

THE EFFECT OF THE CORROSION OF STEEL IN
CONCRETE AND THE PROTECTION OF REINFORCING
Steel Reinforcement

STEEL REINFORCEMENT

REINFORCEMENT OF CONCRETE AND THE PROTECTION OF
STEEL REINFORCEMENT

4N 5669

1100057970



LP 32 FASM 1 2007



1100057970
Effect of feed additive (carrot) on early growth, survival rate and
pigmentation of Lampam Jawa (Puntius gonionotus). / Siti
Faridah Mohd.

PERPUSTAKAAN SULTANAH NUR ZAHIRAH
UNIVERSITI MALAYSIA TERENGGANU (UMT)
21030 KUALA TERENGGANU

1100057970		

Lihat sebelah

HAK MILIK
PERPUSTAKAAN SULTANAH NUR ZAHIRAH UMT

**Effect of Feed Additive (Carrot) on Early Growth, Survival Rate and
Pigmentation of Lampam Jawa (*Puntius gonionotus*)**

Siti Faridah bte Mohd

**This thesis is submitted in partial fulfillment of the requirement of the degree of
Bachelor of Science in Agrotechnology (Aquaculture)**

**FACULTY OF AGROTECHNOLOGY AND FOOD SCIENCE
UNIVERSITI MALAYSIA TERENGGANU**

2007

1100057970

This project report should be cited as:

Siti Faridah, M. A study on the Effect of Feed Additive (Carrot) on Early Growth, Survival Rate and Pigmentation of Lampam Jawa (*Puntius gonionotus*). Undergraduate thesis, Bachelor of Science in Agrotechnology (Aquaculture), Faculty of Agrotechnology and Food Science, Universiti Malaysia Terengganu, Terengganu. 67p.

No part of this project may be reproduced by any mechanical, photographic, or electronic process, or in the form of phonographic recording, nor 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.

ACKNOWLEDGEMENTS

Praise and glory be to ALLAH the almighty for the gift which has granted me the strength and determination to complete this thesis. First of all, I would like to express my appreciation and gratitude to my supervisor, Dr. Hamid Khoda Bakhsh for his patience, guidance, invaluable assistance and criticism. I also would like to extend my warmest thanks to my family especially to my mom and dad for their never ending love and support who keep me strong. I am deeply indebted to my course mate (Radiah, Najmudin, Zuraidah and Hamizah) and all those who had contributed directly or indirectly.

May ALLAH shower His blessings upon all of us. Thank you.

ABSTRACT

Lampam jawa (*puntius gonionotus*) Javanese carp is from Indonesia and convenient to culture (Keith, 1978). This species is convenient to culture. The culture of *Puntius gonionotus* was carried out at the Freshwater Hatchery, University Malaysia Terengganu (UMT). The fish was prepared from Manir, Kuala Terengganu as local supplier. This study was conducted to evaluate the effects of different feed additives (percentage of carrot) on growth rate parameters such as specific growth rate (SGR), survival and pigmentation of lampam jawa, as well as determination of protein content of pellet and fish tissue in different treatments. The important water quality variables (pH, DO and temperature) were measured during the trial. Four treatments were used for this study and all fishes were fed with four different diets (Control, Diet 1, Diet 2 and Diet 3) during 8 weeks period. The analysis of SGR indicated significant difference in growth of fish between all dietary groups ($P < 0.05$). This study showed that Diet 3 (30% of carrot) was the best diet in growth improvement of lampam jawa. Analysis of moisture, ash and lipid were not influenced the survival and growth of *Puntius gonionotus*. But, the percentage of crude protein content in tissue was higher in Diet 3. The ANOVA analysis showed a significant difference of crude protein in tissue from all dietary groups ($P < 0.05$). Species of *Puntius gonionotus* did not respond to colour pigmentation.

ABSTRAK

Lampam jawa (*puntius gonionotus*) adalah ikan kap jawa yang berasal dari Indonesia dan mudah untuk ditenak (Keith, 1978). Kajian ke atas *Puntius gonionotus* dijalankan di Hatcheri Air Tawar, Universiti Malaysia Terengganu dan Manir, Kuala Terengganu merupakan pembekal tempatan. Kajian ini dijalankan untuk menilai kesan perbezaan peratusan makanan tambahan (lobak merah) ke atas parameter kadar pertumbuhan seperti kadar pertumbuhan spesifik (SGR), kadar hidup, pewarnaan lampam jawa, seperti penentuan kandungan protein dalam palet dan tisu melalui rawatan yang berbeza. Parameter air (pH, DO dan suhu) yang penting juga di ukur dalam percubaan ini. Empat jenis rawatan digunakan dalam kajian ini dan ikan diberi makan dengan empat jenis diet yang berlainan (Kontrol, Diet 1, Diet 2 dan Diet 3) selama 8 minggu. Analisis data untuk kadar pertumbuhan spesifik mempunyai nilai yang berbeza ($P < 0.05$) antara kumpulan diet. Kajian ini menunjukkan Diet 3 (30% lobak merah) adalah diet yang terbaik untuk tumbesaran lampam jawa. Analisis untuk kelembapan, abu dan lemak adalah tidak mempengaruhi kadar hidup dan pertumbuhan *Puntius gonionotus*. Tetapi peratusan protein yang terkandung dalam tisu ikan adalah tinggi untuk Diet 3. Analisis ANOVA menunjukkan nilai berbeza ($P < 0.05$) bagi protein yang terkandung dalam tisu untuk semua kumpulan diet. Tidak terdapat pigmen bagi spesies *Puntius gonionotus*.