WOOD DETERIORATION BY FUNGI

By

SYED AZHAR BIN SYED AB AZIZ

Final Project Submitted in Partial Fulfillment for the Diploma in Wood Industries, Faculty of Applied Science, Universiti Teknologi MARA, Pahang Branch's

May 2006

ACKNOWLEDGEMENT

Alhamdulillah, I am highly gratitude to Allah S.W.T as the permission given, my final project paper that had been successfully submitted as planned. 'Wood deterioration by fungi' as the title of paper is to describe about the fungi life and their effects towards woods.

Added to my gratitude and special thanks to my advisor, Associate Prof. Hj. Abdul Jalil Bin Ahmad, a person who has given me his trust and confidence to done my works. Along the way, without his instructions, I can't complete my project paper. The lesson that had been learned is that, this final project paper can be done. Secondly, special thanks also to Associate Prof. Dr. Jamaludin Bin Kasim for their advice and guidance.

Lastly but not least, thanks to the University Teknologi Mara for the opportunities that make myself as I am today as a university graduation.

iii

TABLE OF CONTENTS

TITLE

PAGE

APP	ROVAL SHEET	i
	DICATION	
ACK	NOWLEDGEMENTS	iii
LIST	Г OF TABLES	vi
LIST OF FIGURES LIST OF PLATES ABSTRACT		vii
		viii
CHA	APTER	
I	INTRODUCTION	1
п	WOOD DECAYING FUNGI	
	2.1 Types and Diversity of Wood Decay	
	2.1.1 Types of Wood Decay	5
	2.1.1.1 White Rots	
	2.1.1.2 Brown Rots	
	2.1.1.3 Soft Rots	
	2.1.1.4 Molds and Stains	11
	2.1.2 Diversity of Fungi	
	2.2 Characteristics of Wood Decay	
	2.2.1 Macroscopic Appearance of Fungi	18
	2.2.2 Microscopic Appearance of Fungi	
	2.2.3 Wood Fungi Life Cycle	24
	2.3 Recognition of Fungal Decay	26
	2.4 Wood Stains and Discolorations	
	2.4.1 Types of Wood Discolorations	
	2.4.2 Fungal Stains	
ш	PREVENTIONS AND TREATMENTS	
	3.1 Classifications of Wood Preservatives	
	3.1.1 Organic (Oil Borne) Preservative	
	3.1.2 Water Borne Chemical Preservatives	
	3.2 Strategies to Protect Wood from Deteriorations	39
	3.2.1 Applications of Wood Preservative	
	3.2.2 Methods of Applying Wood Preservative	41

IV	ECONOMIC IMPLICATION	
	4.1 Wood Buildings	
	4.2 Utility Poles	44
	4.3 Marine piling	44
	4.4 Panel Products	45
V	CONCLUSION AND RECOMMENDATIONS	
REF	TERENCES	48
VITA		49

WOOD DETERIORATION BY FUNGI

By

SYED AZHAR SYED AB AZIZ

May 2006

ABSTRACT

Wood is a biological material and subject to decay, insect, and marine borer attack. Fungi are the major biotic agents in wood deterioration. As the wood have the higher value and important to world economy, their damage directly gives the effects to the industry to become higher losses. However, when wood is used in a more or less permanent application, it must be protected from biological degradation. Treating wood with the appropriate preservative increases its service life, and also helps to conserve our nation's timber resources. Treated wood has long been used for products such as crossties and pilings, and many new applications that have been developed today. Wood preservation also should be upgraded and study to make sure the wood quality in secured and environment ecosystem will be protected.