

**CHEMICAL COMPOSITIONS OF OIL PALM TRUNK AT (*ELAEIS*
GUINEENSIS) TOP AND BOTTOM PORTION**

MUHAMAD SUHAIMI BIN SAMAT

**This Final Year Project Report Submitted In Partial Fulfillment of
the Requirements for the Degree Bachelor of Science (Hons.)
Furniture Technology in the Faculty of Applied Sciences
Universiti Teknologi MARA**

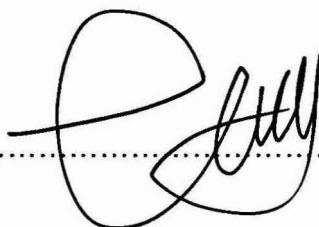
JULY 2016

CANDIDATE'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulation of Universiti Teknologi MARA. It is original and is the result of my work, unless otherwise indicated or acknowledgment as reference work. This Thesis has not been submitted to any other academic institutions or non-academic institution for any other degree or qualification.

In event that my thesis is found to violate conditions mentioned above, I voluntary waive the right of conferment of my degree and agree to be subjected to the disciplinary rules and regulation of Universiti Teknologi MARA.

Signature of Candidate:



Name : Muhamad Suhaimi Bin Samat
Student ID : 2014451442
Program : Bachelor of sciences (Hons.) Furniture Technology
Faculty : Faculty of Applied Sciences
Thesis Title : CHEMICAL COMPOSITIONS OF OIL PALM TRUNK
AT (ELAEIS GUINEENSIS) TOP AND BOTTOM
PORTION

ABSTRACT

CHEMICAL COMPOSITIONS OF OIL PALM TRUNK AT (*ELAEIS GUINEENSIS*) TOP AND BOTTOM PORTION

The growth of oil palm plantation has created the massive amounts of biomass, especially the oil palm trunk. That issue gives negative influence on the environment and replanting operation. The higher amount biomass gives an idea of the possibility to produce a panel product or wood composite product and therefore reduce the dependency of the wood based industry on solid wood. Different portions (top and bottom) and layers (inner and outer) used to determine chemical compositions. The chemical analyses of the OPT in relation to determine moisture content (MC), cold water solubility, hot water solubility, 1% NaOH, ash content, alcohol toluene, lignin, holocellulose, alpha-cellulose were carried out according to the Technical Association of Pulp and Paper Industry standard (TAPPI). The result showed bottoms have high chemical compositions than top portions and outer layer have more chemical composition than inner layer.

TABLE OF CONTENTS

APPROVAL SHEET	i
DEDICATIONS	ii
CANDIDATE'S DECLARATION	iii
ACKNOWLEDGEMENTS	iv
TABLE OF CONTENTS	v
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF PLATES	ix
LIST OF ABBREVIATIONS	x
ABSTRACT	xi
ABSTRAK	xii
CHAPTER	
1.0 INTRODUCTION	1
1.1 General	1
1.2 Problem Statement	2
1.3 Objectives	2
1.4 Scope of Study	3
1.5 Significance of study	3
2.0 LITERATURE REVIEW	4
2.1 Background of Palm oil	4
2.2 Oil Biomass	7
2.2.1 Availability of the Oil Palm Biomass	9
2.3 Properties oil palm	10
2.3.1 Physical Properties	10
2.3.2 Chemical Composition	11
2.4 Uses of Oil Palm	12
3.0 MATERIALS AND METHODS	13
3.1 Materials	13
3.1.1 Materials Preparation	13
3.2 Flow Chart Material Preparation	14
3.2.1 Logging	15
3.2.2 Cut into Size	15
3.2.3 Flaking	16
3.2.4 Drying	17
3.2.5 Grinding	17
3.2.6 Screening	18
3.3 Experimental Design	20
3.4 Method	21
3.4.1 Determination of Moisture Content (MC)	21
3.4.2 Determination Of Cold Water Solubility Of Wood	21

3.4.3	Determination of Hot Water Solubility of Wood	22
3.4.4	Determination 1% NaOH Solubility of Wood	22
3.4.5	Determination of Ash Content in Wood	23
3.4.6	Determination of Alcohol-Toluene	24
3.4.7	Determination of Lignin Content In Wood	24
3.4.8	Determination of Holocellulose	25
3.4.9	Determination of Alpha-Cellulose	26
4.0	RESULTS AND DISCUSSION	28
4.1	Chemical Composition Of Oil Palm Trunk	28
4.2	Different Layers of Chemical Composition between Inner and Outer In Oil Palm Trunk.	31
4.3	Comparison of Different Chemical Composition Of Oil Palm Trunk in Different Portion Top and Bottom Portion.	33
5.0	CONCLUSIONS AND RECOMMENDATIONS	36
5.1	Conclusions	36
5.2	Recommendations	37
	REFERENCES	38
	COCURICULUM VITAE	41
	PUBLICATION OF THE PROJECT REPORT UNDERTAKING	42
	PERMISSION FOR REFERENCES AND PHOTOCOPYING	43