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MASTER OF SCIENCE

2017

**MORPHOLOGY AND LIFE CYCLE OF
CRUSTACEAN PARASITE, *Lernanthropus* sp
FROM CULTURED SEABASS, *Lates calcarifer***

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INSTITUTE OF TROPICAL AQUACULTURE

UNIVERSITI MALAYSIA TERENGGANU

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**MORPHOLOGY AND LIFE CYCLE OF CRUSTACEAN PARASITE,
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NUR QAMARINA BT. ABDUL KHALID

**Thesis Submitted in Fulfillment of the Requirement for the
Degree of Master of Science
in the Aquaculture Tropical Institute
Universiti Malaysia Terengganu**

2017

DEDICATION

My dedication goes to;

My beloved soulmate, Mohd Shamsul

My sweet little daughter, Nur Syaimaa

My everything, Ma & Ayah

My supportive siblings; Zu, Ngah, Bayih, Atih, Ain, Uni, Nani, Kiram

My inspirative supervisor, Prof. Emeritus Dr. Faizah Shaharom

My happy-go-lucky housemates; Aini, Kak Zam & Kema,

Thanks for the prayers, patience, encouragement and motivation throughout the time spent in completing this thesis, Alhamdulillah.

ABSTRACT

Abstract of thesis presented to the Senate of University Malaysia Terengganu in fulfillment of the requirement for the degree of Master of Science

MORPHOLOGY AND LIFE CYCLE OF CRUSTACEAN PARASITE, *Lernanthropus* sp FROM CULTURED SEABASS, *Lates calcarifer*

NUR QAMARINA BT. ABDUL KHALID

June 2017

Main Supervisor : Prof. Emeritus Faizah Shaharom, Ph.D

Institute : Institute of Tropical Aquaculture

Parasitic crustaceans of *Lernanthropus latis* were isolated from the host, *Lates calcarifer*, obtained from a cage culture in Setiu Wetland, Terengganu. The morphology of the parasite was described with the aid of Scanning Electron Microscope (SEM). A study of life cycle of *L. latis* were also implemented under laboratory condition in which description for each larval developmental stage was conducted with the aid of illustration and SEM. Adult females of *L. latis* with eggs were kept alive in vials containing 20mL of filtered seawater within 27ppt of salinity and incubated at 30°C. The eggs were monitored every hour and the hatching periods were recorded. Three developmental stages were observed, namely, nauplii I, nauplii II, and infective copepodid. The infective copepodids were then transferred into a tank containing 60L of seawater with 150 seabass fingerlings for infection purpose. One fish was sacrificed every 24 hour to inspect the next developmental

stage. As a result, six more stages were obtained within 298 hrs starting from the first day of infection. The stages were known as fixed copepodid I, II, III and IV, preadult, and adult. Parasitic *L. latiss* takes 483 hrs period to complete a life cycle at 30°C of temperature and 27ppt of salinity.

ABSTRAK

Abstrak tesis yang dikemukakan kepada Senat Universiti Malaysia Terengganu sebagai memenuhi keperluan untuk ijazah Sarjana sains

MORFOLOGI DAN KITAR HIDUP PARASIT KRUSTASIA, *Lernanthropus* sp DARI IKAN SIAKAP, *Lates calcarifer* YANG DIKULTUR

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Krustasia parasit *Lernanthropus latis* yang diasingkan daripada perumahannya, *Lates calcarifer*, diperolehi daripada sebuah sangkar di Tanah Bencah Setiu, Terengganu. Morfologi parasit tersebut telah diterangkan dengan bantuan Mikroskop Imbasan Elektron (SEM). Kajian berkenaan kitar hidup *L. latis* telah dilaksanakan dibawah kawalan makmal dimana huraian untuk setiap peringkat perkembangan larva dijalankan dengan bantuan lukisan dan SEM. *Lernanthropus latis* betina matang yang mempunyai telur dan masih hidup diletakkan dalam botol yang mengandungi 20ml air masin bertapis bersaliniti 27ppt dan dieramkan pada suhu 30°C. Telur-telur tersebut diperhatikan setiap jam dan tempoh penetasan direkodkan. Tiga peringkat perkembangan telah didapati iaitu, nauplii I, nauplii II dan kopepodid infektif. Kopepodid infektif kemudian dipindahkan ke dalam tangki yang mengandungi 60L air masin dan 150 ekor anak ikan siakap untuk tujuan jangkitan.

Seekor anak ikan dikorbankan setiap 24 jam untuk mengesan peringkat perkembangan yang seterusnya. Sebagai hasilnya, enam lagi peringkat telah dikesan dalam tempoh 298 jam bermula daripada hari pertama jangkitan. Peringkat-peringkat tersebut dikenali sebagai kopepodid kekal I, II, III dan IV, pra-matang dan matang. Parasit *L. latis* mengambil masa selama 483 jam untuk melengkapkan satu kitaran hidup pada suhu 30°C dan saliniti 27ppt.