FOOD CONVERSION BUDGET IN AFRICAN CATFISH, *Clarias gariepinus*, FINGERLINGS UNDER TWO DIFFERENT FEEDING FREQUENCY PATTERNS

SUHAILI ISHAK

FAKULTI AGROTEKNOLOGI DAN SUMBER MANUSIA
UNIVERSITI MALAYSIA TERENGGANU

2009

Food conversion budget in african catfish, Clarias gariepinus, fingerlings under two different feeding frequency patterns / Shahidi Ishak.

Lihat sebelah

FOOD CONVERSION BUDGET IN AFRICAN CATFISH, *Clarias gariepinus*, FINGERLINGS UNDER TWO DIFFERENT FEEDING FREQUENCY PATTERNS

By

Shahidi Bin Ishak

Research Report submitted in partial fulfillment of
the requirements 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:

Shahidi, I. 2009. Food conversion budget in African catfish, *Clarias gariepinus*, fingerlings under two different feeding frequency patterns. Undergraduate thesis, Bachelor of Agrotechnology Science (Aquaculture), Faculty of Agrotechnology and Food Science, Universiti Malaysia Terengganu, Terengganu. 42p.

BORANG PITA 8

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:
Food Conversion Budget In African Catfish, *Clarias gariepinus*, Fingerlings Under Two Different Feeding Frequency Patterns.

oleh Shahidi Bin Ishak, No.Matrik UK13416 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: PROF MADYA DR. ANUAR BIN HASSAN
TIMBALAN PENGARAH
INSTITUT AKUAKULTUR TROPIKA
UNIVERSITI MALAYSIA TERENGGANU (UMT)
21030 KUALA TERENGGANU.

Cop Rasmi:

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 : SHAHIDI ISHAK

Matric No : 4K 13415

Date : 17 MARCH 2009

ACKNOWLEDGMENT

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

Sincere thanks to my family, my father, Ishak bin Ahmad, who always being there for me when I need money to complete my projects. Also thanks to my mother, Zuraida binti Abdul Mutalib, for being understand and always give me advices. Not forgotten, thanks to my brother, Shafiz bin Ishak that also study in University Malaysia Terengganu which always help me.

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 Dr. Asma, thanks a lot for all her spiritual support and assistance that really helps me.

For all my housemates, Alip, Jan, Caer, Pendi, Bon, Pizi and also coursemates, thank you very much. I appreciate you all.

ABSTRACT

This study was conducted to determine the effect of feeding frequency patterns on the growth parameters of *Clarias gariepinus* fingerlings. Four hundred and eighty (480) African catfish fingerlings were reared under two different feeding patterns. Fingerlings under first feeding patterns (P_1) were fed during day-light and for fingerlings under two feeding patterns (P_2) were fed on full-day basis. Both feeding patterns have different feeding frequencies; one time feeding, two times feeding, three times feeding and four times feeding. The daily amount food consumed was found to be affected directly by both feeding frequency and food deprivation time. Based on the results, the growth rate was found to be lower in fingerlings fed once daily, while as the feeding frequency increase. The growth rates of fish in P_2 were always higher than those of fish in P_1. When the feeding frequency patterns were practiced, the food conversion ratio increase and the results ranged from 0.9504 – 1.3598. The percentage of consumed food that used for basic metabolism and growth increased with feeding frequency for both P_1 and P_2. However, the gross efficiency was reduced with frequency increase. The best value of gross efficiency is 0.966 which fingerlings fed twice daily at day-light basis. Within these results, the optimum feeding frequency was determined and the maximum growth rate is obtained. A value energy budget occurs.

ABSTRAK

Kajian ini telah dijalankan untuk mengkaji kesan kekerapan memberi makanan pada waktu yang berlainan terhadap parameter tumbesaran anak ikan keli Afrika (*Clarias gariepinus*). Empat ratus lapan puluh anak ikan keli Afrika telah dikawal di bawah dua waktu yang berbeza bagi kekerapan makanan yang berlainan. Bagi anak ikan di bawah jenis pemakanan pada waktu yang pertama (P_1), akan diberi makan sebanyak satu kali, dua kali, tiga kali dan empat kali pada waktu siang sahaja. Manakala bagi anak ikan yang di bawah jenis pemakanan pada waktu yang kedua, akan diberi makan sebanyak satu kali, dua kali, tiga kali dan empat kali pada waktu siang dan malam. Jumlah makan yang diberi pada setiap hari mendapat kesan secara terus daripada kedua-dua kekerapan makanan dan juga waktu pemakanan ikan. Berdasarkan dari keputusan yang di perolehi, kadar pembesaran anak ikan sangat rendah apabila di beri makan satu kali sehari sahaja. Kadar pembesaran anak ikan akan meningkat apabila jumlah kekerapan makanan juga meningkat. Kadar pembesaran anak ikan pada P_2 sering tinggi berbanding anak ikan pada P_1. Apabila kekerapan makanan yang berlainan diamalkan, nisbah pertukaran makanan akan meningkat seiring dengan peningkatan kekerapan makanan dan julat nilainya ialah di antara 0.9504–1.3598. Jumlah peratus makanan yang digunakan untuk metabolisma dan tumbesaran meningkat sejajar dengan peningkatan kekerapan makanan yang diberi. Walaubagaimanapun, pembesaran secara berkesan menurun apabila kekerapan makanan meningkat. Nilai yang paling bagus untuk parameter ini ialah 0.966 di mana anak ikan di beri makan sebanyak dua kali sehari pada waktu siang sahaja. Berdasarkan keputusan ini, jumlah kekerapan makanan yang optimum telah diketahui dan tumbesaran paling tinggi juga di perolehi. Nilai anggaran tenaga di perolehi.