

ANTIBACTERIAL ACTIVITY OF *Vernonia cinerea*, *Peperomia pellucida* AND COMBINATION OF *Vernonia cinerea* AND *Peperomia pellucida*

NOOR ZARIFAH ZAMRI

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

JULY 2018

This Final Year Project Report entitled “**Antibacterial Activity of *Vernonia cinerea*, *Peperomia pellucida* and combination of *Vernonia cinerea* and *Peperomia pellucida*”** was submitted by Noor Zarifah binti Zamri, in partial fulfillment of the requirement for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Science, and was approved by

Sarini Binti Ahmad Wakid
Supervisor
Faculty of Applied Sciences
Universiti Teknologi MARA (UiTM)
Negeri Sembilan, Kampus Kuala Pilah,
Pekan Parit Tinggi, 72000 Kuala Pilah
Negeri Sembilan

Lili Syahani Binti Rusli
Coordinator FSG661 AS201
Faculty of Applied Sciences
Universiti Teknologi MARA (UiTM)
Negeri Sembilan, Kampus Kuala Pilah,
Pekan Parit Tinggi, 72000 Kuala Pilah
Negeri Sembilan

Dr. Aslizah Binti Mohd Aris
Head of Biology School
Faculty of Applied Sciences
Universiti Teknologi MARA (UiTM)
Negeri Sembilan, Kampus Kuala Pilah,
Pekan Parit Tinggi, 72000 Kuala Pilah
Negeri Sembilan

Date: _____

TABLE OF CONTENTS

	PAGE
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
LIST OF ABBREVIATION	viii
ABSTRACT	ix
ABSTRAK	x
CHAPTER 1: INTRODUCTION	
1.1 Background of Study	1
1.2 Problem Statement	4
1.3 Significance of the Study	5
1.4 Objectives of the Study	6
CHAPTER 2: LITERATURE REVIEW	
2.1 Polyherb	7
2.1.1 <i>Vernonia cinerea</i>	8
2.1.2 <i>Peperomia pellucida</i>	9
2.2 Antibacterial	10
2.3 Extraction	11
2.3.1 Methanol	11
2.4 Disc Diffusion Method	12
2.5 Minimum Inhibition Concentration	13
CHAPTER 3: METHODOLOGY	
3.1 Materials	14
3.1.1 Raw Material	14
3.1.2 Chemicals	14
3.1.3 Apparatus	14
3.2 Method	15
3.2.1 Sample collection	15
3.2.2 Extraction solvent	15
3.2.3 Evaporated extraction using rotary evaporator	16
3.2.4 Preparation of culture bacteria	16
3.2.5 Preparation of agar	17
3.2.5.1 Preparation of nutrient agar	17
3.2.5.2 Preparation of Mullen-Hinton agar	18
3.2.5.3 Preparation of Eosin Methylene Blue	18

	agar	
	3.2.5.4 Preparation of Mannitol Salt agar	19
3.2.6	Identification of bacteria by gram-staining	20
3.2.7	Preparation of 0.5 McFarland standard	20
3.2.8	Disc diffusion method	21
3.2.9	Preparation of Mullen-Hinton broth	21
3.2.10	Measurement of zone inhibition	22
3.2.11	Minimum Inhibition Concentration	22
CHAPTER 4: RESULTS AND DISCUSSION		
4.1	Isolation, subculture, and identification of bacteria stock	24
4.2	Antibacterial activity by using disc diffusion	28
4.3	Minimum inhibition concentration	33
CHAPTER5: CONCLUSION AND RECOMMENDATIONS		
CITED REFERENCES		
APPENDICES		
CURRICULUM VITAE		

ABSTRACT

ANTIBACTERIAL ACTIVITY TOWARDS *Vernonia cinerea*, *Peperomia pellucida* AND COMBINATION OF *Vernonia cinerea* AND *Peperomia pellucida*

The present of research was conducted to determine the antibacterial activity of *Vernonia cinerea*, *Peperomia pellucida* of combination of the *Vernonia cinerea* and *Peperomia pellucida*. The extracts were assayed for antibacterial against *Staphylococcus aureus* and *Escherichia coli* by using disc diffusion method. Gentamycin was used as the positive control. The result showed that combination of the *Vernonia cinerea* and *Peperomia pellucida* have potential to become new antibacterial agents as it inhibit 11mm growth of *Escherichia coli* at 50mg/ml. The minimum inhibition concentration also showed the lowest concentration of inhibit the growth in *Escherichia coli* is 100mg/ml while for *Staphylococcus aureus* is 50 mg/ml by using extraction of combination of *Vernonia cinerea* and *Peperomia pellucida*.