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

By

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## LIST OF ABBREVIATIONS

%	-	percentage
°C	-	Celsius scale, Celsius degree or centigrade scale
cm	-	centimeter (-s)
cm <sup>2</sup>	-	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 spesiesnya. 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.