

BIODEGRADATION OF NAPHTHALENE BY USING

Pseudomonas sp. AND *Bacillus* sp.

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TABLE OF CONTENTS

	PAGE
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
LIST OF ABBREVIATIONS	viii
ABSTRACT	x
ABSTRAK	xi
CHAPTER 1 : INTRODUCTION	
1.1 Background of Study	1
1.2 Problem Statement	3
1.3 Significance of the Study	4
1.4 Objectives of the Study	5
CHAPTER 2 : LITERATURE REVIEW	
2.1 Bioremediation	6
2.2 Naphthalene	7
2.3 Naphthalene as PAHs	7
2.4 Biodegradation of Naphthalene by bacteria	9
2.5 Mechanism and Degradation Pathway for Naphthalene by bacteria	9
2.6 Chemotaxis by bacteria	12
2.7 Stages of Bacteria Adaptation Towards PAH	13
2.8 <i>Pseudomonas</i> sp.	13
2.9 <i>Bacillus</i> sp.	15
CHAPTER 3 : METHODOLOGY	
3.1 Materials	
3.1.1 Raw materials	16
3.1.2 Chemicals	16
3.1.3 Apparatus	17
3.2 Methods	
3.2.1 Stock Culture Preparation	18
3.2.2 Culture Media Preparation	18
3.2.2.1 Nutrient media	18
3.2.2.2 M9 Minimal media	19
3.2.3 Bacterial culture preparation	20

3.2.4	Morphological characterization	21
3.2.5	Preparation of Naphthalene Stock solution for Standard calibration curve	22
3.2.5.1	Calibration curve of naphthalene	22
3.2.6	Preparation of Catechol Stock solution for Standard calibration curve	22
3.2.6.1	Colorimetry of Catechol	23
3.2.6.1	Calibration curve of Catechol	23
3.2.7	Determination of Bacteria biomass	23
3.2.8	Determination of Naphthalene degradation	24
3.2.9	Determination of Catechol production	24
3.3	Statistical Analysis	25
3.4	Flowchart of study	26

CHAPTER 4 : RESULTS AND DISCUSSION

4.1	Morphology of Bacteria	27
4.2	Naphthalene Degrading Activity by <i>Pseudomonas</i> sp. and <i>Bacillus</i> sp.	29
4.3	Production of Biomass Cell Activity by <i>Pseudomonas</i> sp. and <i>Bacillus</i> sp.	31
4.4	Naphthalene Degradation by bacteria	33
4.5	Catechol Production by bacteria	35
4.6	Statistical Analysis	37
4.6.1	Pearson correlation	37
4.6.2	Mann-Whitney Test	38

CHAPTER 5 : CONCLUSIONS AND RECOMMENDATION 41

CITED REFERENCES	43
APPENDICES	48
CURRICULUM VITAE	65

ABSTRACT

BIODEGRADATION OF NAPHTHALENE BY USING *Pseudomonas* sp. AND *Bacillus* sp.

Naphthalene is a type of polyaromatic hydrocarbon and is known as the most common pollutant found in our environment. Due to its harmful effects on living things, naphthalene should be removed using the bioremediation method. This method shows us how microorganism can degrade naphthalene by utilizing it as a carbon source. This biodegradation study using *Pseudomonas* sp. and *Bacillus* sp. to degrade naphthalene was conducted to analyze the degradation rate of naphthalene, the biomass cell produced and catechol production as well as to compare the degradation activity by those two bacteria species. Both bacteria were cultured separately in M9 minimal media containing naphthalene for 13 days of incubation time. The biodegradation activity of the bacteria cultures were monitored by UV-Vis spectrophotometer. Based on statistical analysis using Pearson's coefficient of correlation and Mann-Whitney test, *Pseudomonas* sp. can degrade naphthalene (74.26%) better than *Bacillus* sp. (71.05%). The biomass cell produced by *Pseudomonas* sp. was higher (97.32%) than *Bacillus* sp. (96.09%). *Pseudomonas* sp. also produced high catechol production (75.31%) than *Bacillus* sp. (71.06%). This shows that *Pseudomonas* sp. is more efficient to degrade naphthalene as compared to *Bacillus* sp. However, both bacteria are capable to degrade naphthalene and are practically useful for bioremediation purposes.