

STUDY OF THE GROWTH RATE OF REPLANTED *Rhizophora mucronata*
IN DIFFERENT AGES AT KELANTAN DELTA

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**STUDY OF THE GROWTH RATE OF REPLANTED *Rhizophora mucronata*
IN DIFFERENT AGES AT KELANTAN DELTA**

By

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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: **Study of The Growth Rate of Replanted *Rhizophora mucronata* in Different Ages at Kelantan Delta**, No. matrik: **UK 12537** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Marin sebagai memenuhi sebahagian daripada keperluan memperoleh Ijazah Sarjana Muda Sains (Biologi Marin), Fakulti Pengajian Maritim dan Sains Marin, Universiti Malaysia Terengganu.

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LIST OF SYMBOLS

H_T	Total Height
d_S	Stem Diameter
d_C	Canopy Diameter
N_R	Root Number
V_S	Stem Volume
d_R	Root Diameter
H_R	Root Height
L_R	Root Length
D_R	Root Distance
$d_{S t}$	Top Stem Diameter
$d_{S m}$	Mid Stem Diameter
$d_{S 10}$	Lower Stem Diameter
$d_{R t}$	Top Root Diameter
$d_{R m}$	Mid Root Diameter
$d_{R 10}$	Lower Root Diameter
r	correlation coefficient
cm	centimeter
m	meter
cm ³	centimeter cubic

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ABSTRACT

A study was carried out to determine the growth rate of replanted *Rhizophora mucronata* in different ages at Kelantan Delta. The planning was carried out by cooperation with Kelantan Forestry Department since 2001. Only two species were replanted in Kelantan Delta, *Rhizophora mucronata*(Bakau Kurap) and *Rhizophora apiculata* (Bakau Minyak). But in this study, only species *Rhizophora mucronata* was chosen for growth rate determination. Each island specified by certain age of replanted *Rhizophora mucronata*. Pulau Layang-layang was habited for seven years old age; Pulau Bedal for five years old age while Pulau Kambing for three years old age. That is important to find the status and the development of replanted *R.mucronata*. The observation indicates the growth parameter was decreased through the time of replanting at certain side of stem and root parts.

**KAJIAN KADAR PERTUMBUHAN BAGI POKOK *Rhizophora mucronata* YANG
DITANAM SEMULA MENGIKUT PERBEZAAN UMUR DI DELTA
KELANTAN.**

ABSTRAK

Kajian ini telah dijalankan untuk menentukan kadar pertumbuhan bagi *Rhizophora mucronata* yang terdiri daripada pelbagai umur di Delta Kelantan. Rancangan penanaman semula telah dilaksanakan dengan kerjasama Jabatan Perhutanan Negeri Kelantan sejak tahun 2001. Cuma dua spesies ditanam semula iaitu *Rhizophora mucronata* (Bakau Kurap) and *Rhizophora apiculata* (Bakau Minyak). Tetapi untuk kajian ini, spesies *Rhizophora mucronata* dipilih untuk penentuan parameter pertumbuhan. Setiap pulau adalah khusus untuk *Rhizophora mucronata* yang mempunyai umur tertentu. Pulau Layang-layang diduduki oleh pokok umur 7 tahun, Pulau Bedal oleh pokok umur 5 tahun manakala Pulau Kambing untuk pokok umur 3 tahun. Ini sangat penting dalam menentukan status dan perkembangan *R.mucronata* yang ditanam semula. Kajian menunjukkan kadar pertumbuhan menurun apabila tempoh penanaman pokok bertambah yang dapat dikesan pada bahagian tertentu seperti batang dan akar.