

IDENTIFICATION OF TENUALOSA SP. IN PERAK
RIVER USING MORPHOMETRIC MEASUREMENT,
MERISTIC COUNT & CO1 GENE ANALYSIS

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DECLARATION AND VERIFICATION REPORT
FINAL YEAR RESEARCH PROJECT

It is hereby declared and verified that this research report entitled **Identification of *Tenualosa* sp. In Perak River Using Morphometric Measurement, Meristic Count and CO1 Gene Analysis** by **Muhammad Faiz Bin Zakaria**, Matric No. **UK26052** have been examined and all errors identified have been corrected. This report is submitted to the School of Marine Science and Environment as partial fulfillment towards obtaining the **Degree of Science (Marine Biology)**, School of Marine Science and Environment, Universiti Malaysia Terengganu.

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**IDENTIFICATION OF *Tenualosa* sp. IN PERAK RIVER USING
MORPHOMETRIC MEASUREMENT, MERISTIC COUNT
AND CO1 GENE ANALYSIS.**

By

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

School of Marine Science and Environment

UNIVERSITI MALAYSIA TERENGGANU

2014

Faiz, M. Z. 2014. Identification of *Tenualosa* sp. In Perak River Using Morphometric Measurement, Meristic Count and CO1 Gene Analysis. Undergraduate thesis, Bachelor of Science in Marine Biology, School of Marine Science and Environment, Universiti Malaysia Terengganu, Terengganu, 59p.

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ACKNOWLEDGEMENTS

I would like to express the deepest appreciation to my first and second supervisor, Dr Nur Asma Bt Ariffin and Dr. Kesaven A/L Bhubalan, who have the attitude and the substance of a genius: both of you continually and convincingly conveyed a spirit of adventure in regard to this study, and also and excitement in regard to teaching me as well as to lend your hand when I got some problem with my final research project. Without your guidance and persistent help this would not have been possible. I also would like to thank to all master student which are Miss Rohaini, Mr. Abdul Hadi, Miss Aifa Wahyu, Miss Syazwani and Mr. Azran whose work demonstrated to me in the laboratories. On the other hand, I also would like to give a special thanks to Mr. Idham that give me a permission to finish all my laboratories work and use the chemical reagent in Biosystem Laboratories, School of Fisheries Science and Aquaculture. As I have lack of basic in biotechnology before and there are few challenged that I faced to complete this thesis, I represent this thesis as a symbol of determining due to FYP teach me how to gain more knowledge and how to work hard and top solve the problem that I faced. I learned that applied biotechnologies in marine creature are incredible as we gain more knowledge from more research that we have done. Yes, during the progress to achieve our goal is difficult, but there is no short cut to achievement.

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LIST OF ABBREVIATIONS

mm	-	millimetre
cm	-	centimetre
PCR	-	Polymerase Chain Reaction
DNA	-	Deoxyribonucleic acid
rDNA	-	ribosomal Deoxyribonucleic acid
RNA	-	Ribonucleic acid
dNTP	-	Deoxyribonucleic triphosphate
MgCL ₂	-	Magnesium chloride
g	-	gram
mg	-	milligram
ml	-	millilitre
µl	-	microliter
rpm	-	revolutions per minute
<i>g</i>	-	gravity
h	-	hour
m	-	minute
s	-	second
V	-	Volt

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ABSTRACT

Tenualosa toli and *Tenualosa macrura* can be found in Sarawak water and have higher commercial value in Malaysia (Blaber et al., 1996; Phillip, 2001). According to Perikanan (2012), *Tenualosa* sp. also can be found in Perak River, but the species of this genus still unidentified. All samples were collected using net in December 2013 and February 2014 and the species was identified based on distinguished character of morphological and meristic count. DNA was extracted from five sample of *Tenualosa* sp. PCR amplification of 600 bp partial fragment of CO1 gene was amplified using CO1 marker. This PCR fragment was then sequenced and analysed using Mega version 5. The result from BLAST showed that there are the sequences have high similarity with CO1 gene. The phylogenetic analysis was constructed using Neighbour Joining tree and Maximum Likelihood tree.

**PENGENALPASTIAN SPESIS *Tenualosa* sp. DI SUNGAI PERAK
MENGUNAKAN PENGIRAAN MORPOMETRIK,
PENGIRAAN MERISTIK DAN ANALISIS
TERHADAP GEN CO1.**

ABSTRAK

Tenualosa toli dan *Tenualosa macrura* boleh dijumpai di Sungai Sarawak dan mempunyai nilai komersil yang tinggi di Malaysia (Blaber et al., 1996; Phillip, 2001) Semua sample telah ditangkap menggunakan jaring pada Desember 2013 dan Ferbuari 2014 dan spesis telah dikenalpasti berdasarkan ciri-ciri perbezaan terhadap ciri-ciri morfologi dan meristik. DNA telah diekstrak daripada lima sampel spesis *Tenualosa*. 600 bp jujuran separuh amplikasi PCR daripada gen CO1 telah diamplikasi. Urutan dan analisis ujuran PCR ini kemudian dianalisis menggunakan Mega versi 5. Keputusan daripada BLAST menunjukkan terdapat urutan yang mengandungi tahap persamaan yang tinggi dengan gen CO1. Analisis phylogenetik telah dilakukan menggunakan Neighbour Joining tree dan Maximum Likelihood tree.