THE DETERIORATION OF WOOD BY WOOD-BORING BEETLES

By

WAN NORAINI BT W. DAUD

Final Project Submitted In Partial Fulfillment for the Diploma in Wood Industry, Faculty of Applied Sciences, Universiti Teknologi MARA,Pahang

October 2004

TABLE OF CONTENT

		Page		
APPRO	OVAL SHEET	i		
DEDICATION				
ACKN	OWLEDGEMENT	iii		
LIST C	OF TABLES	vi		
LIST C	OF FIGURES	vii		
LIST (OF PLATES	viii		
ABSTI	RACT	x		
ABSTI	RAK	xi		
CHAP'	TER			
1.	INTRODUCTION			
	1.1). General	1		
	1.2). Objectives	3		
		2		
2.	FAMILIES OF COMMON WOOD BEETLES AND THEIR			
	LIFE CYCLE			
	2.1). Enemies of Timber	4		
	2.2). Powder –Post Beetles –Bostrychidae and Lyctidae	10		
	2.3). Pinhole Borers – Scolytidae and Platypodidae	14		
	2.4). Longhorn Beetles – Cerambycide (Beetles in log).	16		
	2.5). Anobiidae(Furniture beetles).	18		
	2.5.1) Description and Identification	20		
		20		
3.	MECHANISME OF BEETLES INFESTATION			
	3.1). Pinhole Borers	27		
	3.2). Powder Post Beetles	30		
	3.3). Furniture Beetles	32		
	3.4). Longhorn beetle	35		
	3.5) Effects of Decay on the Physical Properties of Wood	38		
		20		
4.	PREVENTION AND CONTROLLING IN BEETLES			
	INFESTATION			
	4.1). Prevention in wood finishing	39		
	4.1.1). Treatment with Borates (Boric Acid)	39		
	4.1.1.1) Control of decay using borates	39		
	4.1.2). Oil-Type Preservatives	40		
	4.2). Moisture Content Control	41		
	4.3). Nonchemical Control	41		
	4.4). Wood Replacement	42		
	· · · · · ·			

4.5)	. Chemical Control on wood surface	42
	4.5.1). Pinhole borer: prevention and treatment of attack	44
	4.5.2). Furniture beetles: prevention and treatment of attack	45
	4.5.3). Powder post beetles: prevention and treatment of attack	46
4.6	Fumigation	47
4.7	Quarantine Control	48
5. CO 5.1	NCLUSION AND RECOMMENDATION). Discussion	49
5.2). Conclusion	.49
5.3). Recommendation	50
REFERENC VITA	ES	51 53

LIST OF TABLES

Table		Page
1.	The relationship between fungal decay effected insect damage.	4
2.	Characteristics of wood-damaging beetles.	5
3.	Insecticides for controlling wood-damaging beetles.	44
4.	Furniture beetle prevention and treatment of attack.	45
5.	Powder post beetle prevention and treatment of attack.	46

THE DETERIORATION OF WOOD BY WOOD-BORING BEETLES

By

WAN NORAINI BT W. DAUD

OCTOBER 2004

ABSTRACT

For centuries wood has been one of the most common and easiest to use construction materials. It is used practically everywhere in housing and agricultural buildings, as posts, utility and telephone poles and many others. Wood is biological material and subject to decay, insect, and marine borer attack. Insects represent the second major category of organisms that destroy wood. Some insects use the wood as a food source, and a few use it for shelter. Biological deterioration could occur ranks the more common species for natural heartwood durability. It is the extractives, pitch, oil, and other extraneous substances deposited in the heartwood that give resistance to decay and insects, thus making certain species more durable than others. When the extractives lack toxic or repellent effects, the heartwood is no more resistant than sapwood.