





**EFFECT OF NIGHT FEEDING ON GROWTH PERFORMANCE AND PROTEIN  
UTILITIES OF AFRICAN CATFISH (*Clarias gariepinus*)**

**By**

**Ismail B. Sulaiman**

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

**Department of Fisheries science and Aquaculture  
FACULTY OF AGROTECHNOLOGY AND FOOD SCIENCE  
UNIVERSITY MALAYSIA TERENGGANU**

**2009**

This project report should be cited as:

Sulaiman, I. 2009. Effect of night feeding on growth performance and protein utilities of *Clarias gariiepinus*. Undergraduate thesis, Bachelor of Agrotechnology Science (Aquaculture), Faculty of Agrotechnology and Food Science, Universiti Malaysia Terengganu, Terengganu. 35p.

No part of this project report may be reproduced by any mechanical, photographic, or electronic process, or in the form of phonographic recording, or may it be stored in a retrieval system, transmitted, or otherwise copied for public or private use, without written permission from the author and the supervisor(s) of the project.



**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:  
Effect of night feeding on growth performance and protein utilities of .....

*Clarias gariepinus* .....

oleh... Ismail B. Sulaiman ....., No.Matrik ...UK13110..... telah  
diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan  
kepada Jabatan Agroteknologi dan Sains Makanan ..... sebagai memenuhi  
sebahagian daripada keperluan memperoleh Ijazah Sarjana Muda  
Sains Agroteknologi (Akuakultur) ....., Fakulti

Agroteknologi dan Sains Makanan, Universiti Malaysia Terengganu.

Disahkan oleh:

Penyelia Utama

Nama: **MASDUKI MOHAMMAD MORNI**  
Pensyarah

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

Tarikh: 5/5/09

.....

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 : ISMAIL BIN SULAIMAN .....

Matric No : UK 13110 .....

Date : 9 MEI 2009 .....

## ACKNOWLEDGMENT

Alhamdulillah, the greatest grateful to Allah S.W.T. for His blessed. I have completed my Final Year Project, although there were so many obstacles I have to go through. In this opportunity, first of all, I would like to thank my supervisor, Mr. Masduki Mohammad Morni for being kind and patient in giving comments, guidance and supervision

Besides, I would like to thank the hatchery staffs for help me to run this project and also for their cooperation and permission to use facilities in the hatchery. To Mdm. Faridah Bte. Musa for guidance in Anatomy and Physiology Laboratory and to Mdm.Nur Asma Bte Ariffin, thanks a lot for all her spiritual support and assistance that really helps me.

Last but not at least, thanks to my family and friends especially PG. Mohd Nor Abdullah B. PG Alimudin and Nasarudin B. Patawari because helping me a lot in succeeding this study.

## ABSTRACT

This study aimed the effect of night feeding on *Clarias gariepinus* were tested under 2 types of feeding session and 2 types of feeding frequency. The treatment 1 was the fish where fed twice at night, treatment two has the fish fed three times at night and in treatment 3, the fish were fed twice at day. The influence of night feeding on weight gain, feed consumed, protein composition and nutrient utilization were estimated. The fish fed at day show higher weight gain (23.854g) compared the fish fed at night (19.953 g in treatment 1 and 20.392 g in treatment 2) but low in protein composition (57.16 % in treatment 3) and nutrient utilization. However, no significant different observed in term of final body weight in Duncan's Analysis. The higher weight gain affected by water temperature and stocking densities. The protein composition in body found higher in treatment 1 which fed twice at night (70.91%) and this result related to the metabolism and behavior of fishes at night. The fishes fed at night with 3 times feeding frequency did not show any significant different with fish fed twice at night even though higher digestibility observed (83.38%). The study concluded that night feeding with two times feeding frequency was the best to both growth rate and protein utilities for *C. gariepinus*.



## ABTRAK

Kajian ini telah mensasarkan kesan sesi memberi makanan kepada ikan keli Afrika pada waktu malam dan ikan telah dikaji di bawah dua sesi memberi makan dan dua jenis kekerapan memberi makan. Bagi rawatan 1, ikan telah diberi makan dua kali sehari pada waktu malam, 3 kali sehari pada waktu malam dalam rawatan 2 dan ikan di dalam rawatan 3 diberi makan 2 kali sehari pada waktu siang. Pengaruh sesi makan pada waktu malam terhadap peningkatan berat, jumlah makanan yang dimakan, komposisi protein dan penggunaan nutrient telah dikira. Ikan yang diberi makan pada waktu siang memberi peningkatan berat yang paling banyak (23.854g) jika dibandingkan dengan ikan yang diberi makan pada waktu malam (19.953 g di dalam rawatan 1 dan 20.392 g di dalam rawatan 2) tetapi mempunyai kandungan protein yang rendah (57.16 % di dalam rawatan 3). Walaubagaimanapun, tidak ada perbezaan yang ketara di dalam peningkatan berat ketiga-tiga rawatan. Peningkatan berat yang tinggi mempunyai kaitan dengan suhu air dan kepadatan ikan. Komposisi protein didapati tinggi didalam rawatan 1 dimana ikan diberi makan dua kali sehari pada malam (70.91%) dan ianya berkaitan dengan kadar metabolisma dan kelakuan ikan pada waktu malam. Ikan yang diberi makan 2 kali sehari dan 3 kali sehari pada waktu malam tidak memberikan perbezaan yang ketara walaupun ikan yang diberi makan 3 kali sehari pada waktu malam mempunyai kadar penghadaman yang tinggi (83.38%). Kajian ini memutuskan bahawa memberi makan ikan 2 kali sehari pada waktu malam adalah yang terbaik untuk kedua-dua kadar tumbesaran dan penggunaan protein bagi *C. gariepinus*