UNIVERSITI TEKNOLOGI MARA

TEMPORAL CHARACTERISTICS OF PHYSICOCHEMICAL PARAMETER OF JUVENILE MOSQUITO (DIPTERA: CULICIDAE) BREEDING MEDIA IN RURAL AREA

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AUTHOR'S DECLARATION

The project titled "Temporal Characteristics of Physicochemical Parameter of Juvenile Mosquito (Diptera: Culicidae) Breeding Media in Rural Area" is a presentation of my original work. Every contribution by those involved was indicated clearly, with references to literature, and acknowledgement of collaborative research and discussions. The project was done under the supervision of Dr Nazri Che Dom. This thesis has been submitted to the Faculty of Health Sciences in partial fulfilment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

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TABLE OF CONTENTS

TITLE PAGE
AUTHOR'S DECLARATION i
INTELLECTUAL PROPERTIES ii
APPROVAL OF SUPERVISOR iii
ACKNOWLEDGEMENT iv
TABLE OF CONTENTS v
LIST OF TABLES vii
LIST OF FIGURES viii
LIST OF ABBREVIATIONS ix
ABSTRACT x

CHAPTER 1: INTRODUCTION
1.1 Background of study 1
1.2 Problem statement 2
1.3 Study objectives
1.3.1 General objective 3
1.3.2 Specific objective 3
1.4 Scope and limitation of the study 4
1.5 Significance of the study 4
1.6 Conceptual framework 5

CHAPTER 2: LITERATURE REVIEW
2.1 Introduction 6
2.2 Life Cycle of Mosquito 7
2.3 Physicochemical parameter 9
2.4 Selected publication of related studies 13
2.5 Container preferential for oviposition 14

CHAPTER 3: METHODOLOGY
3.1 Introduction 16
3.2 Study location and population 16

ABSTRACT

Temporal Characteristics of Physicochemical Parameter of Juvenile Mosquito (Diptera: Culicidae) Breeding Media in Rural Area

by

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Introduction: Dengue fever is a mosquito-borne disease, very infectious and remains to be one of the major public health problems around the world. *Aedes* mosquitoes; *Ae. aegypti* and *Ae. albopictus* in particular, are known to be important vectors in carrying Dengue viruses and spreading it to human hosts. **Objective:** The objective of this study was to assess the physicochemical characteristics in waters that lead to the selection for breeding by adult mosquitoes. **Methodology:** An extensive entomological survey has been conducted in four villages in Sukau Sub-district for 12 weeks to find out the distribution of the Aedes larva in relation to the temporal physicochemical characteristics of the breeding water. **Results:** The most efficient container types found which have the most abundant mosquito larva are container glass containers (CID7 = 17 %) and followed by tires (CID1 = 13 %.), and plastic containers (CID3 = 12 %). All water samples (n=100) collected were tested for physicochemical parameters in order to measure the water quality of the oviposition containers and it was found that there were strong relationship between the presence of *Aedes* immature with pH (*p-value* = 0.001; range: 7.13 – 7.62), turbidity (*p-value* = 0.001; range: 9.70 – 12.80), and total coliform (*p-value* = 0.001; range: 71.33 – 131.35). Other parameter showed a weak relationship, but may also contribute to the breeding selection for *Aedes* adults. **Conclusion:** This study found that the prevalence of *Ae. albopictus* in the container-breeding habitats echoed its significance as the principal vector for dengue. The physicochemical characteristics of breeding sites can be manipulated to be integrated into the Dengue Management Program to control *Aedes* population.