellata* from Pantai Teluk Bidara, Dungun, Terengganu.

The fatty acid profile from extract of sea cucumber and sediment was determined using gas chromatography (GC) technique. The lipid was extracted in mixture of chloroform:methanol.

The total lipid content is high in *H. atra* (0.056 g g⁻¹) compared to *H. ocellata* (0.043 g g⁻¹). The total fatty acid concentrations vary in each sample, where the highest is in *H. atra* (4.471 µg g⁻¹) and lowest in *H. ocellata* (1.154 µg g⁻¹). The fatty acids compositions in both species are the same but the fatty acid profile differed significantly. 17 fatty acids have been detected in *H. atra* tissues sample while only 13 have been detected in *H. ocellata* tissues sample. The food sources of both species are the same where macroalga and bacteria were the major component of diet for both species. This is probably due to the abundance of this source in the sediment. Both sea cucumber species consume the same food.