

A STUDY ON THE GROWTH RATE
BETWEEN NATURAL AND TRANSPLANTED SEEDLINGS OF
Rhizophora apiculata BL.

FARIDA HANIM BT ABDUL RAHIM

FACULTY OF APPLIED SCIENCE AND TECHNOLOGY
UNIVERSITI PUTRA MALAYSIA
TERENGGANU

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A study on the growth rate between natural and transplanted seedlings of *Rhizophora apiculata* BL / Faridah Hanim Abdul Rahim.

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21030 KUALA TERENGGANU

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BETWEEN NATURAL AND TRANSPLANTED SEEDLINGS OF

Rhizophora apiculata BL.

BY

FARIDA HANIM BT ABDUL RAHIM

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ABSTRAK

Kajian perbandingan tumbesaran antara anak pokok semulajadi dan anak pokok yang ditanam semula belum dijalankan sepenuhnya. Dua ratus anak pokok *Rhizophora apiculata* BL telah dibawa dari kawasan semulajadinya di Bakau Tinggi, Kemaman ke UPMT untuk ditanam semula bagi kajian perbandingan kadar tumbesaran dan kadar kemandirian. *Rhizophora apiculata* BL dipilih untuk kajian ini kerana ia mempunyai ciri-ciri bakau yang jelas kelihatan seperti akarnya yang unik dan kehadirannya yang sedikit di UPMT. Data-data ketinggian, ukur lilit dan bilangan daun bagi setiap anak pokok dikutip setiap dua bulan. Kadar kemandirian bagi anak pokok yang ditanam semula adalah 91.25%. Walaupun t-test menunjukkan bahawa anak pokok semulajadi tumbuh dengan lebih cepat berbanding anak pokok yang ditanam semula, kadar 65% tumbesaran berbanding anak pokok semulajadi menunjukkan tumbesaran kedua-dua anak pokok adalah sama bagi jangkamasa yang tertentu. Kenaikan purata isipadu anak pokok di Bakau Tinggi ialah 4.25 cm³ manakala di UPMT ialah 2.76 cm³. Purata kehilangan daun bagi setiap anak pokok di Bakau Tinggi ialah 1.65 helai manakala di UPMT ialah 3.86 helai. Kematian anak pokok yang ditanam semula di UPMT mungkin disebabkan oleh tekanan yang dihadapi ketika proses penanaman semula dijalankan. Diketahui bahawa sekitaran anak pokok yang ditanam semula adalah berbeza dengan sekitaran semulajadinya. Sekitaran anak pokok yang ditanam semula di UPMT adalah lebih berpasir dan ditenggelami air ketika musim hujan. Ketika musim tengkujuh, bukaan di mulut muara selalu tertutup dan menyebabkan air hujan dan enapan terperangkap di kebanyakan kawasan sekitar UPMT. Ini membuktikan bahawa penanaman semula di kawasan yang kurang baik keadaan sekitarnya masih boleh diusahakan dengan jayanya.

ABSTRACT

A comparative study of growth between natural and transplanted seedlings is not well documented. Two hundred seedlings of *Rhizophora apiculata* BL were transferred from its natural area at Kemaman to UPMT in an effort to compare their growth and survivability rate. *Rhizophora apiculata* BL was chosen for this study because of their presence is not lush and they have unique flying battress roots. Data of height, circumference and numbers of leaves were collected from each location; UPMT and Bakau Tinggi. The survivability rate of the transplanted seedlings is 91.25% within four month. Although t-test revealed that the growth rate of natural seedlings is faster than the transplanted seedlings, the fact that the transplanted seedlings could grow at 65% the rate of natural seedlings, indicates that given time the growth rate between the two groups of seedlings could be similar. The monthly increment of average volume at Bakau Tinggi is 4.25 cm³ while at UPMT is 2.76 cm³. The average numbers of leaves lost at Bakau Tinggi is 1.65 while at UPMT is 3.86. It was found that the transplanted condition is quite different from the natural condition. It is more sandy and not well flushed. The sea water enters UPMT through an opening at the beach. During monsoon season, the opening was closed and trapped the rainwater and sediments around UPMT. Whole seedlings were drowned and the sediments covered their leaves. The seedlings also shocked during transplanting process, which affected their growth. It can be concluded that, at least for *Rhizophora apiculata* BL species, the effort of transplanting to a non-hospitable condition could be successfully done.