HANDBOOK ON PHILIPPINE TERMITES



Menandro N. Acda



Handbook on Philippine Termites

Menandro N. Acda

Department of Forest Products and Paper Science College of Forestry and Natural Resources University of the Philippines Los Banos College, Laguna

ISBN 978-971-541-246-3

Copyright 2007 University of the Philippines Los Banos Department of Forest Products and Paper Science College of Forestry and Natural Resources

All rights reserved

Published & Printed by: University Publications Office
Univ. of the Philippines Los Banos
College, Laguna

No part of this publication may be reproduced or transmitted in any form or by any means electronic or mechanical, now known or henceforth invented, including photocopying, recording, or in any information storage or retrieval system, without permission in writing from the author and publisher.

Preface

The goal of this book is to provide a reference material for homeowners and pest control operators, among others, to understand the biology and nature economically important termite species in the Philippines. It is my hope that in understanding their biology that effective control measures can be undertaken. Discussions on properties of various pesticides and treatment techniques for subterranean and drywood termites are included to successfully treat and protect structural timber and other wood products. The economics of termite control will help homeowners in the decision process on who to hire and what to use to protect their homes from termites.

I wish to extend my thanks to the many people and organizations that made the writing of this book possible. First, the International Tropical Timber Organization (ITTO) for providing the fellowship to support the preparation and writing of this book. Second, all chemical companies and pest control operators, too many to mention, that graciously shared information on termiticides, baits and current control practices. Others have contributed in many ways. Lastly, to the University Publication Office, UPLB for publishing the book and the technical reviewers for their helpful comments and suggestions.

Special thanks to my wife Teresa for her careful reviews of the early drafts, and to Carlo and Julian for all the inspirations throughout the writing of the manuscript.

Menandro N. Acda College, Laguna 2007

Table of Contents

Chapter 1 – Introduction to Termite Biology	
What is a Termite? Distribution and Classification Caste System Life Cycle and Development Formation of New Colony Food and Feeding Habits Sensory Organs Communication Defense The Nest	1 3 5 8 9 10 12 14 15
Chapter 2- Wood Infesting Termites of the Philipp	pines
Coptotermes vastator Light Macrotermes gilvus Hagen Nasutitermes luzonicus Oshima Microcerotermes losbanosensis Oshima Cryptotermes cynocephalus Light Cryptotermes dudleyi Banks	18 25 30 33 36 36
Chapter 3- Detecting Termites and Their Damage	
Evidence of Termite Infestation Mudtubes Fecal Pellets Damaged Wood Swarming What is Needed for Inspection The Inspection Process	40 40 42 43 45 47 48
Chapter 4 - Preventing Termite Infestation	
Eliminating Conditions Suitable for Termites	51

Remove Wood Debris	53
Remove Vegetation	54
Eliminate Moisture Problems	54
Use of Window and Door Screens	55
Understanding Buildings and Foundations	56
Foundations	56
Floorings	58
Building Attachments	59
Non Chemical Methods	61
Use of Naturally Durable Wood	61
Use of Chemically Treated Wood	61
Use of Sand Barrier	63
Chapter 5 - Termite Control Chemicals	
Termiticides	68
Types of Termiticides	69
Organochlorines	69
Organophosphates	69
Synthetic Pyrethroids	70
Chloronicotynyl	71
Phenyl Pyrazoles	72
Pyrroles	73
Insect Growth Regulators	74
Inorganic Insecticides	75
Termiticide Formulations	76
Emulsifiable Concentrates	76
Suspension Concentrates	77
Wettable Powders	77
Dusts	77
Baits	78
Which Termiticide and Formulation to Use?	79
Termiticides Used in the Philippines	80
The Case of Mapecon	81
Chapter 6 - Understanding the Termiticide Label	
Parts of Termiticide Label	84
Identifying Information	85

11000110100 0 00 0 0000	88
1100dddollad y Statellion	89
Directions for each	91
Physical and Chemical Hazards	92
Chapter 7 - Control of Subterranean Termites	
incondition rationalis	93
Chemical Barrier Treatment	93
Pre-Construction Treatment	95
Post-Construction Treatment	96
Factors Affecting Treatment	102
Chapter 8 - Control of Drywood Termites	
Preventive Methods	106
Exclusion	106
Preservative Treated Wood	106
Desiccating Dusts	107
Control Methods for Drywood Termites	108
Whole Structure Treatment	108
Localized or Spot Treatment	108
Miscellaneous Treatments	111
Chapter 9 - Termite Baiting	
Termite Baiting Technology	112
Bait Toxicants	114
Commercial Bait Product in the Philippines	115
Sentricon® Colony Elimination System	115
Field Performance of Sentricon®	120
Chapter 10 - Economics of Termite Control	
Understanding Various Treatment Options	122
Chemical Barrier vs. Baits	122
Tips on How to Choose the Right Pest Control Company	124
Cost of Termite Treatment	125