TABLE OF CONTENTS

	Page
TABLE OF CONTENTS	i
LIST OF TABLES	ii
LIST OF FIGURES	iv
LIST OF ABBREVIATIONS	V
INTRODUCTION	1
OBJECTIVES	5
LITERATURE REVIEW	6
MATERIALS AND METHODS	17
RESULTS AND DISCUSSION	28
Results	28
Discussion	48
CONCLUSION	56
LITERATURE CITED	57
APPENDIX	72

LIST OF TABLES

 Percent mortality of unmated, nulliparous, parous, and bloodfed six day-old <i>Aedes aegypti</i> after contact with deltamethrin and DDT using standard World Health Organization susceptibility test procedures. Percent escape and total mortality of pre-conditioned six-day-old <i>Aedes aegypti</i> after contact with deltamethrin and DDT in excito repellency tests. Percent escape and total mortality of pre-conditioned six-day-old 	age
using standard World Health Organization susceptibility test procedures. 3 Percent escape and total mortality of pre-conditioned six-day-old Aedes aegypti after contact with deltamethrin and DDT in excito repellency tests. 33	
 Percent escape and total mortality of pre-conditioned six-day-old Aedes aegypti after contact with deltamethrin and DDT in excito repellency tests. 	
Aedes aegypti after contact with deltamethrin and DDT in excito repellency tests.	1
excito repellency tests. 33	
3 Percent escape and total mortality of pre-conditioned six-day-old	2
5 Tereent escape and total mortanty of pre-conditioned six-day-old	
Aedes aegypt after noncontact with deltamethrin and DDT in	
excito repellency tests.	3
4 Escape time for 25%, 50% and 75% of six-day-old <i>Aedes aegypti</i> at	
different physiological conditions exposed to insecticide-treated	
chambers. 34	4
5 Percent mortality of Aedes aegypti and Anopheles harrisoni	
populations from Kanchanaburi expose to different doses of catnip oil	
using standard World Health Organization susceptibility test procedures. 40	0
6 Escape response and percent mortality of female <i>Aedes aegypti</i> from	
Kanchanaburi after contact and non contact with catnip oil in excito-	
repellency tests. 4	1
7 Escape response and percent mortality of female <i>Anopheles harrisoni</i>	
from Kanchanaburi after contact and non contact with catnip oil in	
excito repellency tests. 42	2
8 Escape time (ET) in minutes for 25%, 50% and 75% of two species of	
field caught mosquito exposed to treated chambers with catnip oil 43	3

LIST OF TABLES (Continued)

Гable		Page
9	Comparison of the escape response between paired control and non-	
	contact trials, control and non contact trials, and paired contact and	
	non contact trials for two species of field caught mosquito with catnip oil	
	in excito repellency tests.	44
10	Comparison of the escape response by dosages for 2 species of field	
	caught mosquito with catnip oil after contact and noncontact in	
	excito repellency tests.	45

LIST OF FIGURES

Figure		Page
1	Percentage of dengue cases reported by ten countries in SEARO	
	in 2006.	7
2	Dengue cases report in Thailand from 1985 to 2006.	8
3	Number of DHF cases in the region of Thailand.	8
4	The ranges with risk of malaria in Thailand.	10
5	Morbidity and mortality rates (per 100,000 populations) of malaria	
	cases.	11
6	Number of malaria cases by region of Thailand.	11
7	Major constituents of catnip oil.	16
8	Catnip foliage	16
9	Illustration of the excito-repellency test chamber for study of	
	insecticide avoidance behavior by mosquitoes.	21
10	Wing pattern between Anopheles minimus and Anopheles harrisoni.	23
11	Illustration of an automated excito-repellency test system.	27
12	Escape patterns of four different physiological conditions of female	
	Aedes aegypti in contact and noncontact trials with 0.02 g/m ²	
	deltamethrin.	35
13	Escape patterns of four different physiological conditions of female	
	Aedes aegypti in contact and noncontact trials with 2 g/m ² DDT.	36
14	Comparison of escape patterns of female Aedes aegypti from	
	Kanchanaburi in contact and non-contact trials exposed to different	
	doses of catnip oil (Nepeta cataria).	46
15	Comparison of escape patterns of female Anopheles harrisoni from	
	Kanchanaburi in contact and non-contact trials exposed to different	
	doses of catnip oil (Nepeta cataria).	47

LIST OF ABBREVIATIONS

Ae. = Aedes

An. = Anopheles

h = Hour

KD = Knockdown

MOPH = Ministry of Public Health

P = Probability Value

SE = Standard Error

WHO = World Health Organization