276043

WHO/CDS/WHOPES/2001.3 ENGLISH ONLY DISTR.: GENERAL

## MALARIA VECTOR CONTROL

INSECTICIDES FOR INDOOR RESIDUAL SPRAYING

By:

Dr J.A. Najera & Dr M. Zaim

World Health Organization Communicable Disease Control, Prevention and Eradication WHO Pesticide Evaluation Scheme (WHOPES)

©2001 World Health Organization. All rights reserved.

This document is not a formal publication of the World Health Organization (WHO) and all rights are reserved by the Organization. The document may, however, be freely reviewed, abstracted, reproduced and translated, in part or in whole, but not for sale or for use in conjunction with any commercial purposes.

## Contents

				Page			
Ac	knowle	dgemen	nts				
1.	Introduction						
	1.1	The use of indoor residual spraying in malaria control					
	1.2	Trend: sprayi	5				
	1.3	tions for the use of indoor residual	7				
	1.4		/HO Pesticide Evaluation Scheme	10			
	1.5	ems in the choice of insecticides	13				
	1.6	Classi	fication of insecticides	15			
2.	Criteria for the selection of insecticides						
	2.1	Humar	n and environmental safety	16 16			
		2.1.1	Toxicity and hazard	17			
		2.1.2		19			
		2.1.3	Measurement of exposure	22			
		2.1.4	General treatment of insecticide poisoning	24			
		2.1.5	Packaging, handling, transport and storage of insecticides	26			
		2.1.6	Disposal of insecticides and insecticide containers	29			
		2.1.7	Environmental effects	31			
	2.2	Efficac	32				
		2.2.1	Intrinsic insecticidal effect	32			
		2.2.2	Effect of the sprayed surfaces	33			
		2.2.3	Spraying cycles	35			

				1
	2.3		resistance	36
			Monitoring of resistance	37
		2.3.2	Mechanisms of resistance and cross-resistance	40
		2.3.3	Sources of selection pressure and resistance development	43
		2.3.4	Policies for protection against the development of resistance	45
	2.4	Onerat	tional issues	48
	۷.٦		Organization	48
			Formulation and dosage	50
			Erosion of nozzle tips	54
	2.5	Vector	ecology and behaviour	54
		2.5.1		54
		2.5.2	Behaviour	55
	2.6	Social	factors	58
	2.7		and cost-effectiveness	60
	2.8		sal of obsolete insecticides	62
3.	Purc	hasing	65	
4.		PES re or resid	69	
	4.1		ochlorines	69
			DDT	69
	4.2	Organophosphates		73
		4.2.1		74
		4.2.2	Fenitrothion	76
		423	Pirimiphos-methyl	77

4.3	Carba	mates	78
	4.3.1	Bendiocarb	79
	4.3.2	Propoxur	82
4.4	Pyreth	roids	83
	4.4.1	Alpha-cypermethrin	84
	4.4.2	Cyfluthrin	85
	4.4.3	Deltamethrin	87
	4.4.4	Etofenprox	88
	4.4.5	Lambda-cyhalothrin	89
Refe	rences		92
	4.4	4.3.1 4.3.2 4.4 Pyreth 4.4.1 4.4.2 4.4.3 4.4.4	4.3.1 Bendiocarb 4.3.2 Propoxur  4.4 Pyrethroids 4.4.1 Alpha-cypermethrin 4.4.2 Cyfluthrin 4.4.3 Deltamethrin 4.4.4 Etofenprox 4.4.5 Lambda-cyhalothrin

## **ACKNOWLEDGEMENTS**

The Department of Communicable Disease Control, Prevention and Eradication (CPE) wishes to thank the following for their critical review of the document and for their valuable comments and suggestions:

- Dr N Besbelli, Programme on Chemical Safety, World Health Organization, Geneva, Switzerland
- Dr M Coosemans, Institute of Tropical Medicine, Antwerp, Belgium
- Dr L Chadd, Zeneca, Surrey, UK
- Mr K Chanon, Roll Back Malaria, World Health Organization, Geneva, Switzerland
- Dr D Coppen, American Cyanamid, Gembloux, Belgium
- Dr CF Curtis, London School of Hygiene and Tropical Medicine, London, UK
- Dr C Debourg, National Chemicals Inspectorate (Kemi), Solna, Sweden
- Dr P Guillet, Communicable Disease Control, Prevention and Eradication, World Health Organization, Geneva, Switzerland
- Dr P Herath, Candy, Sri Lanka
- Dr J Invest, Aventis, Bucks, UK
- Dr T Itoh, Sumitomo Chemicals, Osaka, Japan
- Dr R Gusmao, World Health Organization, Regional Office for the Americas, Washington D.C., USA
- Dr M Nathan, Communicable Disease Control, Prevention and Eradication, World Health Organization, Geneva, Switzerland
- Dr AM Oliveira-Filho, Lab. de Biologia, Universidade Federal do Rio de Janeiro, Brazil
- Dr J Pronczuk, Programme on Chemical Safety, World Health Organization, Geneva, Switzerland

- Dr VP Sharma, Consultant, WHO Regional Office for South-East Asia, Delhi, India
- Dr T Tanaka, Mitsui Chemicals, Tokyo, Japan
- Dr I Vythilingam, Institute for Medical Research, Kuala Lumpur, Malaysia
- Dr G B White, Douvaine, France

This publication has been funded by the Roll Back Malaria (RBM).

预览已结束, 完整报告链接和二维码如下:

https://www.yunbaogao.cn/report/index/report?reportId=5\_30378



