

**OPTIMIZATION OF SOIL ACIDIFICATION IN LANDFILL USING  
WOOD ASH**

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## ABSTRACT

### OPTIMIZATION OF SOIL ACIDIFICATION IN LANDFILL USING WOOD ASH

One of the characteristic of landfill soil is either in acidic condition or alkaline condition. The pH value for this soil is depends on several factors, for example soil type, or type of garbage that gathered together in one place, that could be produced the acidic and alkaline. Wood ash was used in this experiment, which is can be function as a medium to optimize the soil acidification. Two types of wood ash, which are *Acacia mangium willd sp* and *Endospermum malaccensa sp* was tested to see how far this wood ash can minimize the pH value of acidic landfill soil. In early step, distilled water and calcium chloride ( $\text{CaCl}_2$ ) were used to determine the soil pH, and then following by using the wood ash. Two methods were applied in this experiment. First analysis is FTIR, which is to detect the components in wood ash. Second analysis is pH meter, which is to check soil pH. In this study, 0.1% to 0.5% weight of wood ash has been applied on each soil sample and based on the obtained result, 0.1% weight of wood ash that had been applied in this experiment, was chosen as the best weight to optimize the acidic soil, compare to others four percentage weight of wood ash due to its ability to neutralize the landfill soil, reaching 7, which mean neutral in pH graph.

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## TABLE OF CONTENTS

	<b>Page</b>
<b>ACKNOWLEDGMENTS</b>	iii
<b>TABLES OF CONTENTS</b>	iv
<b>LIST OF TABLES</b>	vi
<b>LIST OF FIGURES</b>	vii
<b>LIST OF ABBREVIATIONS</b>	viii
<b>ABSTRACT</b>	ix
<b>ABSTRAK</b>	x
<b>CHAPTER 1 INTRODUCTION</b>	
1.1 Background of study	1
1.2 Problem statement	3
1.3 Significant study	4
1.4 Scope of study	5
1.5 Objectives of study	6
<b>CHAPTER 2 LITERATURE REVIEW</b>	
2.1 Environmental problems in landfill	7
2.2 Soil	8
2.2.1 Soil type	8
2.2.2 Soil properties	10
2.3 Wood ash	16
2.3.1 Type of wood ash	17
2.3.2 Determination of wood ash components	18
2.4 Application of wood ash in environment study	21
2.5 Liming technique	22
<b>CHAPTER 3 METHODOLOGY</b>	
3.1 Materials	24
3.1.1 Raw material	24
3.1.2 Chemical	24
3.1.3 Equipment and analytical instrument	24
3.2 Methods	25
3.2.1 Sampling area	25
3.2.2 Sample collection	25
3.2.3 Sample preparation for soil	26
3.2.4 Sample preparation for wood ash	26
3.3 Determination alkalinity of wood ash	26
3.4 Determination of component by using FTIR	27
3.5 Soil	27
3.6 Determination of effect wood ash on soil pH	28

<b>CHAPTER 4 RESULTS AND DISCUSSION</b>	
4.1 Wood ash	29
4.1.1 Measuring wood ash pH	29
4.2 FTIR	30
4.3 Soil pH	34
4.4 Effect of wood ash on soil pH	35
<b>CHAPTER 5 CONCLUSION AND RECOMMENDATION</b>	45
<b>CITED REFERENCE</b>	46
<b><i>CURRICULUM VITAE</i></b>	51