

**MANGLICOLOUS FUNGI DIVERSITY IN EAST COAST OF PENINSULAR
MALAYSIA**

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**MASTER OF SCIENCE
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PENINSULAR MALAYSIA**

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**Thesis Submitted in Fulfillments of the Requirement for the Degree of Master
of Science in the School of Marine Science and Environment
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DEDICATION

This thesis is dedicated to my husband Muhd Azwan Bin Masstapar who has supported me all the way since the beginning of my studies. To my lovely daughter Nur Arissa Hafiya Binti Muhd Azwan and my son Muhammad Aniq Hadeef Bin Muhd Azwan, let's believe in the beauty of learning.

Abstract of thesis presented to the Senate of Universiti Malaysia Terengganu
in fulfillment of the requirement for the degree of Master of Science

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School : Marine Science and Environment

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School : Fundamental Sciences

This study reports on the biodiversity of manglicolous fungi on driftwoods collected from mangrove areas in Bakau Tinggi Recreational Forest, Pulau Sekeping and Universiti Malaysia Terengganu in Terengganu and Cherating in Pahang, on the east coast of Peninsular Malaysia. A total of 530 wood samples were collected and incubated separately. Observations were done once every fortnightly for up to six months. From the collections, a total of 55 manglicolous fungi comprising of 39 Ascomycetes, two Basidiomycetes and 14 anamorphic taxa were identified and recorded. The highest number of fungi were recorded from mangrove areas of Bakau Tinggi (26 species) followed by Pulau Sekeping (16 species), Universiti Malaysia Terengganu (14 species) and Cherating (12 species). Samples from Bakau Tinggi showed the highest percentage of fungal colonization (52.26%) followed by samples from Pulau Sekeping (50.97%), Cherating (49.10%) and Universiti

Malaysia Terengganu (44.55%). *Halorocellinia oceanica* and *Hydea pygmea* were the most common fungi found at all study sites. The Simpson Index was highest at Cherating (0.15) while Shannon and Margalef Indices were highest at Bakau Tinggi mangroves (2.92, 4.60). The most similar species composition was seen on manglicolous fungi from Universiti Malaysia Terengganu (Shannon Equitability Index = 0.95). The mean number of fungi per sample was 2.25 which were lower than those recorded at Selangor but higher than other mangroves of the Indian Oceans. The cluster analysis suggested manglicolous fungi were not grouped based on the location but local environmental conditions may play an important role that dictates its distribution. This study further contributes to the current list of manglicolous fungi in Malaysia particularly from the mangroves of the east coast of Peninsular Malaysia.

Abstrak tesis yang dikemukakan kepada Senat Universiti Malaysia Terengganu
sebagai memenuhi keperluan untuk ijazah Sarjana Sains

**KEPELBAGAIAN KULAT BAKAU DI PANTAI TIMUR SEMENANJUNG
MALAYSIA**

HAZARINNA BINTI ALI

Jun 2014

Penyelia Utama : Jamilah Mohd Salim @ Halim, Ph.D.

Sekolah : Sains Marin dan Sekitaran

Penyelia Bersama : Profesor Madya Mariam Taib, Ph.D.

Sekolah : Sains Asas

Kajian ini melaporkan kepelbagaian biologi kulat bakau pada kayu hanyut dikutip dari kawasan hutan bakau di Hutan Rekreasi Bakau Tinggi, Pulau Sekeping, dan Universiti Malaysia Terengganu di Terengganu dan Cherating di Pahang, Pantai Timur Semenanjung Malaysia. Sejumlah 530 sampel kayu telah dikutip dan diherap secara berasingan. Pemerhatian dijalankan sekali setiap dua minggu selama enam bulan. Daripada kutipan yang dibuat, sejumlah 55 kulat bakau terdiri daripada 39 Ascomycete, dua Basidiomycete dan 14 taksa kulat anamof telah direkodkan. Jumlah kulat tertinggi telah direkodkan di Bakau Tinggi (26 spesis) diikuti oleh Pulau Sekeping (16 spesis), Universiti Malaysia Terengganu (14 spesis) dan Cherating (12 spesis). Sampel dari Bakau Tinggi menunjukkan peratusan koloni tertinggi (52.26%) diikuti oleh sampel dari Pulau Sekeping (50.97%), Cherating (49.10%) dan Universiti Malaysia Terengganu (44.55%). *Halorocellinia oceanica*

dan *Hydea pygmea* merupakan kulat yang paling lazim ditemui di kesemua lokasi kajian. Indeks Simpson didapati tertinggi di Cherating (0.15) manakala Indeks Shannon dan Margalef yang tertinggi ialah di lokasi Bakau Tinggi (2.92, 4.60). Komposisi spesies yang memiliki persamaan tertinggi ditunjukkan oleh kulat bakau dari lokasi Universiti Malaysia Terengganu (Persamaan Shannon = 0.95). Purata bilangan kulat setiap sampel ialah 2.25 iaitu lebih rendah daripada yang direkodkan di Selangor tetapi lebih tinggi daripada hutan bakau lain di Lautan Hindi. Analisis kluster mencadangkan kulat bakau tidak dapat dikelompokkan berdasarkan lokasi tetapi keadaan persekitaran setempat mungkin memainkan peranan penting yang mempengaruhi taburannya. Kajian ini seterusnya menyumbang kepada senarai terkini kulat bakau di Malaysia khususnya dari hutan bakau di Pantai Timur Semenanjung Malaysia.