

UNIVERSITI TEKNOLOGI MARA

**STUDY ON THE DISTRIBUTION AND
ABUNDANCE OF DENGUE VECTORS
USING MOSQUITO AUTOCIDAL TRAP**

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In the name of Allah, The Most Gracious, The Most Merciful.

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ABSTRACT

Dengue fever is one of the deadliest mosquito borne disease that commonly found in tropical and sub-tropical country. The virus that causes dengue and dengue hemorrhagic fever is an arbovirus with four antigenically distinct serotypes (DEN-1, 2, 3 and 4) that offer no long-term cross-protective immunity against each other. *Aedes aegypti* and *Aedes albopictus* are the two vectors to spread the dengue virus. Intensive control efforts by health agencies such as space spraying and search-and-destroy are the method that been use for many years to control the population of the mosquitoes, but the virus contiously to spread. A study conducted in Ayer Keroh, Melaka to evaluate the effectiveness of Malaysia Mosquito Autocidal Trap (MyMAT) in capturing and killing adult *Aedes* mosquitoes. This device is a modification of the traditional ovitrap used to monitor mosquitoes, especially the *Aedes* species. One residential area, Taman Tasik Utama C, Ayer Keroh, Melaka was selected for this study. Each house will install with four MyMAT, two MyMAT will be place at indoor environment and two more will be place at outdoor environment. The MyMAT will randomly install at the resident houses for 10 weeks. For every 2 week, the sticky ring will be collected and replace with the new sticky ring. The positive sticky ring will be send to the laboratory for identification, counted and record of the mosquitoes species. Female *Aedes albopictus* was the predominant mosquito trapped in the MyMAT (13.5%), followed by female *Aedes aegypti* (10.4%). On an average, about 27% of the participating houses successfully trapped *Aedes* species during each visit. The MyMAT is thus an effective device for trapping and controlling mosquitoes, especially *Aedes* species.

Keywords: *Dengue, alternative dengue control, mosquito trap, Aedes, Ae. aegypti, Ae. ablbopictus, trapping device*

CHAPTER 1

INTRODUCTION

1.1 Overview of the study

Dengue is a serious mosquito borne disease common in tropical and sub-tropical countries including Malaysia. There is at present a lack of specific treatment and an effective tetravalent vaccine against dengue. (Lee HL et al., 2015). The control of dengue depends solely on the suppression of the two most important vectors namely, *Aedes aegypti* and *Aedes albopictus*. (Lee HL et al., 2015). The vectors can make human get severe dengue fever with several symptom, and if the person that infected with dengue virus is late treated, it will lead to death. During week 26, 23rd Jun 2019 to 29th Jun 2019, a total of 2,806 dengue cases including one deaths were reported in Malaysia, bringing the cumulative number as of 29 June 2019 to 62,421 cases including 93 deaths. This is higher compared to 32,425 cases with 53 deaths reported during the same period last year (WHO, 2019). Space spraying of insecticides to eliminate adult *Aedes* mosquitoes in the outbreak area to achieve rapid control of an epidemic has been a favored approach for more than 20 years, but recently, there is much controversy on the effectiveness of space spraying of insecticides to control dengue epidemics. (Kumarasamy., 2006). The increasing cases compare to last year due to same period is show in the table below :