

UNIVERSITI TEKNOLOGI MARA

**RETROSPECTIVE STUDY ON
TEMPORAL PATTERN OF DENGUE
VECTOR POPULATION IN RURAL
AREA OF SETIU TERENGGANU**

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DECLARATION BY STUDENT

The project titled “Retrospective Study on Temporal Pattern of Dengue Vector Population in Rural Area of Setiu Terengganu” is a presentation of my original research 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 guidance of Project Supervision, 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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In the name of Allah, The Most Gracious, The Most Merciful.

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ABSTRACT

Introduction: Dengue fever disease in Malaysia is increasing every day. The death rate of dengue fever cases was also reported mainly rising in urban areas. There is also a dengue fever case reported in the rural area. Hence, relevant parties have taken various actions and controls to prevent dengue cases from occurring and continue to spread. The study is focus on determining the density of *Aedes* mosquito using ovitrap surveillance in rural area. Besides that, the positive ovitrap index (POI and the mean egg per trap (MET) in rural area will be determined. This study was conducted in rural area of Kampung Pak Kancil, Setiu, Terengganu. One unit of ovitrap will be placed inside and outside the 30 houses at random location. Continuous ovitrap surveillance was conducted weekly starting from January 2017 until December 2017. **Objective:** To assess the spatial and temporal pattern of *Aedes* mosquito using ovitrap surveillance in selected rural area in Setiu, Terengganu. **Methodology:** This study consists of four phases namely Phase 1, Phase 2, Phase 3 and Phase 4. In Phase 1, identification of the location is made. Phase 2 is ovitrap setting. In Phase 3, ovitrap collection. The calculation of the number of ovitrap was made to identify the recovered ovitrap. Next is Phase 4, data collection, analysis and interpretation. Data is collect based on the sample collection. Then, the data will be analysed. The data was analysed to know the density of the *Aedes* mosquito beside knowing the distribution and abundance of *Aedes* mosquito. **Result:** In total, 60 traps were installed and 2838 recovered, and 98.54 (%) traps showed the presence of *Aedes* eggs in indoors and outdoors. Of the total 1077 eggs, 589 (54.68%) were recovered from indoors and 488 (45.32%) were recovered from outdoors area. The immersion of all these eggs enabled the identification of both species namely *Aedes aegypti* and *Aedes albopictus*. Figure 4.1 describe the ovitrap index (OI) and the mean number larvae per ovitrap of dengue vectors obtained from 52 weeks of continuos surveillance in selected rural areas in Setiu, Terengganu. The result showed the distribution and abundance of *Aedes* population in rural area in Setiu with OI range of 5% to 45%. The mean number larvae per ovitrap of *Aedes albopictus* range from 18.88 to 27.00 while *Aedes aegypti* was not available in this study area. In general, the temporal distribution pattern of dengue vectors in rural area showed fluctuation patterns of ovitrap indices with a range of 5-45% indicating that the area have a high dengue vectors populations. (POI: $y = 0.123x + 15.233$; MET: $y = 0.0428x + 19.568$). **Conclusion:** Based on the POI and MET result, the study area which is Kampung Pak Kancil, Setiu showed that this area is in high risk dengue case but still under controlled.

Keywords: Ovitrap setting, rural area, distribution and abundance of *Aedes* population, positive ovitrap index (POI), mean eggs per trap (MET).