

INCIDENCE AND EFFECT OF HERBIVORY ON NATURAL
REGENERATED AND PLANTED MANGROVE SEEDLINGS

MUR BAHAMAH BT MAHFUDZ

FAKULTI SAINS DAN TEKNOLOGI
UNIVERSITI MALAYSIA TERENGGANU
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Perpustakaan Sultanah Nur Zahirah (UMT)
Universiti Malaysia Terengganu



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PERPUSTAKAAN
UNIVERSITI MALAYSIA TERENGGANU (UMT)
21030 KUALA TERENGGANU

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INCIDENCE AND EXTENT OF HERBIVORY ON NATURAL REGENERATED
AND PLANTED MANGROVE SEEDLINGS

By

Nur Raihanah bt. Mahfodz

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FAKULTI SAINS DAN TEKNOLOGI
UNIVERSITI MALAYSIA TERENGGANU**

**PENGAKUAN DAN PENGESAHAN LAPORAN
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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: **INCIDENCE AND EXTENT OF HERBIVORY ON NATURAL REGENERATED AND PLANTED MANGROVE SEEDLINGS** oleh **Nur Raihanah bt. Mahfodz**, no. matrik: **UK 10621** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Biologi sebagai memenuhi sebahagian daripada keperluan memperoleh Ijazah Sarjana Muda Sains Gunaan (Pemuliharaan Dan Pengurusan Biodiversiti), Fakulti Sains dan Teknologi, Universiti Malaysia Terengganu.

Disahkan oleh:

Penyelia Utama

JAMILAH MOHD SALIM @ HALIM
Pensyarah
Jabatan Sains Biologi
Fakulti Sains dan Teknologi
Universiti Malaysia Terengganu
21030 Kuala Terengganu.

Nama: Cik Jamilah bt. Salim @ Halim

Cop Rasmi:

Tarikh: 9/5/07

Ketua Jabatan Sains Biologi

Nama: Dr. Aziz Bin Ahmad

Cop Rasmi:

DR. AZIZ BIN AHMAD
Ketua
Jabatan Sains Biologi
Fakulti Sains dan Teknologi
Universiti Malaysia Terengganu
21030 Kuala Terengganu

Tarikh: 9/5/07

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LIST OF ABBREVIATIONS

m – meter

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ABSTRACT

Plant species always subjected to herbivory throughout their life cycles from seedling to adult and developing unique interactions between them. This thesis examines herbivory incidence and extent of leaf loss from herbivory of natural regenerated and planted mangrove seedlings. Herbivory survey was conducted on naturally regenerated mangrove seedlings in Bakau Tinggi and Kuala Kemaman, Terengganu, while survey on planted mangrove seedlings was conducted at Tumpat Delta, Kelantan. Three of each young (semi green or flushing leaf) and mature leaf (fully developed leaf) from each lower branch (the first three branches from stem base) and upper branch (the first three branches to the shoot apex) were surveyed using scoring system based on absent and present of herbivory. Extent of damage was based on leaf loss area of <5%, 5-50%, 50-70% and > 75% from total leaf area. Herbivory was common on both natural regenerated and planted mangrove seedlings, but leaves on lower branch showed higher incidence of herbivory damage than upper branch. Similarly, mature leaves had a higher herbivory incidence than young leaves. Possible factors affecting pattern of incidence and extent of herbivory damage are discussed.

KEWUJUDAN DAN TAHAP KEHILAGAN DAUN DARIPADA HERBIVORI PADA ANAK BENIH BAKAU TUMBUH SEMULAJADI DAN DITANAM

ABSTRAK

Tumbuhan sentiasa terdedah kepada herbivor sepanjang kitar hidupnya daripada anak benih kepada dewasa, membentuk interaksi yang unik di antara kedua-duanya. Tesis ini menyiasat kewujudan herbivori dan tahap kehilangan daun daripada herbivori bagi anak benih spesis bukan tumbuh secara semulajadi dan ditanam. Tinjauan herbivori dilakukan kepada anak benih yang tumbuh secara semulajadi di Bakau Tinggi dan Sekepeng, Terengganu dan ditanam di Delta Tumpat, Kelantan. Tiga helai daun muda dan matang daripada setiap dahan bahagian atas (tiga daun pertama daripada pucuk) dan bawah (tiga daun pertama dari dasar tanah) ditinjau kadar herbivori menggunakan sistem skor berdasarkan kehadiran atau ketidakhadiran herbivori. Tahap kerosakan daun adalah berdasarkan kehilangan daun <5%, 5-50%, 50-70%, dan >75% daripada luas keseluruhan daun. Herbivori didapati lazim pada kedua-dua anak benih tumbuh secara semulajadi dan ditanam, tetapi daun dibahagian dahan bawah lebih banyak herbivori berbanding dahan atas. Daun matang menunjukkan lebih banyak herbivori berbanding daun muda. Faktor-faktor yang mungkin mempengaruhi corak herbivori dan tahap herbivori dibincangkan.