

DEPARTMENT OF ORAL DENTISTRY AND REGENERATION
PROGRAM IN ORAL AND MAXILLOFACIAL SURGERY (P)

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FACULTY OF DENTISTRY DAN STOMATOLOGI
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**NUTRITIONAL IMPROVEMENT OF COCONUT RESIDUE VIA FERMENTATION
PROCESS USING EFFECTIVE MICROORGANISMS (EM)**

By

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**Research Report submitted in partial fulfilment of
the requirements for the degree of
Bachelor of Agrotechnology Science (Aquaculture)**

**Department of Fisheries Science and Aquaculture
FACULTY OF AGROTECHNOLOGY AND FOOD SCIENCE
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**FAKULTI AGROTEKNOLOGI DAN SAINS MAKANAN
UNIVERSITI MALAYSIA TERENGGANU**

**PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK ILMIAH I DAN II**

Adalah ini diakui dan disahkan bahawa laporan ilmiah bertajuk:

Nutritional Improvement of Coconut Residue via Fermentation Process Using Effective
.....
Microorganisms (EM).....

oleh..... Anitha a/p Balakrishnan....., No.Matrik UK.13877..... telah
diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan
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I hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged.

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ABSTRACT

A study was conducted to determine the nutritional value of coconut residue produced via fermentation process by using Effective Microorganisms Activated Solution (EMAS). The study was carried out at Freshwater Hatchery and Laboratory of Anatomy and physiology of University Malaysia Terengganu (UMT). In this project, three treatments and three replicates for each treatment was conducted. There were 33 samples were taken in 5 times sampling which on day 0, 3, 7, 14 and 30. The pH value of fermented coconut residue was taken daily. The proximate analysis was conducted for all samples. The moisture content, ash content and crude protein content were increased via fermented with EM while there was decrease of the crude lipid content, crude fibre content and carbohydrate content in fermented coconut residue with EM. By this study, the coconut residue that has upgraded its nutritional value by using Effective Microorganisms (EM) can be commercialized in future. It can be use to produce food for aquatic animals. Its has several potential values in term of a great money-saving tactic because it has a potential low-cost agro-waste in the fish diet, ability to recycle the waste and good source of generating income.

ABSTRAK

Satu kajian telah dijalankan untuk menentukan nilai nutrisi dalam hampas kelapa melalui proses penapaian dengan menggunakan 'Effective Microorganisms Activated Solution (EMAS)'. Kajian telah dijalankan di Hatcheri Air Tawar dan Makmal Anatomi dan Fisiologi, Universiti Malaysia Terengganu (UMT). Dalam projek ini, terdapat tiga rawatan dan setiap rawatan mempunyai tiga replika. Terdapat 33 sampel yang telah diambil dalam 5 kali pensampelan iaitu pada hari 0th, ke-3, ke-7, ke-14 dan ke-30. Nilai pH hampas kelapa telah diambil setiap hari. Analisis proksimat telah dikendalikan untuk semua sampel. Kandungan lembapan, kandungan abu dan kandungan protein mentah telah meningkat melalui proses penapaian dengan Mikroorganisma Effektif (EM) manakala terdapat satu susutan bagi kandungan lemak mentah, kandungan serabut mentah dan kandungan karbohidrat dalam penapaian hampas kelapa dengan Mikroorganisma Effektif (EM). Kajian ini membuktikan bahawa penapaian hampas kelapa dengan menggunakan EM akan meningkatkan nilai nutrisinya dan ini boleh dikomersialkan pada masa depan. Ia boleh menggunakan untuk menghasilkan makanan untuk ikan dan hidupan aquatik yang lain. Selain itu, ia mempunyai beberapa potensi nilai yang menjimatkan wang kerana ia mempunyai satu potensi kos rendah agro sisa dalam diet ikan, keupayaan untuk kitar semula dan juga menjana pendapatan.