

UNIVERSITI TEKNOLOGI MARA

**INFESTATION LEVEL OF DENGUE VECTOR
ACCORDING TO DAY EXPOSURE OF OVITRAP
IN DENGUE CLUSTER AREA**

PAULINA PUNGGING

Project submitted in fulfilment of requirement for the degree of

Bachelor In Environmental Health And Safety

(Hons.)

Faculty Of Health Sciences

JULY 2018

DECLARATION BY STUDENT

Project entitled ‘Infestation Level of Dengue Vector According to Day Exposure of Ovitrap in Dengue Cluster Area,’ is a presentation of my original research work. Whenever contributions of others are involved, every effort is made to indicate this clearly, with due reference to literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of Project Supervisor, Dr. Shantakumari Rajan. It has been submitted to the Faculty of Health Sciences in partial fulfillment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

Student’s signature :

.....

(PAULINA PUNGGING)

2014867102

911018-12-6742

Date:.....

ACKNOWLEDGEMENT

First of all, thanks to God Almighty for His mercy and guidance in giving me full strength to complete this 'long-distance learning' task. Even facing with some difficulties in completing this study, I still managed to finish it.

I extend my thanks to my supervisor, Dr.Shantakumari Rajan, senior lecturer at Faculty of Health Science at University Teknologi Mara (UiTM) for all of her support and guidance in helping me to finish this study that really tested my abilities mentally and physically. The door to Dr.Shanta office was always open whenever I ran into a trouble spot or had a question about my research or writing. She consistently allowed this paper to be my own my work, but steered me in the right the direction whenever she thought I needed it.

Special appreciation to the community in Taman Seroja, Sepang, Selangor for giving me permission and great co-operation during conducting this study. Not forget to mention the study equipment used throughout this study that was provided by Pejabat Kesihatan KLIA. Particular thanks also to Sir Azrool Rizal, entomologist at Pejabat Kesihatan Kawasan Kudat, Sabah, who were always prepared to answer my questions and helped me to understand the problems rose during conducting this study.

I also must express my very profound gratitude to my parents, for supporting me mentally and physically not just during finishing this study but also during my whole studies in order to become more knowledgeable person in environmental health and safety and improving my career as public health inspector.

Last but not least, grateful acknowledgment to all my friends who never give up in giving their support to me in all aspects of life. Without all of you, all these tough years would not be easy.

Thank you.

TABLE OF CONTENTS

TITLE	PAGE
DECLARATION BY STUDENT	i
INTELECTUAL PROPERTIES	ii
APPROVAL BY SUPERVISOR	v
ACKNOWLEDGEMENT	vi
LIST OF CONTENTS	vii
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF APPENDICES	xi
LIST OF ABBREVIATIONS	xii
ABSTRACT	viii
ABSTRAK	xiv

CHAPTER 1: INTRODUCTIONS

1.1	Background	1
1.2	Problem Statement	2
1.3	Objectives	5
	1.3.1 General Objectives	5
	1.3.2 Specific Objectives	5
1.4	Significance of Study	6
1.5	Operational Definition	6
	1.5.1 Specimen Collection for Surveillance	6
	1.5.2 Egg Surveillance	6
	1.5.3 Entomological Indicators	6
	1.5.4 Assess	6
	1.5.5 Dengue Diseases	7
	1.5.6 Urban	8
	1.5.7 Cluster Dengue Area	8
1.6	Conceptual Framework	8
1.7	Research Framework	9

ABSTRACT

Malaysia is one the nations that endemic in transmission of dengue disease. The purpose of this study was to investigate the infestation levels of *Aedes* mosquitoes using ovitrap with different number of day exposure of ovitrap in field. The ovitrap were left in field for three (3) days, five (5) days and seven (7) days and the data was collected according to day exposure. Result implied that Positive Ovitrap Index (POI) and mean egg per trap (MET) of *Aedes* mosquitoes in ovitrap was statistically significant different to number of day exposure [three (3) days = POI : 20.00 %, MET : 5.69, five (5) days = POI : 26.25 %, MET : 7.3, seven (7) days = POI : 40.00 %, MET : 11.41]. There is strong relationship between number of day exposure and the densities of egg where it can be concluded that the longer the trapping period the higher the densities of mosquito recorded. However, five (5) days exposure considered preferably to deploy ovitrap in field since seven (7) days exposure was too long and completed life cycle of *Aedes* mosquitoes might be expected in certain ovitrap. Hence, it is directly affects the vector control programs when to launch 'alert' since the programs mostly relied on the threshold point of POI. Overall, the result from study indicates a new protocol of five (5) days can be used to investigate the infestation level of *Aedes* mosquitoes in dengue area.

Keywords: Aedes mosquitoes, dengue disease, infestation, oviposition behaviour, day exposure, ovitrap, mean egg per trap (MET), Positive Ovitrap Index (POI), vector control