ANTIBACTERIAL ACTIVITY OF LEAVES AND SEED PODS EXTRACTIONS OF *Moringa oleifera* AGAINST GRAM-POSITIVE AND GRAM-NEGATIVE BACTERIA

NUR SYAZANA AQILAH BINTI SALIM

BACHELOR OF SCIENCE (Hons.) BIOLOGY FACULTY OF APPLIED SCIENCES UNIVERSITY TECHNOLOGY MARA

JULY 2018

This Final Year Project Report entitled "Antibacterial Activity of Leaves and Seed Pods Extractions of *Moringa oleifera*" was submitted by Nur Syazana Aqilah Binti Salim, 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

> Iwana Izni Binti Zainudin Supervisor B. Sc. (Hons.) Biology Faculty of Applied Sciences UiTM Negeri Sembilan Pekan Parit Tinggi 72000 Kuala Pilah Negeri Sembilan

Lili Syahani Rusli Project Coordinator B. Sc. (Hons) Biology Faculty o Applied Sciences UiTM Negeri Sembilan Pekan Parit Tinggi 72000 Kuala Pilah Negeri Sembilan Dr. Aslizah Binti Mohd Aris Head of Programme B. Sc. (Hons) Biology Faculty of Applied Sciences UiTM Negeri Sembilan Pekan Parit Tinggi 72000 Kuala Pilah Negeri Sembilan

Date:

TABLE OF CONTENTS

ACKNOWLEDGEMENT TABLE OF CONTENTS LIST OF TABLES LIST OF FIGURES LIST OF ABBREVIATIONS ABSTRACT ABSTRAK		PAGE iii iv vi vii viii ix x
СНА	APTER 1 : INTRODUCTION	
1.1	Background study	1
1.2	Problem statement	2
1.3	Significance of the study	3
1.4	Objectives of the study	4
CHA	APTER 2 : LITERATURE REVIEW	
2.1	Medicinal plant	5
2.2	Moringa oleifera	6
	2.2.1 Characteristics of <i>Moringa oleifera</i>	7
	2.2.2 Therapeutic uses of <i>Moringa oleifera</i>	8
0.0	2.2.3 Active components of plant	12
2.3	Antimicrobiais	14
CHA	APTER 3 : METHODOLOGY	
3.1	Materials	16
	3.1.1 Raw materials	16
	3.1.2 Chemicals	10
27	S.1.5 Apparatus Mathada	10
5.2	3.2.1 Collection of plant sample	17
	3.2.1 Concerton of plant sample	17
	3.2.3 Preparation of agar	18
	3.2.4 Preparation of inoculum	18
	3.2.5 Purification of test microorganism	18
	3.2.6 Determination of zone of inhibition	18
	3.2.7 Phytochemical assay test	19
	· · ·	

	3.2.7.1 Test for tannins	19
	3.2.7.2 Test for flavonoids	19
	3.2.7.3 Test for alkaloids	19
3.3	Statistical Analysis	20
CHAP	TER 4 : RESULTS AND DISCUSSION	
4.1	Methanolic extraction	22
4.2	Antibacterial activity of methanolic extract	23
4.3	Leaf extraction of <i>M. oleifera</i>	26
4.4	Seed pod extraction of <i>M. oleifera</i>	27
4.5	Phytochemical contents	28

CHAPTER 5 : CONCLUSION AND RECOMMENDATION

5.1	Conclusion	30
5.2	Recommendations	31
СІТЕ	FD DEFEDENCES	32

CITED REFERENCES	32
APPENDICES	39
CURRICULUM VITAE	47

ABSTRACT

ANTIBACTERIAL ACTIVITY OF LEAF AND SEED POD EXTRACTIONS OF *Moringa oleifera* AGAINST GRAM-POSITIVE AND GRAM-NEGATIVE BACTERIA

The present study was performed to identify any antibacterial activity of Moringa oleifera (M. oleifera) against Gram-positive and Gram-negative bacteria species using different concentrations of methanolic extractions. The leaf and seed were extracted by using methanol. The extracts were further screened against Staphylococcus aureus and Escherichia coli. Disc diffusion method was used and the inhibitory effect was measured and recorded. Among the two sample extracts tested, leaf showed maximum zone of inhibition against both S. aureus and E. coli. In the 100 % leaf extraction, the inhibition zone was the highest at the average of 24.7 mm against S. aureus while an average of 13.7 mm against E. coli. The seed pod extraction was the highest in 100 % concentration with inhibition zone of 12.3 mm against S. aureus. The positive result was further screened for phytochemical tests for tannins, flavonoids and alkaloids. All tests showed positive results for the presence of phytochemical. The result proved that *M*. *oleifera* extract especially from leaf has potential application as antibacterial agent.