

ABUNDANCE, DIVERSITY AND DISTRIBUTION OF DIPTEROCARP  
IN SUNGAI BAKUL FOREST, SUNGAI TERENGGANU.

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ABUNDANCE, DIVERSITY AND DISTRIBUTION OF DIPTEROCARP AT BUKIT  
BAUK FOREST, DUNGUN, TERENGGANU.

By  
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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: ABUNDANCE, DIVERSITY AND DISTRIBUTION OF DIPTEROCARP AT BUKIT BAUK FOREST, DUNGUN, TERENGGANU oleh NURHIDAYAH BINTI ISHAK, no. matrik: UK 10501 telah diperiksa dan semua pembedaan 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.

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## LIST OF ABBREVIATIONS

ANOVA	Analysis – of – Variance
a.p.l.	Atas paras laut
a.s.l.	Above sea level
cm	Centimeter
DBH	Diameter at Breast Height
GPS	Global Positioning System
ha	Hectare
H <sub>a</sub>	Hypothesis alternative
H <sub>o</sub>	Hypothesis null
Klx	Kilolux
km	Kilometer
km <sup>2</sup>	Kilometer square
m	Meter
m <sup>2</sup>	Meter square
m <sup>2</sup> / ha	Meter square per hectare
NTFPs	Non-timber forest products
° C	Degree Celsius
%	Percentage

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## ABSTRACT

Study was conducted at Bukit Bauk Forest to assess the composition and structure of dipterocarp trees at three different elevations; lower, middle and higher (45m, 145m and 345m a.s.l.). The objectives of this study are to determine the abundance and diversity of dipterocarp forest at Bukit Bauk Forest and to determine the structure of the dipterocarp forest at Bukit Bauk Forest. The 20 x 50m<sup>2</sup> plot method was performed to determine the composition of dipterocarp with parameters such as Diameter at Breast Height (DBH), height, stem structure and canopy layer. Result showed that 45 dipterocarp species from five genera were recorded at the study site. The genera were Dipterocarpus, Dryobalanops, Hopea, Shorea and Vatica. The total stocking for dipterocarp trees, saplings and seedling per hectare were 150 mature trees per ha, 40 saplings per ha and 37 seedlings per ha. Mean DBH showed the value of 29.12cm while mean height showed the value of 10.2m. The mean value of Shannon – Wiener Index was 1.428. For Menhinick Index, the mean value was 1.5467 and for Evenness Index the mean value was 0.7993. Statistical analysis by using ANOVA showed that number of individuals between elevations were not significant ( $F_{11,35} = 0.631, P > 0.05$ ). The ANOVA value for height ( $F_{11,17} = 1.150, P > 0.05$ ) and DBH ( $F_{11,17} = 1.145, P > 0.05$ ) also were not significant. Hypothesis null were accepted which mean the number of individuals, DBH values and height values of dipterocarp at three different elevations are the same. In general, the dipterocarp community in Bukit Bauk Forest is in good state.

## **KELIMPAHAN, KEPELBAGAIAN DAN TABURAN SPESIES DIPTEROKARPA DI HUTAN RIMBA BUKIT BAUK, DUNGUN, TERENGGANU.**

### **ABSTRAK**

Kajian dijalankan di Hutan Rimba Bukit Bauk bertujuan untuk menentukan komposisi dan struktur pokok dipterokarpa pada tiga aras ketinggian yang berbeza iaitu pada aras ketinggian bawah, tengah dan atas (45 m, 145m dan 345m atas paras laut). Objektif bagi kajian ini adalah untuk menentukan kelimpahan dan kepelbagaian spesies dipterokarpa di Hutan Rimba Bukit Bauk dan untuk menentukan struktur hutan dipterokarpa di Hutan Rimba Bukit Bauk. Kaedah plot seluas 20 x 50m<sup>2</sup> telah digunakan berserta dengan pengukuran parameter seperti Diameter pada Paras Dada (DBH), ketinggian pokok, kategori batang dan bentuk kanopi. Hasil kajian menunjukkan terdapat 45 spesies dipterokarpa dari lima genus telah direkodkan iaitu *Dipterocarpus*, *Dryobalanops*, *Hopea*, *Shorea* dan *Vatica*. Jumlah bilangan pokok dewasa, anak pokok dan anak benih per hektar ialah 150 pokok dewasa per hektar, 40 anak pokok per hektar dan 37 anak benih per hektar. Nilai min keseluruhan bagi DBH ialah 29.12cm manakala nilai min keseluruhan bagi ketinggian pokok ialah 10.2m. Nilai min bagi Indeks Shannon-Wiener ialah 1.428, Indeks Menhinick ialah 1.5467 manakala nilai min bagi Indeks Kesamarataan ialah 0.7993. Hasil analisis statistik menggunakan ANOVA menunjukkan bahawa nilai individu di antara ketiga-tiga aras ketinggian adalah tidak signifikan ( $F_{11,35} = 0.631, P > 0.05$ ). Nilai ANOVA bagi ketinggian pokok ( $F_{11,17} = 1.150, P > 0.05$ ) dan DBH ( $F_{11,17} = 1.145, P > 0.05$ ) juga tidak signifikan. Hipotesis alternatif telah diterima yang bermakna jumlah bilangan individu, nilai DBH dan nilai ketinggian pokok dipterokarpa di antara ketiga-tiga aras ketinggian adalah sama. Secara amnya, komuniti pokok dipterokarpa di Hutan Rimba Bukit Bauk adalah dalam keadaan baik.