UNIVERSITI TEKNOLOGI MARA

DENGUE VECTOR SURVEILLANCE IN PORT DICKSON, NEGERI SEMBILAN

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Project submitted in fulfillment of the requirements for the degree of
Bachelor in Environmental Health and Safety (Hons.)

Faculty of Health Sciences

January 2020

ACKNOWLEDGEMENT

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

Assalamualaikum and Alhamdulillah, all praise to Allah S.W.T The Supreme Lord of the Universe. Peace and blessing to Nabi Muhammad S.A.W., all prophets and their families. I praise Allah S.W.T. for the strength and His blessings in completing my study.

Thousands of thanks and love to my parents Mr. Noor Azman Bin Nordin and my beloved husband Muhamad Syafiq Bin Nazri and my siblings for their support and encouragement through thick and thin of my study. My deepest gratitude and appreciation to my dearest supervisor, Dr. Ahmad Razali Bin Ishak who spent his time and efforts in guiding and advising from the beginning till the end of my research journey. Not to forget, I would like to thank all the lecturers in Department of Environmental Health and Safety, Faculty of Health Sciences who always share their thoughts, knowledge and advice throughout my study in UiTM Puncak Alam. Only God can reward all of you with goodness.

My sincere thanks and appreciation goes to all the staff from the Vector Control Unit in PKD Port Dickson who gave their full cooperation and assisted me in many ways throughout my study. A special thanks to my friends from HS243 who always give me support and motivation while completing my study. May our friendship lasts forever. Lastly, I would like to thank everyone who involved directly and indirectly in this study.

Thank You.

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ABSTRACT

Ovitrap surveillance was initiated for six continuous weeks to determine the distribution and abundance of Aedes sp. mosquitoes in Port Dickson, Negeri Sembilan, and the impact of meteorological conditions on the Aedes populations. Two study areas within the locality were selected: Taman Sri Tanjung and Taman Intan Perdana. The abundance of Aedes populations in Taman Sri Tanjung was indicated by ovitrap index (OI) which ranged from 36.67%-82.14%. The mean number of larvae per ovitrap of *Ae. Aegypti* ranged from 4.08 ± 1.76 to 13.40 ± 0.81, while the mean for *Ae. Albopictus* ranged from 17.17 ± 1.47 to 25.83 ± 2.06. On the other hand, the OI for Taman Intan Perdana ranged from 56.67% to 80.00%, respectively, while the mean number of larvae per ovitrap of Ae. Aegypti ranged from 8.70 ± 1.06 to 13.50 ± 1.04, while the mean for Ae. Albopictus ranged from 13.85 ± 1.40 to 25.12 ± 1.98, respectively. The mean number of larvae per ovitrap obtained from both localities, shows that there was only a significant difference of mean between both locations in the first trip (P=0.006), whereas there were no significant difference in mean number of larvae between Taman Sri Tanjung and Taman Intan Perdana in other trips. The studies showed a correlation between OI and mean number of larvae per ovitrap for aedes populations in in Taman Sri Tanjung and Taman Intan Perdana (r = 0.56). There was a correlation among rainfall and mean number of larvae per ovitrap in Taman Sri Tanjung and Taman Intan Perdana (r = 0.56). However, there was no correlation between the mean larvae number per ovitrap in both study areas with temperature.

Keywords: *Dengue fever, aedes mosquito, climate change, ovitrap.*

CHAPTER 1

INTRODUCTION

1.1 Background information

From World Health Organization (WHO), The risk of mosquito-borne dengue infection has increased dramatically in tropical and sub-tropical regions around the World in recent decades. Every year there are somewhere in the range of 50 and 100 million dengue diseases, and in excess of 500,000 cases are hospitalized (Gubler.D, 2006). The example of dengue transmission is impacted by complex variables including the earth, atmosphere and climate, human conduct and dengue infection serotype-explicit crowd insusceptibility among the human populace (Hay *et al*., 2000; Gubler, D.J. *et al*., 1997; Halstead, 2008).

Dengue fever (DF) is the most significant mosquito-borne viral disease affecting human. According to Rudnick *et al*. (1965), *Aedes* species have become the fundamental vectors in the spread of dengue and dengue hemorrhagic fever in the tropical and subtropical area. The distribution of dengue cases in our country has been well established (Lee, 1990). Mosquito-borne illnesses, for example, dengue hemorrhagic fever and dengue fever (DF) are the most significant arthropod-borne viral ailments of general wellbeing in Malaysia. With 108,698 cases and 215 deaths in 2014 and 120,836 cases and 336 deaths in 2015, Malaysia first experienced a huge increase.

Then the big jump in figures was due to a local shift to a more virulent strain in the prevalent strain of dengue virus. In 2016, the upward trend was reversed, with