PRELIMINARY STUDY ON COLORATION ENHANCEMENT OF *Macrobrachium lanchesteri* USING TURMERIC

By
Mohd Ainul Shah Bin Bachok

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BORANG PITA 8

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PENGAKUAN DAN PENGESAHAN LAPORAN PROJEK ILMIAH I DAN II

Adalah ini diakui dan disahkan bahawa laporan ilmiah bertajuk:
Preliminary study on color enhancement of *Macrobrachium lanchesteri* using turmeric

oleh **Mohd Ainul Shah bin Bachok**, No.Matrik **UK12994** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan **Sains Perikanan dan Akuakultur** 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: LIEW HON JUNG

LIEW HON JUNG
Lecturer
Institute Of Tropical Aquaculture
Universiti Malaysia Terengganu (UMT)
21030 Kuala Terengganu

Cop Rasmi:

Tarikh: **27 APRIL 2009**

.....

Penyelia Kedua (jika ada)

Nama: Dr. HII YII SIANG

Cop Rasmi

DR. HII YII SIANG
Pensyarah
Jabatan Sains Perikanan dan Akuakultur
Fakulti Agroteknologi dan Sains Makanan
Universiti Malaysia Terengganu
21030 Kuala Terengganu

Tarikh: **27 APRIL 2009**

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 : MOHD AINUL SHAH BACHOK

Matric No : UK12994

Date : 3 MAY 09'

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ABSTRACT

In ornamental species pattern and color are two criteria that are the major factor deciding the market value of the ornamental sector. The project's aims are to promote this freshwater shrimps as ornamental species by enhancing the pigmentation through pigmentation induction by using turmeric. In this experiment, *Macrobrachium lanchesteri* was use as selected species. For 8 weeks samples were fed with three different type of diet containing sources of color pigmentation and fed was given twice per day at 0900 and 1800. After 8 week, sample was measured and analysis any changes in physical color changes. Samples were killed and crude for extraction of pigmentation from the muscles of sample. The solution from extraction then was scan by using spectrophotometer from wavelength 800 nm to 400 nm. Analysis of graph of wavelength (nm) against absorption was used to determined successful on enhance pigmentation. From the experiment, feeding performances and acceptability show no significant different ($P>0.05$) for all treatment. In color analysis, turmeric show the highest absorption in shrimp body. The outcome of this experiment prove that turmeric can be one of natural sources of color pigmentation for enhancing coloration of ornamental species.

ABSTRAK

Corak dan warna adalah 2 kriteria yang utama dalam sektor ikan hiasan yang berperanan untuk menetukan harga pasaran di dalam sektor ikan hiasan sendiri. Sasaran projek kajian ini adalah untuk mempromosikan udang air tawar sebagai salah satu speseis di dalam industri ikan hiasan melalui peningkatan warna dengan menggunakan kunyit sebagai sumber warna asli. *Macrobrachium lanchesteri* adalah spesies udang yang digunakan di dalam projek kajian ini. Sampel diberi makan dengan 3 jenis makanan yang mengandungi sumber pewarnaan yang berbeza selama 8 minggu dan makanan diberikan 2 kali sehari pada 0900 dan 1800.Selepas 8 minggu, sampel diukur dan pemerhatian terhadap perubahan fizikal dan warna dijalankan. Sampel juga akan dibunuh dan dihancurkan bagi mendapatkan pigment-pigment warna yang terdapat pada bahagian otot udang. Larutan hasil daripada pengekstrakkan akan di uji menggunakan spectrophotometer dari panjang gelombang 800 nm sehingga 400 nm. Analisa graf panjang gelombang (nm) melawan penyerapan digunakan bagi menentukan kejayaan projek ini dalam meningkatkan pigment-pigment warna. Kajian mendapati tiada perbezaan ($P>0.05$) dalam penerimaan makanan oleh kesemua diet. Kunyit juga menunjukkan penyerapan warna tertinggi dalam badan udang. Hasil akhir daripada kajian ini menunjukkan bahawa kunyit boleh dijadikan sebagai salah satu sumber warna yang asli dalam kaedah untuk meningkatkan wana dalam sektor ikan hiasan.