

**ISOLATION OF ANTIFUNGAL-PRODUCING BACTERIA FROM
BAMBOO ROOT FOR POTENTIAL BIOCONTROL AGENT
AGAINST PATHOGENIC FUNGAL**

H AidAR NADIRAH BINTI HAWALIG

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This Final Year Project Report entitled **“Isolation of Antifungal-Producing Bacteria from Bamboo Root for Potential Biocontrol Agent Against Pathogenic Fungal”** was submitted by Haidar Nadirah binti Hawalig, in partial fulfilment of the requirements for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Sciences, and was approved by



Dr. Aslizah binti Mohd Aris
Supervisor
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah Negeri Sembilan



Siti Norazura binti Jamal
Project Coordinator FSG661 AS201
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah,
Negeri Sembilan



Dr. Aslizah binti Mohd Aris
Head School of Biology
Faculty of Applied Science
Universiti Teknologi MARA
72000 Kuala Pilah,
Negeri Sembilan

Date: _____

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ABSTRACT

ISOLATION OF ANTIFUNGAL-PRODUCING BACTERIA FROM BAMBOO ROOT FOR POTENTIAL BIOCONTROL AGENT AGAINST PATHOGENIC FUNGAL

Biological control is known as one of the methods to prevent any diseases of plant or human being without the side effects on human health nor be harmful for the environment. The present study was conducted to isolate antifungal-producing bacteria from bamboo root and to determine antifungal activity of isolated bacteria against pathogenic fungal. In isolation of antifungal-producing bacteria, two bacterial isolates of BR1 and BR2 were obtained. The identification of BR2 isolate from bamboo root was proposed belonged to *Pseudomonas sp.* The metabolites from bacteria of primary and secondary metabolite were then tested with three different species of pathogenic fungal, *Aspergillus sp.* (A1), *Rhizopus sp.* (A2) and *Aspergillus sp.* (A3). Isolate BR1 not showing any antifungal activity against tested fungal following disc diffusion method. However, isolate BR2 showed strong halozone production against all tested fungal pathogen. For isolate BR2, the experiment of disc diffusion method was also tested using different harvesting time of metabolic produced. Supernatant harvest in between 24 hours after incubation was belonged to primary metabolite. While for secondary metabolite, supernatant was harvest after 72 hours of incubation. Both primary and secondary metabolites showed inhibition zones, but primary metabolite produced significantly higher inhibition zones with 20.00 mm, 21.3 mm and 17.7 mm for each sample of fungal in diameter. In conclusion, isolate BR2 strongly demonstrated its ability as antifungal-producing bacteria against pathogenic fungal. Further study of isolates BR2 using molecular biology technique of sequencing method is recommended to confirm the exact species and its detail characteristics of the bacterium.