

**GROWTH AND POPULATION OF *Perna viridis* IN RAFT
CULTURE AREA IN MUAR COASTAL WATER OF MALAYSIA**

MOHD LUTHFI BIN OMAR

**MASTER OF SCIENCE
UNIVERSITI MALAYSIA TERENGGANU
2014**

**GROWTH AND POPULATION OF *Perna viridis* IN RAFT CULTURE AREA
IN MUAR COASTAL WATER OF MALAYSIA**

MOHD LUTHFI BIN OMAR

Thesis Submitted in Fulfillment of the Requirement for the
Degree of Master of Science in the Institute of Tropical Aquaculture

Universiti Malaysia Terengganu

April 2013

ABSTRACT

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

GROWTH AND POPULATION OF *Perna viridis* IN RAFT CULTURE AREA IN MUAR COASTAL WATER OF MALAYSIA

MOHD LUTHFI BIN OMAR

April 2013

Main Supervisor : Associate Professor Zaleha Kassim, Ph.D.
Co - Supervisor : Professor Emeritus Mohd Azmi Ambak, Ph.D.
Faculty : Institute of Tropical Aquaculture

Growth and population of *Perna viridis* on mussel raft culture in Muar coastal waters were studied from August 2007 until July 2008. Asymptotic length (L_{∞}), growth coefficient (K), natural mortality rates (M), fishing mortality rate (F), total mortality rate (Z), exploitation level (E) and maximum exploitation level (E_{\max}) were calculated using FiSAT software to estimate the population status. From this study, asymptotic length (L_{∞}) was 120.75mm and growth coefficient (K) was estimated at 0.66/year. Total mortality (Z) for *Perna viridis* was 1.83/year, while natural mortality (M) and fishing mortality (F) were 0.94 and 0.89/year respectively. During this study period, the *Perna viridis* growth performance index was (ϕ') 3.98 and the exponent “b” of the length-weight relationship was 2.39. Exploitation level (E) of *Perna viridis* was 0.49 while the maximum allowable limit of exploitation (E_{\max}) was 0.42. Higher exploitation level than maximum exploitation level indicates that the *Perna viridis* in this area was over-exploited.

ABSTRAK

Abstrak thesis yang dikemukakan kepada Senat Universiti Malaysia Terengganu sebagai memenuhi keperluan untuk ijazah Sarjana Sains

PERTUMBUHAN DAN POPULASI *Perna viridis* DI KAWASAN PELANTAR TERNAKAN DI PERAIRAN PANTAI MUAR MALAYSIA

MOHD LUTHFI BIN OMAR

April 2013

Penyelia Utama : Prof. Madya. Dr. Zaleha Kassim
Penyelia Bersama : Prof. Emeritus Dr. Mohd Azmi Ambak
Fakulti : Institut Akuakultur Tropika

Kajian pertumbuhan dan populasi *Perna viridis* di kawasan pelantar kupang di perairan laut Muar telah dijalankan pada Ogos 2007 sehingga Julai 2008. Panjang asimptot (L_{∞}), koefisien pertumbuhan (K), kadar kematian semulajadi (M), kadar kematian penangkapan (F), jumlah kadar kematian (Z), kadar eksploitasi (E) dan kadar eksploitasi maksimum (E_{\max}) telah dikira menggunakan perisian FiSAT untuk menganggarkan status populasi. Daripada kajian ini, panjang asimptot (L_{∞}) adalah 120.75mm dan pertumbuhan koefisien (K) dianggarkan pada 0.66/tahun. Jumlah kadar kematian (Z) *Perna viridis* dianggarkan 1.83/tahun manakala kadar kematian semulajadi (M) dan kadar kematian penangkapan (F) adalah masing-masing 0.94 dan 0.89/tahun. Sepanjang kajian ini, index peningkatan pertumbuhan (ϕ') *Perna viridis* adalah 3.98 dan eksponen "b" dari hubungan panjang-lebar menunjukkan 2.39. Kadar eksploitasi (E) *Perna viridis* pada 0.49 manakala had maksimum eksploitasi (E_{\max}) pula pada 0.42. Kadar eksploitasi yang melebihi had maksimum eksploitasi menunjukkan *Perna viridis* di sini mengalami lebih eksploitasi.