THE EFFECT OF EXTRACTS FREE-LIVING AMOEBAE ON PHYTOGENIC FUNGI OF PLANTS *RIGIDOPORUS LIGNOSUS*

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2006

The effect of extracts free-living amebae on pathogenic fungi o plants Rigidoporus Lignosus / Maria Embong.

Lihat sebelah

THE EFFECT OF EXTRACTS FROM FREE-LIVING AMOEBAE ON PATHOGENIC FUNGI OF PLANTS, *RIGIDOPORUS LIGNOSUS*

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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
Faculty of Science and Technology
KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA
2006

This project should be cited as:

Maria, E. 2006. The Effect of Extracts From Free-Living Amoeba on Pathogenic Fungi of Plants, *Rigidoporus lignosus*. Undergraduate thesis, Bachelor of Science in Biological Sciences, Faculty of Science and Technology, Kolej Universiti Sains dan Teknologi Malaysia, Terengganu.

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PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: THE EFFECT OF EXTRACTS FROM FREE-LIVING AMOEBA ON PATHOGENIC FUNGI OF PLANTS, *Rigidoporus lignosus* oleh: Maria Binti Embong no. matrik: UK 8178 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, Kolej Universiti Sains dan Teknologi Malaysia.

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ACKNOWLEDGEMENTS

Assalamualaikum w.b.t

I would like to especially thank my supervisor, Associate Professor Dr. Nakisah Mat Amin for help, guidance, encouragement, critism and patient. Without whom I would not be able to go through my final year project successfully. Above all, thanks you so much for being so generous with ideas. I would also like to my utmost appreciation to Prof Madya Dr. Faridah Abdullah, UPM for being very helpful throughout my project period.

To all the staffs of Faculty Science and Technology, KUSTEM, thanks you so much for the guidance given. Not forgetting to all the staffs and master students Laboratory of Mycology, UPM especially to Kak Ita and Abang Nazif, I am truly grateful for the kindness and guidance from which I was able to complete my project work successfully. Special thanks neither also to Kak Iliana and Kak Nor for sharing her knowledge and giving me guidance while doing this project.

I gratefully acknowledge the following people for their time, advice and generous contributions for making this piece of work possible; staff of Biotechnology 3 Laboratory, INOS especially Kak Suhaila; students master who shared working with me at INOS especially Kak Siti Faezah, Kak Dah, Kak Ida, Kak Effa; Cik Ku Naiza, Cik Azlina, Kak Timah from Biochemistry Laboratory; Puan Zarina and Puan Mahidawati from Microbiology Laboratory; and last but not least to the staffs of the Electron Microscopy Preparation Room especially to En. Nasir and Kak Ita. To my fellow group of final year

project; Farah, Diana and Linda, thanks a zillion for sharing the work load of keeping the lab tidy with me.

Special grateful also to my beloved parent, Embong Bin Ibrahim and The Binti Mohd Zain and my siblings who always giving me supports and advices without feeling bored. All the love and support given each time have strengthened up my soul and gave me confident to accomplish this study.

Last but not least, to all my course mates and person who did not mentioned her, thanks for helping and being supportive to me. May Allah bless all of you.

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LIST OF ABBREVIATIONS

abs	-	absorbance
nm	-	nanometer
%	-	percentage
^{0}C	-	Degree Celcius
ANOVA	-	Analysis of Variance
g	-	gram
ml	-	milliliter
mg	-	milligram
mg/ml	-	milligram per milliliter
µg/ml	-	microgram per milliliter
µm	-	micron meter
L	-	liter
µL	-	micron liter
cm	-	centimeter

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ABSTRACT

In this study extracts of two free-living amoebae; *Acanthamoeba keratitis* (AK) and *Acanthamoeba* sp (P1) were tested on *Rigidoporus lignosus*, a pathogenic fungus. *Acanthamoeba keratitis* (AK) was a clinical isolate and *Acanthamoeba* sp (P1) was isolated from marine environment. *Rigidoporus lignosus* was taken from a rubber tree infected by white root disease. To observe the anti fungal preparation of the extract, the culture of *Rigidoporus lignosus* was grown on PDA with spread the amoebae extracts at different concentrations and the observation the growth of the fungus was done after 6 days. The protein concentration of the amoebae extracts measured were starting from 2000 µg/ml, 1000 µg/ml, 500 µg/ml and 250 µg/ml. Results in this study show that all the extracts used gave a little effected on concentration the growth of *Rigidoporus lignosus*. Both of the amoebae extracts; AK and P1 were observed to inhibit radial mycelia growth of *Rigidoporus lignosus* at concentration of 2000 µg/ml which the Percentage Inhibition of Radial Growth (PIRG) by AK extract was 4.62% and P1 extract was 4.44%. At lower concentration of amoebae extracts 250 µg/ml, there was no inhibit on radial mycelia growth observed and the PIRG, both of the amoebae extracts were 0.26%. The results obtained from this current study clearly demonstrated there is no different in anti fungal activities in both amoebae extracts used in this study.

KESAN EKSTRAK DARIPADA AMEBA HIDUP KE ATAS KULAT PATOGEN, *RIGIDOPORUS LIGNOSUS*

ABSTRAK

Dalam kajian ini, dua ekstrak ameba hidup; AK dan P1 telah diuji ke atas kulat patogen, *Rigidoporus lignosus*. AK adalah pengasingan klnikal dan P1 adalah diasingkan daripada persekitaran marin. *Rigidoporus lignosus* telah diambil daripada pokok getah yang dijangkiti oleh penyakit pada akar putihnya. Utuk melihat penyediaan ekstrak anti-kulat, kultur *Rigidoporus lignosus* telah ditumbuhkan di atas PDA yang diratakan dengan ekstrak ameba pada kepekatan berbeza dan pertumbuhan kulat diperhatikan selepas 6 hari. Kepekatan protein ekstrak ameba telah diukur bermula daripada 2000 μg/ml, 1000 μg/ml, 500 μg/ml dan 250 μg/ml. Keputusan dalam kajian ini menunjukkan semua ekstrak yang digunakan pada kepekatan berlainan membawa kesan yang sedikit ke atas pertumbuhan *Rigidoporus lignosus*. Kedua-dua ekstrak ameba; AK and P1 telah diperhatikan perencatan pertumbuhan jejari miselia *Rigidoporus lignosus* pada kepekatan 2000 μg/ml di mana peratus perencatan AK adalah 4.62% dan P1 adalah 4.44%. Pada kepekatan rendah iaitu 250 μg/ml, tiada perencatan ke atas miselia yang diperhatikan dan peratus perencatannya bagi kedua-dua jenis ameba adalah 0.26%. Keputusan yang didapati daripada kajian ini jelas ditunjukkan tiada perbezaan aktiviti anti-kulat dalam kedua-dua ameba ekstrak yang digunakan dalam kajian ini.