

FOOD HABITS OF FIDDLER CRAB, *Uca annulipes* AS INDICATED BY
FATTY ACID MARKERS ON INTERTIDAL FLAT OF SETIU WETLAND,
TERENGGANU

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TERENGGANU**

By

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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

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LIST OF ABBREVIATIONS

>	-	More than
<	-	Less than
%	-	Percentage
ω	-	Omega
ANOVA	-	Analyses of Variance
BF ³	-	Boron trifluoride
BrFA	-	Branched Fatty Acid
FA	-	Fatty acid
FAME	-	Fatty Acid Methyl Esters
GC	-	Gas Chromatography
GC-FID	-	Gas Chromatography Flame Ionized Detector
HCL	-	Hydrochloric Acid
MUFA	-	Monounsaturated Fatty Acid
m	-	Mili
NaOH	-	Sodium Hydroxide
PUFA	-	Polyunsaturated Fatty Acid
SAFA	-	Saturated Fatty Acid
TLC	-	Thin Layer Chromatography

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ABSTRACT

A study on the food habits of fiddler crab, *Uca annulipes* from the intertidal flat area of the Setiu Wetland, Terengganu was done using fatty acid biomarkers. The sampling was done two times, October and December 2007. The lipids contents and fatty acid compositions in the tissues and the crabs was compared with its food pellets and faeces, as well as in the surface sediments. The mean concentrations of total lipids were highest on December (16.95%). But the total lipid concentration is lowest on the same month for tissues samples (1.38%). Total lipid concentration in faeces is much higher than others (15.98%) in October. Fatty acid content of the total lipid components was lower in October than in December. In December the difference between fatty acid content and other components is very high. The mean concentration of FAMES was significantly higher in the feces (7.72-34.00 mg g⁻¹) than in crab tissues, food pellet and surface sediment. FAMES content was higher in October rather than December except for faeces samples. The fatty acid profiles was also differ significantly between October and December (P<0.05) and between food pellets, surface sediments, tissues and faeces. All fatty acid markers found were mostly in line with what had found by previous study to indicate food habits of fiddler crabs. Analyses of the fatty acid composition in the surface sediments, food pellets, tissues and faeces samples yield to the dominant fatty acid composition and small quantities of certain fatty acid. The fiddler crab itself and other organic matter around its habitat could indicate the food sources utilization seasonally.

Tabiat Pemakanan Ketam Rebab *Uca annulipes* Seperti Mana Yang Ditunjukkan Oleh Penanda Asid Lemak Di Kawasan Pasang Surut Di Tanah Bencah Setiu

ABSTRAK

Satu kajian terhadap tabiat pemakanan ketam Rebab, dari kawasan pasang surut di Tanah Bencah Setiu, Terengganu telah dijalankan menggunakan penanda biologi asid lemak. Penyampelan telah dilakukan sebanyak dua kali iaitu pada bulan Oktober dan Disember 2007. Kandungan keseluruhan lipid dan komposisi asid lemak dalam tisu dan ketam telah dibandingkan dengan gentelan makanan dan najis ketam serta sedimen permukaan. Kepekatan min total lipid adalah paling tinggi pada bulan Disember (16.95%). Pada bulan yang sama, kepekatan min bagi sampel tisu adalah terendah bagi sampel tisu ketam (1.38%). Jumlah kepekatan lipid dalam najis ketam adalah lebih tinggi daripada sampel lain pada bulan Oktober (15.98%). Pada masa yang sama, kandungan asid lemak dalam komponen lipid adalah lebih tinggi pada bulan Oktober berbanding Disember. Kepekatan min asid lemak metil ester bagi najis ketam pula lebih tinggi daripada sample sedimen permukaan, gentelan makanan dan tisu. Kandungan asid tersebut juga tinggi pada bulan Oktober berbanding bulan Disember kecuali bagi sampel najis. Profile asid lemak berbeza secara signifikan antara dua bulan tersebut ($P < 0.05$) dan antara jenis-jenis sampel. Analisis komposisi asid lemak dalam sampel sedimen permukaan, gentelan makanan, tisu dan najis ketam menemukan kepada asid lemak-asid lemak yang dominan dan kumpulan asid lemak tertentu. Ketam Rebab dan bahan organik di habitatnya boleh menunjukkan coral bermusim bagi sumber-sumber makanan dan penggunaannya.