## KENAF AND ITS UTILIZATION

by

MOHD RIZAL BIN MD KASSIM

Final Project paper to submitted in partial fulfillment for Diploma in Wood Industry, Faculty Applied Science .Universiti Teknologi Mara

**OCTOBER 2007** 

### **ACKNOWLEDGEMENTS**

Firstly I would like to express my grateful feeling to Allah of this blessing until I had been successful finished and submitted my final project is title "Kenaf and its utilization". Thanks you to my dearest parent because give support and wish me. I love u so much.

My deepest thanks to my advisor Miss Zalifah binti Mahmud, for her idea implementing this project until end of my study. I would like to greet my gratitude and appreciation to Associate Professor Dr. Jamaludin bin Kassim as lecturer WTE375, for his help and guidance through the course of my study. I would like to thank to my entire friend, for give a lot of support to my study. Finally I would like to thank for all which involve directly or indirectly during completion my project. Wassalam.

# TABLE OF CONTENTS

APPROVAL SHEET	i.
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS.	iv
LIST OF TABLES.	vi
LIST OF FIGURES	vii
LIST OF PLATES	vii
ABSTRACT	ix
ABSTRAK	X
CHAPTER 1: INTRODUCTION	1
1.1 General.	1
1.2 Objectives.	2
CHAPTER 2: HISTORY OF KENAF	3
2.1 History And Technology Kenaf in Malaysia.	4
2.2 How it Planting in Malaysia	4
2.3 Process involving Kenaf Plantation.	7
2.4 Pesticide and Fertilizer Use in Kenaf Crops.	8
2.5 Water Composed Processes.	8
2.6 Composed Process by Vapour	11
CHAPTER 3: CHARECTERISTIC OF KENAF	
3.1 General Characteristics.	13
3.2 Anatomical Properties.	13
3.3 Fiber properties.	14

3.4 Fiber Characterization and Content	15
3.5 Chemical Composition.	17
3.6 Vegetative Characteristics	18
3.6.1 Kenaf Leave	18
3.6.2 Kenaf Stalk	19
3.6.3 Kenaf Flowering Pattern	20
3.7 Review Of Kenaf Anatomical Feature Based On Flax and Hemp	21
CHAPTER 4 UTILIZATION OF KENAF	23
4.1 Wood Plastic Composite	23
4.1.2 Advantages Using Kenaf As Raw Material	24
4.1.3 Method that that has Been Used	27
4.2 Particleboard from Kenaf	31
4.2.2 Method that has been used in particleboard	32
4.3 Laminated Kenaf And Polypropylene	34
4.4 Kenaf Paper	38
CHAPTER 5: CONCLUSION	40
REFERENCES	41
VITA	42

#### **ABSTRACT**

## KENAF AND ITS UTILIZATION

## By

## MOHD RIZAL BIN MD KASSIM

Kenaf (Hibiscus cannabinus L.) belongs to the Malvaceae family. It is related to cotton and okra, and grows well in many parts of the United. State. Kenaf grows quickly, rising to height of 3 to 4 m in 4 to 5 months. Kenaf has been introduced in Malaysia, as the plant able to adapt with Malaysian climate (Anon., 1996). Kenaf is suitable to planting in Malaysia because it has many benefit other than tree.kenaf has been planting suitable to harvest at age 3 to 5 month. In Europe country kenaf is very popular because it has the cost to planting it is to low but the benefit is to high.Kenaf is suitable as raw material in composite manufacturing the major benefit of kenaf is fiber is long and strong. Planting in Malaysia is beginner because Malaysia is to low in technology compare to other country.