ANTIBACTERIAL STUDIES AND PHYTOCHEMICAL CONSTITUENT OF LONG BEANS COATS *Vigna Unguiculata*

SHARIFAH NURULAIN BINTI SYED JAMALLUDIN

BACHELOR OF SCIENCE (Hon.) BIOLOGY
FALCULTY OF APPLIED SCIENCE
UNIVERSITI TEKNOLOGI MARA

JANUARY 2016

This Final Year Project Report entitled "**Antibacterial Studies and Phytochemical Constituent of Long Beans Coats *Vigna unguiculata***" was submitted by Sharifah Nurulain Bt Syed Jamalludin, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Sciences, and was approved by

_____

Dr. Rosilah Ab. Aziz
Supervisor
Faculty of Applied Sciences
Universiti Teknologi MARA
Pekan Parit Tinggi
72000 Kuala Pilah
Negeri Sembilan

_____

Madam Ilyanie binti Hj. Yaakob
Project Coordinator
Faculty of Applied Sciences
Universiti Teknologi MARA
Pekan Parit Tinggi
72000 Kuala Pilah
Negeri Sembilan

_____

Dr. Nor' Aishah binti Abu Shah
Head of School of Biology
Faculty of Applied Sciences
Universiti Teknologi MARA
Pekan Parit Tinggi
72000 Kuala Pilah
Negeri Sembilan
Date: _____

Date: _____

TABLE OF CONTENTS

		PAGE
ACKNOWLEDGEMENT		**iii**
TABLE OF CONTENTS		**iv**
LIST OF TABLES		**vii**
LIST OF FIGURE		**viii**
LIST OF ABBREVIATIONS		**ix**
ABSTRACT		**x**
ABSTRAK		
CHAPTER 1: INTRODUCTION		1
1.1	Background Study	2
1.2	Problem Statement	5
1.3	Significance of Study	6
1.4	Objective of the Study	
CHAPTER 2: LITERATURE REVIEW		
2.1	Background of study	7
2.2	Long Beans (*Vigna unguiculata sp*.)	8
2.3	Antibacterial Study of Malaysian Vegetables	9
2.4	Medical Importance	11
2.5	Types of Bacteria	12
2.6	Gram Positives and Gram Negative Bacteria	13
2.7	Phytochemical constituents	14
CHAPTER 3: METHODOLOGY		
3.1	Materials	
	3.1.1 Raw materials	14
	3.1.2 Test microorganisms	15
	3.1.3 Chemicals	15
	3.1.4 Media	15
	3.1.5 Apparatus	15

3.2 Methods
3.2.1 Sample preparation 16
3.2.3 Methanol extraction 17
3.2.4 Serial dilution 17
3.2.5 Bacterial strains
3.2.6 Antibacterial assay 18
3.2.6.1 Disc diffusion method 18
3.2.6.2 Minimum inhibitory concentration (MIC) 19
3.2.7 Phytochemical constituent 20
3.2.7.1 Test for phlobatannins 20
3.2.7.2 Test for terpenoids 20
3.2.7.3 Test for flavonoids 21

CHAPTER 4: RESULTS AND DISCUSSION 22
4.1 Disc diffusion method 22
4.2 Phytochemical constituent analysis 27

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS 32

CITED REFERENCES 34
APPENDICES 40
CURRICULUM VITAE 43

ABSTRACT

ANTIBACTERIAL STUDIES AND PHYTOCHEMICAL CONSTITUENT OF *Vigna unguiculata* COATS

The used of *Vigna unguiculata* or long beans has been used as an ulam in Malaysia. It can be easily obtain from the local market in Asia and also Malaysia. This study was aimed to evaluate the antibacterial properties and phytochemical constituent of the of *Vigna unguiculata* coats. The antibacterial activity of the methanol extract of *Vigna unguiculata* coats was tested against gram-positive and gram-negative bacteria by using the disc diffusion method. In addition, the phytochemical constituent of the *Vigna unguiculata* coats which were phlobatannins, terpenoid and flavonoids were also tested. In this study, the methanol coats extract of *Vigna unguiculata* showed no inhibition zone towards all tested bacteria. The result indicated that the coats extract of *Vigna unguiculata* all the tested bacteria showed no inhibition zone. This study suggested that the coats extract of *Vigna unguiculata* may have no or very little antibacterial properties. On the other hand, phytochemical constituent of the *Vigna unguiculata* showed the present of flavonoids and terpenoid and absent of phlobatannins.