

**A PRELIMINARY STUDY OF *Nypa fruticans* SPEAR FRONDS
LIFE STAGES IN TOK HAJI ISLAND, SETIU, TERENGGANU**

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A PRELIMINARY STUDY OF *Nypa fruticans* SPEAR FRONDS LIFE STAGES IN
TOK HAJI ISLAND, SETIU, TERENGGANU

By
Nur 'Aqilah bt Anuar

Research Report submitted in partial fulfillment of
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DEPARTMENT OF MARINE SCIENCE
FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
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DECLARATION AND VERIFICATION REPORT
FINAL YEAR RESEARCH PROJECT

It is hereby declared and verified that this research report entitled:

A preliminary study of *Nypa fruticans* spear fronds life stages in Tok Haji island, Setiu, Terengganu by Nur'Aqilah Binti Anuar, Matric No. UK 21374 have been examined and all errors identified have been corrected. This report is submitted to the Department of Marine Science as partial fulfillment towards obtaining the Degree of Bachelor of Science (Marine Science), Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

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LIST OF ABBREVIATION

Percentage (%): $\frac{x}{75} \times 100$

ABSTRACT

The spear frond development of this palm is continuous throughout the year but different at the population and individual level. The main objectives are to determine the life stages of spear frond of *Nypa fruticans* and to determine the distribution of *Nypa fruticans* spear frond at Tok Haji Island, Setiu, Terengganu. This study only based on one species at different life stages because different life stages of tree will yield different products. This study was conducted at Tok Haji Island, Setiu, Terengganu. The sampling starts on June and followed by monthly observation until December 2011. During the first sampling, the selected individual of spear frond was tagged and the stage was identified. The height also was measured and recorded. Observation on the tagged spear fronds were done on the next month and continued until December. Six transects and 25 rectangular plots were located in major stands of *Nypa fruticans* at the island. Along the lines, 10m x 10m plot was placed for every 3m distance. In each plots, three random individual either stage 1, 2, 3 or 4 was selected in 3m distance from each other. In the followed months, the observation was done to record the development of the tagged spear frond. From the sampling, *Nypa fruticans* spear frond was distinguish divided into four dynamic life stages which are stage 1, stage 2, stage 3 and stage 4. For the first sampling, the highest percentage for the distribution of the spear frond at the island is from stage 1 (68%) and followed by stage 3 (18.67%), stage 2 (9.33%) and the lowest percentage is from stage 4 (4%). The spear frond height for each stage was determined based on its mean, variance, standard deviation and standard deviation error. The time frame for the spear frond to develop also can determine by mean duration for each stage. The longest mean

duration (month) for spear frond to develop taken by stage 1(2.49 ± 0.25) followed by stage 3 (2.01 ± 0.17), stage 4 (1.55 ± 0.26) and shortest is by stage 2 (0.92 ± 0.08).

ABSTRAK

Proses pembesaran spear frond spesis palma ini adalah berterusan sepanjang tahun tetapi adalah berbeza pada peringkat populasi dan juga pada peringkat individual. Objektif utama kajian ini adalah untuk mengkaji peringkat-peringkat kitar hidup spear frond *Nypa fruticans* dan taburan spear frond *Nypa fruticans* di Pulau Tok Haji, Setiu, Terengganu. Kajian ini hanya dibuat pada satu spesis sahaja mengikut peringkat-peringkat hidupnya kerana setiap peringkat akan menghasilkan jenis produk yang berbeza. Kajian ini di kendalikan di Pulau Tok Haji, Setiu, Terengganu. Persampelan ini dijalankan bermula pada bulan Jun dan di ikuti oleh pemerhatian bulanan sehingga Disember 2011. Semasa persampelan pertama, individu spear frond yang dipilih ditanda dan dikenalpasti peringkat hidupnya. Ketinggiannya juga diukur dan direkodkan. Pemerhatian ke atas spear frond yang ditanda dijalankan pada bulan seterusnya sehingga bulan Disember. Enam transek dan 25 plot bersegi empat tepat telah diletakkan dikawasan majoriti spesis *Nypa fruticans* di pulau itu. Di sepanjang garisan, plot berukuran 10m x10m di tempatkan dengan jarak 3m antara setiap plot. Dalam setiap plot, tiga individu di pilih secara rawak samada peringkat 1, 2 ,3 atau 4 dengan jarak 3m antara satu sama lain. Pada bulan seterusnya, pemerhatian di lakukan untuk merekod pembesaran pada spear frond yang telah ditanda. Daripada persampelan ini, didapati spear frond *Nypa fruticans* terbahagi kepada empat peringkat hidup yang berbeza iaitu peringkat 1, peringkat 2, peringkat 3 dan peringkat 4. Untuk persampelan pertama, peratus tertinggi bagi taburan spear frond di pulau tersebut adalah dari peringkat 1 (68%) dan diikuti oleh peringkat 3 (18.67%), seterusnya peringkat 2 (9.33%) dan peratus terendah adalah dari peringkat 4 (4%). Ketinggian spear frond untuk setiap peringkat telah tentukan berdasarkan purata,

varian, standard deviation, dan standard deviation error. Rangka masa untuk spear frond membesar juga dapat ditentukan melalui purata jangka masa bagi setiap peringkat. Jangka masa paling lama yang diambil untuk spear frond membesar adalah pada peringkat 1 (2.49 ± 0.25) diikuti oleh peringkat 3 (2.01 ± 0.17), seterusnya peringkat 4 (1.55 ± 0.26) dan yang paling singkat ialah peringkat 2 (0.92 ± 0.08).