THE EFFECT OF DIFFERENT PHOTOPERIOD ON SURVIVAL AND MORPHOLOGICAL CHANGES OF NILE TILAPIA (*Oreochromis niloticus*) FRY

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The effect of different photoperiod on survival and morphological changes of nile tilapia (oreochromis niloticus) fry / Ami Ruslan Haji Mohd Ruslan.

Lihat sebelah

THE EFFECT OF DIFFERENT PHOTOPERIOD ON SURVIVAL AND MORPHOLOGICAL CHANGES OF NILE TILAPIA (*Oreochromis niloticus*) FRY

By

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Research Report submitted in partial fulfillment of the requirements for the degree of Bachelor of Science (Marine Biology)

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DEPARTMENT OF MARINE SCIENCE
FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
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DECLARATION AND VERIFICATION REPORT

FINAL YEAR RESEARCH PROJECT

It is hereby declared and verified that this research report entitled:

The Effect of Different Photoperiod On Survival And Morphological Changes Of Nile Tilapia (*Oreochromis niloticus*) Fry by Ami Ruslan b. Hj Mohd Ruslan , Matric No. UK 18427 have been examined and all errors identified have been corrected. This report is submitted to the Department of Marine Science as partial fulfillment towards obtaining the Degree of Science (Marine Biology), Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

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LIST OF ABBREVIATIONS

°C	-	degree celcius
L	-	liter
ppt	-	part per thousand
%	-	percent
cm	-	centimeter
<	-	less than
>	-	more than
g	-	gram

ABSTRACT

Long-day photoperiods are considered as an effective managerial tool in manipulating fish growth and morphology in a number of fish species. In this study, three different photoperiod regimes were exposed to Nile tilapia (*Oreochromis niloticus*) fry in order to determine the fish survival. Besides that, the other purpose of this study is also to investigate the effect of different photoperiods toward fish morphological changes. Fish total length, TL fish body depth, BD and deformities were accessed at three different photoperiod treatments of T1(12L:12D), T2(16L:8D), T3(24L:0D), and control. Growth and development of the fries increased with increasing photoperiod duration in all treatments throughout the two weeks experiment. The best performance for TL and BD was recorded in treatment with continuous light (24L:0D). No deformities was observed in all treatments conducted in this study. The highest percentage of survival rate was recorded at photoperiod T3(24L:0D) and the lowest was at T1 (12L:12D). The results from this study indicate that extended light increases the growth of Nile tilapia fry because during this stage, the fish are more sensitive with light and also other environmental factors.

KESAN PENDEDAHAN JANGKAMASA CAHAYA YANG BERBEZA TERHADAP KELANGSUNGAN HIDUP ANAK IKAN TILAPIA, *Oreochromis niloticus* DAN JUGA PERUBAHAN MORFOLOGI.

ABSTRAK

Jangkamasa cahaya yang panjang merupakan satu cara yang berkesan untuk memanipulasikan pertumbuhan dan morfologi sesetengah ikan. Di dalam kajian ini, tiga jangkasamasa cahaya yang berbeza telah digunakan untuk mengetahui kelangsungan hidup anak ikan Nile tilapia (*Oreochromis niloticus*). Selain itu, tujuan lain untuk kajian ini adalah bertujuan untuk mengetahui tentang kesan jangkamasa cahaya yang berbeza terhadap perubahan morfologi ikan ini. Panjang keseluruhan ikan (TL) , kedalaman badan (BD) dan kecacatan ikan dilihat dan diperhati daripada tiga jenis jangkasamasa cahaya yang berbeza iaitu T1(12L:12D), T2(16L:8D), T3(24L:0D) dan juga control. Tumbesaran untuk TL dan BD anak ikan tilapia bertambah dengan penambahan cahaya sepanjang dua minggu eksperimen dijalankan. Kesemua ikan juga menunjukkan pertumbuhan normal bagi semua jangkamasa cahaya. Selepas 15 hari eksperimen dijalankan, pertambahan yang paling tinggi untuk panjang badan dan kedalaman badan dicatatkan di jangkamasa cahaya T3 (24L:0D). Peratus kelangsungan hidup adalah paling tinggi di T3 dan paling rendah pada T1. Keputusan ini menunjukkan pemanjangan cahaya menambah pertumbuhan anak ikan kerana pada peringkat ini, ikan lebih sensitif terhadap perubahan cahaya dan juga faktor-faktor persekitaran yang lain.