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FAKULTI SAINS DAN TEKNOLOGI
UNIVERSITI MALAYSIA TERENGGANU
2007

ISOLATION AND IDENTIFICATION OF FUNGI ASSOCIATED WITH *Rhizophora apiculata* IN UNIVERSITI MALAYSIA TERENGGANU

By

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Research report submitted in partial fulfillment of
the requirements for the degree of
Bachelor of Science (Biological Sciences)

Department of Biological Sciences
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2007

This project should be cited as:

Nurulsyuhadah, H. M. 2007. Isolation and identification of fungi associated with *Rhizophora apiculata* in Universiti Malaysia Terengganu. Undergraduate thesis, Bachelor of Science in Biological Sciences, Faculty of Science and Technology, Universiti Malaysia Terengganu, Terengganu. 54p.

UNIVERSITI MALAYSIA TERENGGANU

JABATAN SAINS BIOLOGI
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PROJEK PENYELIDIKAN I DAN II
RESEARCH REPORT VERIFICATION

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: The Isolation and Identification of Fungi Associated with *Rhizophora apiculata* in Universiti Malaysia Terengganu oleh Nurulsyuhadah Binti Hassan Masuod, no. matrik: UK 10466 telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Biologi sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda Sains (Sains Biologi), Fakulti Sains dan Teknologi, Universiti Malaysia Terengganu.

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ACKNOWLEDGEMENTS

In the name of ALLAH the Most Gracious and Most Merciful

Praise and glory be to ALLAH the Almighty who has granted me the courage, strength and patience to complete this thesis.

I would like to express my appreciation and gratitude to my supervisor, Dr. Mariam Taib for her patience, guidance, piece of information and constructive criticism. Immeasurable gratitude is forwarded to my co-supervisors, Madam Fazilah Ariffin and Miss Jamilah Mohd Salim @ Halim, the science officer, Miss Norazlina Abdul Aziz, Haji Razali and all other staff in Microbiology laboratory (K.Ina and K.Tie), lecturers and staff in UMT.

I am deeply indebted to my coursemates (Atiqah, Jamal, Pit Li, Opie and Aznor) and those who had contributed directly or indirecty. Thanks for everything.

I also would like to extend my warmest thanks to my family especially to my mother and father for their advice, understanding, never ending love and support who keep me strong and patient.

May ALLAH shower His blessings upon all of us. Thank you.

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LIST OF ABBREVIATIONS

%	-	percentage
°C	-	Celsius scale, Celsius degree or centigrade scale
cm	-	centimeter (-s)
cm^2	-	square centimeter
g	-	gram
min	-	minute
ml	-	milliliter
PDA	-	Potato Dextrose Agar
pH	-	measure of the acidity or alkalinity of a solution
ppt.	-	parts per trillion
sp., spp.	-	species (singular and plural, respectively)
SWA	-	Sea Water Agar

ABSTRACT

Mangrove has potential as source of bioactive compounds for medicinal purposes, however it is not clear whether the bioactive compounds derived from the plant itself or from the microbes associated with mangrove. This study was carried out to isolate and identify the fungi associated with *Rhizophora apiculata*. The target groups of fungi include marine and terrestrial fungi. The sampling was conducted at the mangrove forest in Zone 1, Universiti Malaysia Terengganu (UMT). In order to isolate and identify the fungi, fragments of roots, leaves and branches were cultured using three techniques: direct plating, damp incubation and slide culture technique. As a result, 48 fungal taxa were isolated from samples of fresh leaves, roots and branches in both direct culture technique and damp incubation technique. Out of these, a total of 10 isolates belonging to Ascomycotina (two taxa), Deuteromycotina (six taxa) and Zygomycotina (two taxa) have been recorded using direct culture technique. On the other hand, in damp incubation technique, a total of eight species of fungi belonging to Ascomycotina (two taxa) and Deuteromycotina (six taxa) were isolated. No Zygomycotina was isolated using damp incubation technique while Basidiomycotina was not isolated in both techniques. About 30 isolates could not be identified. The fungi isolated in this study were categorized as terrestrial fungi group such as *Pestalotiopsis* sp., *Fusarium* sp. and *Curvularia* sp. These fungal isolates can be used further in the investigation of potential bioactive compounds produced by the fungi.

PEMENCILAN DAN IDENTIFIKASI KULAT YANG BERASOSIASI DENGAN POKOK *Rhizophora apiculata* DI UNIVERSITI MALAYSIA TERENGGANU

ABSTRAK

Pokok bakau berpotensi sebagai sumber sebatian bioaktif untuk kegunaan perubatan, walaubagaimana pun, tidak dapat dipastikan samada komponen bioaktif itu dihasilkan oleh pokok bakau itu sendiri atau daripada mikrob yang berasosiasi dengan pokok bakau. Kajian ini dilakukan adalah untuk memencil dan mengenalpasti kulat yang berasosiasi dengan *Rhizophora apiculata.* Kulat marin dan kulat daratan merupakan kumpulan kulat yang ingin dikenalpasti. Persampilan dijalankan di zon 1 hutan bakau, Universiti Malaysia Terengganu (UMT). Bagi tujuan pemencilan dan identifikasi kulat, bahagian akar, daun dan dahan dikultur menggunakan tiga kaedah iaitu 'direct plating, 'damp incubation' dan slide culture'. Sebanyak 48 kulat telah dapat dipencilkan daripada sampel daun, akar dan batang yang dikulturkan menggunakan kedua-dua kaedah 'direct plating dan 'damp incubation' . Sejumlah 10 spesis kulat yang direkodkan hasil daripada kaedah 'direct plating' adalah terdiri daripada kumpulan Ascomycotina (satu taksa), Deuteromycotina (enam taksa) dan Zygomycotina (dua taksa). Manakala melalui kaedah 'damp incubation', sejumlah lapan spesis yang dapat dipencilkan terdiri daripada kumpulan Ascomycotina (dua taksa) dan Deuteromycotina (enam taksa). Melalui kaedah 'damp incubation', tiada kulat daripada kumpulan Zygomycotina direkodkan sementara kulat daripada kumpulan Basidiomycotina juga tidak direkodkan melalui kedua-dua kaedah. Sejumlah 30 kulat yang dipencilkan tidak dapat dikenalpasti kumpulan genus dan spesisnya. Kulat yang telah dikenalpasti dalam penyelidikan ini dapat dikategorikan sebagai kulat daratan seperti *Pestalotiopsis* sp., *Fusarium* sp. dan *Curvularia* sp. Pencilan kulat ini boleh digunakan seterusnya dalam kajian penghasilan sebatian bioaktif oleh kulat-kulat tersebut.