

**ALCOHOL-BENZENE SOLUBLES AND ASH CONTENT FROM
HEARTWOOD AND SAPWOOD OF GELAM (*Melaleuca cajuputi*)**

By

Ahmad Bakhtiar b. Alias

**Final Project Submitted in Partial Fulfillment for the Diploma in Wood Industry
Faculty of Applied Science
Universiti Teknologi MARA Pahang**

October 2004

ACKNOWLEDGEMENT

First of all, I would like to thank almighty ALLAH for His blessing leading to the success of this final project.

I would like to take this opportunity to thank my supervisor Prof. Dr. Suhaimi Muhammed, for guiding and advising me throughout the completion of this study. Thanks for the time he spared on me, support given, as well as valuable knowledge shared with me.

Thank you to the staff off of Diploma in wood Industries laboratory and workshop, Mr. Rudaini and Mr. Sardey for their priceless help on preparing the material need in this research.

To my dearest lecturers, thank you for your valuable advice and the lesson you taught me. Finally, to my beloved course mates, thanks you for the time we had and the memories after these day. Yours assistance to me will be truly appreciated.

TABLES OF CONTENTS

	Page
APPROVAL SHEET	i
DEDICATION	ii
AKNOWLEDGEMENT	iii
TABLE OF CONTENT	iv
LIST OF TABLES	vi
LIST OF FIGURE	vii
ABSTRACT	viii
ABSTRAK	ix
CHAPTER ONE	
1.0 INTRODUCTION AND OBJECTIVE.....	1-2
CHAPTER TWO	
2.0 LITERATURE REVIEW.....	3
2.1 Field characteristic of Gelam.....	3
2.1.1 Gelam distribution.....	3
2.1.2 Population Status and Trends.....	4
2.1.3 Uses.....	4

CHAPTER THREE

3.0 MATERIAL AND METHODS..... 5

3.1 Materials and Preparation..... 5.

3.2 Methodology (Laboratory Method)..... 7

 3.2.1 Determination of Moisture Content..... 7

 3.2.2 Determination of Alcohol-Solubility of Wood..... 9

 3.2.3 Determination of Ash in Wood..... 11

CHAPTER FOUR

4.0 RESULT AND DISCUSSION..... 13

 4.1 Moisture content..... 13

 4.2 Alcohol-solubility..... 14

 4.3 Ash..... 16

CHAPTER FIVE

5.0 CONCLUSION..... 18

 REFERENCE..... 19

 APPENDICES..... 20

 VITA..... 26

ABSTRACT

ALCOHOL-BENZENE SOLUBLES AND ASH CONTENT FROM HEARTWOOD AND SAPWOOD OF GELAM (*Melaleuca cajuputi*)

By

AHMAD BAKTIAR B. ALIAS

OCTOBER 2004

The percentage of extraneous component and ash content in Gelam (*Melaleuca cajuputi*) was determined from heartwood and sapwood in accordance to TAPPI standard. In both cases, heartwood contains high amount of extractives and low amount of ash. Sapwood contains low amount of extractive but high amount of ash. These values of high and low extractive and ash content could serve as good indication for better utilization especially when machining and during chemical recovery of black liquor in manufacture of chemical pulp. Knowledge on the extractive and ash content for example, would enable a mill to take positive measures in their effort to minimize problems related to pulping of wood containing substantial extractive and ash contents.