EFFECT OF INITIAL pH TO THE PRODUCTION OF THE THERMOSTABLE CELLULASE BY *Aspergillus fumigatus* IN SOLID STATE FERMENTATION USING OIL PALM FROND

UMMI NASRAH BINTI TALIB

Final Year Project Report Submitted in
Partial Fulfillment of the Requirements for the
Degree of Bachelor of Sciences (Hons.) Biology
In the Faculty of Applied Sciences
Universiti Teknologi MARA

JULY 2015

This Final Year Project entitled "**Effect of Initial pH to the Production of the Thermostable Cellulase by *Aspergillus Fumigatus* in Solid State Fermentation Using Oil Palm Frond**" was submitted by Ummi Nasrah binti Talib, in partial Science (Hons.) Biology, in the Faculty of Applied Sciences, and was approved by

Nurul Hidayah binti Adenan
Supervisor
B. Sc. (Hons) Biology
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah
Negeri Sembilan

Noor Azrimi bin Umor
Co-Supervisor
B. Sc (Hons.) Biology
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah
Negeri Sembilan

Ilyanie binti Hj. Yaacob
Project Coordinator
B. Sc (Hons.) Biology
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah
Negeri Sembilan

Dr. Nor'aishah binti Abu Shah
Head of Programme
B. Sc (Hons.) Biology
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah
Negeri Sembilan

Date: _____

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ABSTRACT

EFFECT OF INITIAL pH TO THE PRODUCTION OF THE THERMOSTABLE CELLULASE BY *Aspergillus fumigatus* IN SOLID STATE FERMENTATION USING OIL PALM FROND

Cellulases are the group of hydrolytic enzymes, capable of degrading all types of lignocellulosic materials. Cellulases have the wide range of applications. Present study was carried out to study the thermostable cellulase enzyme production ability of *Aspergillus fumigatus* against the lignocellulosic bio-waste like oil palm frond as the substrate under solid state fermentation at 50 ˚C in different initial pH levels, pH (5, 7 and 9). The enzyme activity was measured by using FPase assay every 24 hours for 10 days. In this study, the highest level of enzyme activity was obtained at pH 5.0 followed by pH 7.0 and the least was obtained at pH 9.0. This indicates that alkaline medium is not suitable for *A. fumigatus* development. It was therefore concluded that *A. fumigatus* is able to produce high amount thermostable cellulase at pH 5.0 in solid state fermentation using oil palm frond as the substrate.