PREPARATION AND NUTRITION COMPOSITION OF
FERMENTED *Parkia timoriana* HEAD WASTE

PREPARATION AND NUTRITION COMPOSITION OF FERMENTED *Penaeus monodon* HEAD WASTE

By

Burhanudin Helmi bin Ramli

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Adalah ini diakui dan disahkan bahawa laporan ilmiah bertajuk:
Preparation and Nutrition Composition of Fermented *Penaeus Monodon* Head Waste

oleh Burhanudin Helmi Bin Ramli, No.Matrik UK13370 telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Agroteknologi dan Sains Makanan sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda Sains Agroteknologi (Akuakultur), Fakulti Agroteknologi dan Sains Makanan, Universiti Malaysia Terengganu.

Disahkan oleh:

Penyelia Utama

Nama: MASDUKI MOHAMMAD MORNI

Cop Rasmi: Pensyarah
Jabatan Sains Perikanan dan Akuakultur
Fakulti Agroteknologi dan Sains Makanan
Universiti Malaysia Terengganu
21030 Kuala Terengganu

Tarikh: 3/5/09

Penyelia Kedua (jika ada)

Nama:

Cop Rasmi

Tarikh: .....

DECLARATION

I hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged.

Signature : .....

Name : BURHANUDIN HELMI KAMLI

Matric No : UK 13370

Date : 17 MARCH 2009

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ABSTRACT

A study on fermentation process of *Penaeus monodon* head waste was conducted using Effective Microorganism Activated Solution (EMAS) as inoculants and molasses use as a carbohydrate sources. There are two treatments involve in this experiment that is the fermented shrimp head waste with EMAS and the fermented shrimp head waste without EMAS while the oven dried shrimp head waste act as control. The oven dried shrimp head undergo proximate analysis after been dried for 14 hours at 60°C. The other two treatments were kept at 30°C for 14 days in 6 different airtight containers. Each container filled with 500 g of *Penaeus monodon* head waste. For the fermented shrimp head with EMAS, it were mixed with 25 ml EMAS, 15 ml distilled water and 25 ml molasses and for the fermented shrimp head without EMAS it were mixed with 25 ml molasses and 40 ml distilled water. After the end of the fermentation period, the fermented shrimp head waste with EMAS and the fermented shrimp head waste without EMAS were undergo proximate analysis. During the fermentation period, no changes occur in the pH value to acidic condition that needed for fermentation process to occur. Although there are increasing of the proximate composition like protein, lipid, ash and fiber for the fermented shrimp head waste with EMAS or fermented shrimp head waste without EMAS, but there are no significant difference ($p>0.05$) after the end of the fermentation period. It was concluded that the EMAS are not suitable use as inoculants for fermentation process of the *Penaeus monodon* head waste.

ABSTRAK

Kajian tentang proses penapaian buangan kepala udang harimau *Penaeus monodon* di jalankan dengan menggunakan larutan aktif mikroorganisma efektif (EMAS) sebagai sumber bakteria dan gula merah sebagai sumber kabohidrat. Terdapat dua rawatan yang terlibat dalam eksperimen ini iaitu buangan kepala udang yang di tapaikan menggunakan EMAS dan penapaian buangan kepala udang tanpa EMAS manakala pengeringan kepala udang menggunakan ketuhar bertindak sebagai kawalan. Kepala udang yang di keringkan menggunakan ketuhar akan menjalani analisis proksimat setelah dikeringkan pada 60°C selama 14 jam. Dua rawatan yang lain akan di simpan dalam 6 bekas kedap udara yang berbeza pada suhu 30°C selama 14 hari . Setiap bekas akan di isi dengan 500 gram buangan kepala *Penaeus monodon*. Untuk buangan kepala udang yang di tapaikan menggunakan EMAS,ia akan dicampurkan dengan 25 ml EMAS,15 ml air suling dan 25 ml molasses manakala bagi penapaian buangan kepala udang tanpa EMAS,ia akan di tambah dengan 25 ml molasses dan 40 ml air suling. Setelah tamat proses penapaian, buangan kepala udang yang di tapaikan menggunakan EMAS dan penapaian buangan kepala udang tanpa EMAS menjalani analisis proksimat. Tiada perubahan nilai bacaan pH kepada keadaan yang berasid yang diperlukan untuk berlakunya proses penapaian. Walaupun terdapat peningkatan komposisi analisis proksimat seperti protein, lemak, abu dan serabut untuk buangan kepala udang yang di tapaikan menggunakan EMAS ataupun buangan kepala udang yang di tapaikan tanpa EMAS, tetapi tiada perbezaan signifikan ($P>0.05$) selepas tamat proses penapaian. Secara kesimpulanya, EMAS tidak sesuai di gunakan sebagai sumber bakteria untuk proses penapaian buangan kepala udang *Penaeus monodon*.