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**EFFECTS OF SALINITY ON GROWTH AND SURVIVAL OF TIGER  
GROUPER (*Epinephelus fuscoguttatus*), LARVAE AND JUVENILE**

**By  
NG KOK CHUN**

**Research Report submitted in partial fulfilment of the requirements for the  
degree of Bachelor of Science in Agrotechnology (Aquaculture)**

**DEPARTMENT OF FISHERY SCIENCE AND AQUACULTURE  
FACULTY OF AGROTECHNOLOGY AND FOOD SCIENCE  
UNIVERSITY MALAYSIA TERENGGANU**

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**FAKULTI AGROTEKNOLOGI DAN SAINS MAKANAN  
UNIVERSITI MALAYSIA TERENGGANU**

**PENGAKUAN DAN PENGESAHAN LAPORAN  
PROJEK ILMIAH I DAN II**

Adalah ini diakui dan disahkan bahawa laporan ilmiah bertajuk:  
EFFECTS OF SALINITY ON GROWTH AND SURVIVAL OF TIGER  
GROUPER (*Epinephelus fuscoguttatus*), LARVAE AND JUVENILE  
oleh..... NG KOK CHUN ....., No.Matrik ..... UK13141 ..... telah  
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## DECLARATION

I hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged.

Signature :  .....

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Date : 26 APRIL 2009



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## ABSTRACT

The salinity level is an important factor in fish growing period, for some species of fish; they can grow faster in lower salinity level instead of 30 ppt (sea salinity level). For the species in my study, which is Tiger Grouper (*Epinephelus fuscoguttatus*), is become popular in human consuming especially in Asia. My study is using 6 different level of salinity level, which is 8ppt, 16ppt, 24ppt, 30ppt, 32ppt and 40ppt to test the growth and survival of Tiger Grouper (*E. fuscoguttatus*) larvae and juvenile. I used 12 different aquariums and 6 tanks to setup 6 different salinity system. After the 21 days feeding period, the Tiger Grouper larvae and juvenile is grow differently. For larvae stage, the Tiger grouper in 16ppt aquarium is grow faster compare with others and the survival rate for the entire aquariums is 100% except the 16ppt and 40ppt aquariums which is 90%. For juvenile stage, the Tiger grouper is only survive in 30ppt and 32ppt tanks after 1 week and the best growth rate is obtained in 24ppt tank. The result indicated that the Tiger Grouper (*E. fuscoguttatus*) is growth better in lower salinity level instead of 30ppt (sea salinity level) but they only accept the huge differ level of salinity when they become juvenile.



## ABSTRAK

Tahap kemasinan merupakan satu faktor yang penting dalam tempoh pertumbuhan ikan, untuk beberapa spesies ikan, mereka dapat tumbuh dengan lebih cepat dalam tahap kemasinan yang lebih rendah berbanding dengan 30ppt (tahap kemasinan laut). Untuk spesies ikan dalam eksperimen saya, iaitu Kerapu Harimau (*Epinephelus fuscoguttatus*), sudah menjadi semakin popular dalam pemakanan manusia terutamanya di Asia. Eksperimen saya adalah menggunakan 6 tahap kemasinan yang berbeza iaitu 8ppt, 16ppt, 24ppt, 30ppt, 32ppt, 40ppt untuk membuat ujian terhadap pertumbuhan dan kadar hidup bagi Kerapu Harimau (*E. fuscoguttatus*) dalam peringkat larvae dan juvenil. Saya menggunakan 12 akuariums dan 6 tangki yang berlainan untuk mengaturkan 6 sistem tahap kemasinan yang berbeza. Selepas 21 hari bagi makan, Kerapu Harimau larvae dan juvenile tumbuhbesar dengan beza. Untuk peringkat larvae, Kerapu Harimau dalam 16ppt aquarium tumbuh paling cepat berbanding dengan lain dan kadar hidup untuk semua tahap kemasinan adalah 100% kecuali 16ppt dan 40ppt aquariums, 90%. Untuk tahap juvenil, Kerapu Harimau hidup sahaja dalam tangki 30ppt dan 32ppt selepas satu minggu dan kadar pertumbuhan yang paling tinggi adalah tangki 24ppt. Hasil eksperimen menunjukkan bahawa Kerapu Harimau (*E. fuscoguttatus*) tumbuh dengan lebih cepat dalam tahap kemasinan yang lebih rendah banding dengan 30ppt (tahap kemasinan laut) tetapi mereka menerima sahaja perbezaan tahap kemasinan yang besar semasa mereka memasuki peringkat juvenil.