# CHEMICAL PROPERTIES OF KELEMPAYAN (Anthocephalus Chinensis)

By: ZULHILMI BIN MUHAMAD ZUKI

Final Project Submitted in Partial Fulfillment for the Diploma in Wood Technology,
Faculty of Applied Science,
Mara University of Technology, Pahang.

**OCTOBER 2004** 

### **ACKNOWLEDGEMENT**

#### Bismillahirrahmanirrahim...!

Alhamdulillah, first and foremost, I am grateful to almighty Allah, for his grace that I am able to complete this thesis about chemical properties of Kelempayan.

I also want to thank to University Technology MARA (UiTM) and all parties involved in giving me opportunity to the further my study and also for giving me a chance to optimize the facilities provide by this university. I am proud to extend my heartfelt gratitude to my supervisors, Prof. Madya Dr Suhaimi of our lectures in Diploma in Wood Technology UiTM for his invaluable advice in monitoring and guiding me trough out the duration of study for completing my project module.

I would like to extend my sincerest gratitude to our wood technology lectures associate Prof. Madya Dr. Jamaluddin, Prof. Madya Abdul Jalil, Sir Wan Nazri, Sir Amran, Miss Mazlin, Sir Fauzi, Uncle Dat and staff wood factory for their passion in sharing their knowledge's. I am grateful to all library staff UiTM campus Jengka for their understanding and support.

Finally, thank and love for my parents and the whole family and also my friends for their hope and support to complete this project. Thanks a lot everybody.

# TABLE OF CONTENTS

TITLE PAGE
PROJECT TITLE
APPROVAL SHEET II
<b>DEDICATION</b> III
ACKNOWLEDGEMENT
LIST OF FIGURESVII
ABSTRACTVIII
ABSTRAKIX
CHAPTER
1.0 INTRODUCTION
1.1 GENERAL CHARACTERISTIC 1
2.0 LITERATURE REVIEW 2
2.1 PHYSICAL PROPERTIES
2.2 MECHANICAL PROPERTIES
2.3 USES
2.4 OBJECTIVE
3.0 MATERIALS AND METHOD
3.1 MATERIAL PREPARERATION
3.2 DETERMINATION OF MOISTURE
CONTENT

	3.3	DETERMINATION OF COLD-WATER	
		SOLUBILITY OF WOOD	7
	3.4	DETERMINATION OF HOT-WATER	
		SOLUBILITY OF WOOD	8
	3.5	DETERMINATION OF ALCOHOL-BENZENE	
		SOLUBILITY OF WOOD	9
	3.6	DETERMINATION OF 1% NaOH SOLUBILITY	
		OF WOOD	11
	3.7	DETERMINATION OF LIGNIN IN WOOD	13
	3.8	DETERMINATION OF ASH IN WOOD	15
4.0	DESI	ULT AND DISSCUSSION	17
7.0	RESC		
	4.1		17
	4.2		
		OF WOOD	18
	4.3	RESULT OF HOT-WATER SOLUBILITY	
		OF WOOD	19
	4.4	RESULT OF ALCOHOL-BENZENE	
		SOLUBILITY OF WOOD	20
	4.5	RESULT OF 1% NaOH SOLUBILITY OF	
		WOOD	21
	4.6	RESULT OF LIGNIN IN WOOD	22
	4.7	RESULT OF ASH IN WOOD	23
5.0	CON	CLUSION	28
	APPI	ENDIX	29
	REFI	FERENCES	41
	VITA		43

#### ABSTRACT

#### CHEMICAL COMPONENTS OF KELEMPAYAN

(Anthocephalus Chinensis)

## By:

# ZULHILMI BIN MUHAMAD ZUKI

#### OCTOBER 2004

This project is a study about chemical component of Kelempayan (Anthocephalus Chinensis). Kelempayan is the commercial fast growing tree that valuable in wood industry in our country. There are seven experiments have done in this study. The experiment is the determination of moisture contents, cold-water solubility, hot-water solubility, alcohol-benzene solubility, 1% NaOH solubility of wood, the percentage of lignin and ash in wood. The percentage of result shows the content of chemical component in wood such as extractive components, lignin, and ash. Beside that, the result also indicates the degree of decay or degradation.