

THE EFFECTS OF DIFFERENT PERCENTAGE OF PROTEIN  
CONCENTRATIONS OF JUVENILE *Clarias macrocephalus*

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THE EFFECTS OF DIFFERENT PERCENTAGE OF PROTEIN ON  
GROWTH OF JUVENILE *Clarias macrocephalus*

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## ABSTRACT

An experiment to determine the growth rate in terms of weight and length of juvenile *C. macrocephalus* using four diets with different percentage of protein and was carried out from September 2004 to November 2004. The diets consist of 20%, 27%, 34%, and 40% of protein. From the results obtained, the highest growth rate was recorded in Tank D (40%) during week 6 and the lowest growth rate was in Tank A (20%) during week 6. Based on statistical analysis there was no significant difference towards the survival rate of the juvenile *C. macrocephalus* using the four different diets in this experiment. In addition, diet proteins for 20% and 27% showed no significant difference in terms of weight meanwhile diet proteins for 27% and 40% showed no significant difference in terms of length. Throughout the experiment the overall range of water parameters displayed minor differences in values except for the water quality for ammonium concentration which ranged from 0.020 ppm to 0.030 ppm where the highest ammonium concentration was recorded in Tank D. Overall the juvenile *C. macrocephalus* showed higher growth in higher percentage of protein.

## ABSTRAK

Satu eksperimen bagi menentukan kadar pertumbuhan juvenil *C. macrocephalus* dengan menggunakan empat diet yang mengandungi peratus protein yang berbeza telah dijalankan dari bulan Oktober 2004 hingga November 2004. Diet-diet yang digunakan terdiri daripada 20%, 27%, 34%, 40% protein. Dari keputusan yang diperolehi, kadar pertumbuhan tertinggi bagi juvenil *C. macrocephalus* adalah dalam Tangki D (40%) manakala yang terendah adalah dalam Tanki A. Berdasarkan analisis statistik, tiada kewujudan perbezaan ketara bagi kadar hidup juvenil *C. macrocephalus* dalam setiap tangki. Selain itu, diet protein 20% dan 27% tidak menunjukkan perbezaan ketara dari segi berat badan manakala diet protein 27% dan 40% juga tidak menunjukkan perbezaan ketara dari segi panjang badan. Sepanjang eksperimen, parameter air dalam setiap tangki tidak menunjukkan perbezaan ketara dan terdiri dalam jurang yang agak sama. Namun terdapat perbezaan bagi kualiti air iaitu kepekatan ammonium iaitu dari 0.020ppm hingga 0.030ppm di mana kepekatan ammonium yang tertinggi direkod dalam Tanki D. Secara keseluruhan, juvenile *C. macrocephalus* menunjukkan kadar pertumbuhan yang lebih tinggi dengan menggunakan peratus protein yang tinggi.