

THE ANTIBACTERIAL ACTIVITY OF  
*PORULACA OLERACEA*, L (PURSI ANE)  
AGAINST SEI ECTED TEST BACTERIA

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A Thesis

Presented to the  
Faculty of the Graduate School  
University of San Carlos  
Cebu City, Philippines

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Science in Biology

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by

Marilyn Young-Tiu

March, 1996

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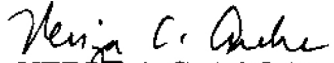
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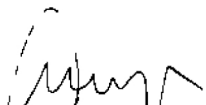
  
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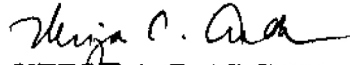
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## ABSTRACT

The study dealt with the determination of the antibacterial activity of the aqueous and alcohol-free extracts of the stem, leaves and roots of *Portulaca oleracea*, (Purslane) against four test bacteria using the disk diffusion method. It included the determination of the minimum inhibitory concentration (MIC), the minimum bactericidal concentration (MBC) and the effects of temperature, pH and light on the antibacterial activity.

The aqueous and alcohol-free extracts of the stem and the leaves exhibited antibacterial activities against *Bacillus subtilis*, *Escherichia coli* and *Staphylococcus aureus*. *Pseudomonas aeruginosa* was resistant. Both the aqueous and the alcohol-free extracts of the roots did not show any antibacterial activity.

Using the turbidimetric and plate assay methods, the minimum inhibitory concentration of the leaf extract was determined to be 40% and the minimum bactericidal concentration, 50%.

Antibacterial activity of the extracts were found to be adversely affected when stored at 40°C or when exposed to light for more than two weeks. Storage at pH 3 improves the biological stability of the extract.

Since the extracts were found to be half as active as tetracycline, it is recommended that clinical studies be made for the use of the extracts for mild to moderate cases of infection.

## TABLE OF CONTENTS

	Page
ABSTRACT	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF PLATES	x
<b>Chapter</b>	
<b>1 THE PROBLEM AND ITS SCOPE</b>	
<b>INTRODUCTION</b>	
Rationale of the Study	1
Review of Related Literature	4
<b>THE PROBLEM</b>	
Statement of the Problem	13
Significance of the Study	14
Scope and Limitation	14
<b>DEFINITION OF TERMS</b>	15
<b>2 MATERIALS AND METHODS</b>	
Preparation of Materials	17
Determination of the Antibacterial Activities of the Test Extracts	26
Determination of the MIC and MBC of the Most Active Extract	28
Biological Stability of the Most Active Extract When Subjected	
Different Temperature, pH and Light Conditions	31

3	RESULTS AND DISCUSSION	
	Physical Characteristics of the Test Solutions	38
	Sensitivity Testing	38
	The Antibacterial Activity of the Aqueous Extracts	39
	The Antibacterial Activity of the Alcohol-free Extracts	39
	Minimum Inhibitory Concentration	44
	Minimum Bactericidal Concentration	46
	Biological Stability Tests	47
	Effect of Temperature on Antibacterial Activity	48
	Effect of pH on Antibacterial Activity	50
	Effect of Exposure to Light on Antibacterial Activity	54
IV	SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	
	Summary	58
	Findings	58
	Conclusions	59
	Recommendations	60
	BIBLIOGRAPHY	62
	APPENDICES	
	A McFarland Nephelometer Standards	67
	B List of Student Research Assistants	68
	CURRICULUM VITAE	69

**LIST OF TABLES**

Table		Page
1	Physical Characteristics of the Test Solutions	38
2	Antibacterial Activities of the Aqueous Extracts	40
3	Antibacterial Activities of the Alcohol-free Extracts	41
2	MIC and MBC Determinations on Aqueous Leaf Extracts	45
5	Effect of Temperature and Storage on Antibacterial Activity	49
6	ANOVA Two-way Effect of Temperature and Storage on Antibacterial Activity	50
7	Effect of pH and Storage on Antibacterial Activity	53
8	ANOVA Two-way Effect of pH and Storage on Antibacterial Activity	54
9	Effect of Light and Storage on Antibacterial Activity	56
10	ANOVA Two-way Effect of Exposure to Light and Storage On Antibacterial Activity	57



**LIST OF FIGURES**

<b>Figure</b>		<b>Page</b>
1	Map of Cebu	18
2	Extraction Schema	24
3	Disk Diffusion Method for Determining Sensitivity of Bacteria to Antimicrobial Agents	27
4	Broth Dilution Test to Determine MIC and MBC	30
5	The Determination of the Effects of Temperature on Antibacterial Activity	33
6	The Determination of the Effects of pH on Antibacterial Activity	34
7	The Determination of the Effects of Exposure to Light on Antibacterial Activity	35
8	Schematic Diagram of Antibacterial Screenings, Sensitivity Testing and Biological Stability Testing	37
9	Bar Graph Zones of Inhibition with Aqueous Extracts	42
10	Bar Graph Zones of Inhibition with Alcohol-free Extracts	42
11	Bar Graph Effect of Temperature on Antibacterial Activity	51
12	Bar Graph Effect of pH on Antibacterial Activity	51
13	Bar Graph Effect of Light on Antibacterial Activity	57

**LIST OF PLATES**

<b>Plate</b>		<b>Page</b>
1	Habit of Growth of Purslane	20
2	Whole Plant of Purslane	20
3	Whole and Finely Chopped Stems of Purslane	21
4	Whole and Finely Chopped Leaves of Purslane	21
5	Whole and Finely Chopped Roots of Purslane	21