

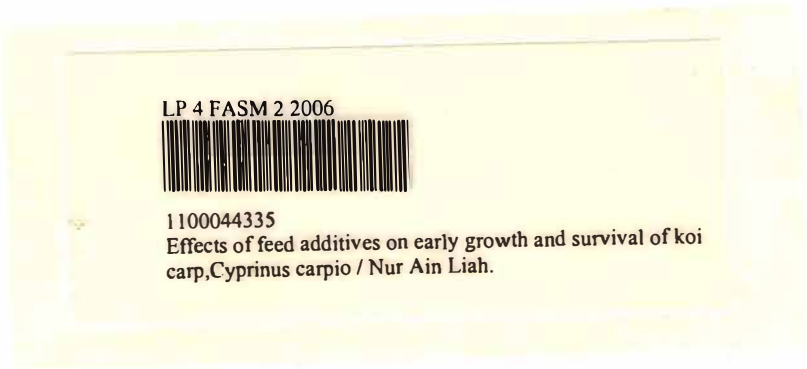
EFFEKS TERHADAP KANDUNGAN KARBON DAN NITROGEN  
DALAM AKRILAM, *Chondrus crassus*

MURAH DITAMBAH

FACULTY OF BIOTECHNOLOGY AND FOOD SCIENCE  
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**EFFECTS OF FEED ADDITIVES ON EARLY GROWTH AND SURVIVAL  
OF KOI CARP, *Cyprinus carpio*.**

**Nur Ain Bt. Liah**

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

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## ABSTRACT

The study on the effect of feed additives on early growth and survival of koi carp, *Cyprinus carpio* was carried out at freshwater hatchery, Kolej Universiti Sains dan Teknologi Malaysia from August to December 2005. This experiment consist of three treatments; diet 1, as a control (Cargill starter pellet), diet 2 (Cargill starter pellet with 3% fish oils) and diet 3 (Cargill starter pellet with 6% fish oils). Koi fry with initial total length of 3.5 to 4 cm were stocked in separated 30L aquaria with stocking density of 30 fry per aquarium. The fry were fed at 5% of their body weight with treatment diet twice a day for 4 weeks. Weight and total length of each fry were measured weekly. The number of dead fish were counted and recorded daily. To maintain the water quality at optimum level, all the aquaria were aerated throughout the study and 70% of water volume were changed daily. The result indicated that diet 3 with 6% fish oils is the best diet for the growth and survival of the fry followed by diet 2 and diet 1. Based on the result, it shows that diet with additives fish oils will increase the total length and weight gain of koi. In this study of survival rate, diet 2 is more economic compared with diet 3. This is due to diet 2 does not have significant difference compared diet 3.

## ABSTRAK

Kajian ke atas kesan makanan tambahan bagi pertumbuhan awal dan kemandirian ikan koi, *Cyprinus carpio* telah dijalankan di 'hatchery' air tawar, Kolej Universiti Sains dan Teknologi Malaysia pada Ogos sehingga Disember 2005. Eksperimen ini terdiri daripada 3 diet iaitu diet 1, sebagai kawalan (Cargill starter pellet), diet 2 (Cargill starter pellet ditambah 3% minyak ikan) dan diet 3 (Cargill starter pellet ditambah 6% minyak ikan). Anak ikan koi dengan panjang awal 3.5 cm hingga 4.0 cm dimasukkan ke dalam akuarium 30L yang berasingan dengan kepadatan 30 ekor setiap akuarium. Anak ikan diberi makan berdasarkan 5% daripada berat badan sebanyak dua kali sehari selama 4 minggu. Berat dan panjang keseluruhan ikan diukur setiap minggu. Ikan yang mati dikira dan direkod setiap hari. Bagi mengekalkan kualiti air pada paras yang optimum, semua akuarium diberi pengudaraan sepanjang eksperimen dan 70% air ditukar setiap hari. Keputusan menunjukkan diet 3 bersama 6% minyak ikan merupakan diet terbaik bagi pertumbuhan dan kemandirian anak ikan diikuti dengan diet 2 dan diet 1. Berdasarkan keputusan yang diperolehi, ia menunjukkan diet yang ditambah minyak ikan akan meningkatkan panjang keseluruhan dan berat ikan koi. Dalam kajian ke atas kadar kemandirian, diet 2 lebih ekonomi berbanding diet 3. Ini disebabkan oleh diet 2 tidak mempunyai perbezaan dari segi statistik dengan diet 3.