

UNIVERSITI TEKNOLOGI MARA

**EFFICACY OF SPACE SPRAYING
IN RESPONSE TO THE DENGUE CASES IN
SANDAKAN SABAH**

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Thesis submitted in fulfilment
of the requirements for the degree of
Master in Health Sciences
(Environmental Health and Safety)

Faculty of Health Sciences

January 2023

ABSTRACT

Sandakan is one of the districts that contribute to a high incidence of dengue cases in Sabah. Sabah is as an area where sylvatic and urban circulation of pathogen are known to intersect. The retrospective study conducted from 2011 until 2020 to find out the relationship between incidence of dengue cases and frequency of fogging. The finding from this study, found that there was no significant impact between frequency of fogging and the dengue cases (p value 0.0000). For 10 years of data 75.76% of frequency of fogging can be explained by dengue cases. Experimental study was conducted in locality A (Taman Sejati Ujana), B (Taman Sejati Ujana B) and C (Taman Airport) to further investigate the efficacy of fogging. Locality C act as a control area and no preventive of fogging was conducted. Two types of insecticide as used wick is oil and water based. The percentage reduction in POI between pre- and post-treatment surveillance was recorded. The finding shows that, there was a reduction of ovitrap positive after application of preventive fogging in Locality A and B. The number of positive ovitrap (POI) after fogging was decreased from 36.67 % to 16.67 in locality A, 44.17% to 18% in locality B. Meanwhile in control area the ovitrap index increase from 18.33% to 30%. Surveillance of entomological parameter found that the preventive fogging lasted only two weeks. The number of positive ovitrap increase in week 8 for both water and oil-based insecticide. The number of ovitrap positive can be explained by the re – emergence of the adult mosquitoes. Cage adult mosquitoes was placed in locality A and B. 2 insecticides at different dosage were used for bioassays test. After 1h of exposure more adult mosquitoes died when exposed to Malathion compared to Acpidor. In this study found that 97.3% of mortality in recommended dosage meanwhile 100% of mortality in higher dosage for oil – based insecticide. 83.3% of mortality of recommended dosage and 94% in higher dosage for water – based insecticide. Both insecticides show exponential graph curve which means the increasing of slope. Further study still needs to be conducted for future reference and using different field settings area.

Keywords: *Space spraying, ovitrap, bioassays, dengue*

ACKNOWLEDGEMENT

All praise be to God the Almighty.

I would especially like to give my deep and sincere gratitude to my supervisor, Assoc. Prof. Dr Nazri Che Dom who made this research possible. As my teacher and mentor, he has taught me more than I could ever give him credit. His guidance and advice carried me through all the stages in writing my project. I am indebted to Miss Noor Darliah Sikandar, Entomologist Officer who worked actively to assist me with the field work guidelines and protocol. I am extending my heartfelt thanks to Sandakan head of department Dr Johari Awang Besar, Dr Hafizah Ibrahim and all staffs of Vector Control Department. This research would not been possible without their help.

Nobody has been important to me in the pursuit of this study other than the members of my family. I would like to thank my parents, whose love and guidance are with me in whatever I decided to pursue. Their continuous support and prayer for me was what sustained me this far.

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