

GROWTH AND SURVIVAL OF  
ANGELFISH (*Pterophyllum spp.*) LARVAE  
RAISED UNDER DIFFERENT DIETS

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FACULTY OF FISHERIES AND MARINE SCIENCE  
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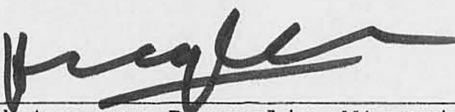


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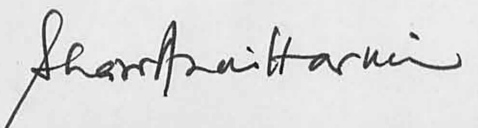
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Larvae Raised Under Different  
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Dengan ini disahkan bahawa saya telah menyemak laporan akhir projek ini dan

- (i) semua pembedaan yang disarankan oleh pemeriksa - pemeriksa telah dibuat, dan
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GROWTH AND SURVIVAL OF  
ANGELFISH (*Pterophyllum* spp.) LARVAE  
RAISED UNDER DIFFERENT DIETS

By

ANG LIM HIN

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## Abstrak

Kajian ke atas tumbesaran dan kemandirian larva ikan 'angel' (*Pterophyllum* spp.) telah dijalankan dengan menggunakan pelbagai diet. Penetasan buatan telur ikan 'angel' dijalankan untuk mendapat larvanya bagi menjalankan kajian ini. Bagi mencapai objektif yang tertera di atas, 4 eksperimen telah dijalankan. Dalam eksperimen 1, larva yang sudah mencapai peringkat renang bebas telah diberikan 3 jenis makanan, iaitu infusoria (kawalan), rotifer (rawatan 1) dan kuning telur (rawatan 2) untuk menentukan kadar kemandiriannya selepas 6 hari. Dengan berpandukan eksperimen 1, satu lagi diet baru telah ditambahkan dalam eksperimen 2, iaitu *Artemia*. Tujuan eksperimen 3 dilakukan adalah bertujuan untuk menentukan masa yang paling sesuai untuk menggantikan *Artemia* dengan diet lain, *Moina*. Dalam eksperimen 4, kajian telah dijalankan untuk mendapatkan/menentukan masa yang paling sesuai untuk menggantikan *Artemia* dengan makanan tiruan. Setiap rawatan mempunyai tiga replikat.

Pada akhir kajian didapati kadar kemandirian larva ikan angel daripada eksperimen 1 adalah sangat rendah. Julat kadar kemandirian ialah daripada 0 % kepada  $10.67 \pm 6.11\%$ . Secara langsung, ia menggambarkan bahawa rawatan makanan yang diberikan kepada larva ikan 'angel' itu tidak berapa sesuai. Dalam eksperimen 2, kadar

kemandirian larva ikan 'angel' yang diberi makanana *Artemia* adalah paling tinggi, iaitu  $98.33 \pm 2.89\%$  dan ia menunjukkan perbezaan bererti ( $P < 0.05$ ) dengan rawatan lain. Daripada eksperimen 3 yang dijalankan, didapati masa yang paling sesuai untuk menggantikan *Artemia* nauplii dengan *Moina* ialah pada hari ke-6 dalam jangkamasa pengkulturan. Keputusan eksperimen 4 menunjukkan bahawa makanan tiruan tidak sesuai untuk menggantikan *Artemia* sebagai makanan kedua.

Daripada keputusan kajian di atas, dapat disimpulkan bahawa jangkamasa (hari) dan makanan yang paling sesuai untuk pemeliharaan larva ikan 'angel' adalah seperti di bawah :-

Hari pertama hingga hari ke-5 - *Artemia* nauplii

Hari ke-6 hingga hari ke-9 - *Moina*



## Abstract

A study on growth and survival of angelfish (*Pterophyllum* spp.) larvae raised under different diets was carried out. The larvae for the above study were raised artificially. In order to achieve the above-mentioned objective, four experiments were done. In experiment 1, free swimming larvae were fed with three types of diet :- infusoria (as control), rotifer (treatment 1) and mash egg yolk (treatment 2) to determine their survival rate after a period of six days. Based on experiment 1, experiment 2 was conducted using an additional diet, *Artemia*. In experiment 3, study was conducted to determine the suitable time for replacing *Artemia* with *Moina*. In experiment 4, the study was conducted to determine suitable time for replacing *Artemia* with artificial diet. All treatments were done in triplicate.

In experiment 1, the survival rate of the angelfish larvae in all treatments was very low (ranged from 0% to  $10.67 \pm 6.11\%$ ) suggesting that the treatment diets were not suitable. In experiment 2, larvae fed with *Artemia* nauplii recorded the highest survival rate ( $98.33 \pm 2.89\%$ ) and it is statistically significant ( $P < 0.05$ ) from other treatments. In experiment 3, it was found that the suitable time to replace *Artemia* nauplii with



*Moina* was on day 6 of culturing period. The study of artificial diet in experiment 4 showed that this diet is not suitable to replace *Artemia* nauplii as alternative food.

From the results of this study, it may be concluded that a suitable diet for larval rearing of angelfish are as below :

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