UNIVERSITI TEKNOLOGI MARA

LARVICIDAL ACTIVITIES OF *Allamanda cathartica* FLOWERS EXTRACTS AGAINST *Aedes albopictus*

MUHAMAD AQIL ARIF BIN ZAHARINUDDIN

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DECLARATION BY STUDENT

Project entitled "Larvicidal Activities of *Allamanda cathartica* flowers extracts against *Aedes albopictus"* is a presentation of my original research work. Whenever contributions of others are involved, every effort is made to indicate this clearly, with due reference to literature and acknowledgement of collaboration research and discussions. This project was done under the guidance of Project Supervisor, Dr. Siti Nazrina Camalxaman and co-supervisors Dr. Nazri Che Dom and Dr. Salfarina Ramli. It has been submitted to the Faculty of Health Sciences in partial fulfilment of the requirement for the Degree of Medical Laboratory Technology (Hons).

Student's signature:

_____

(Muhamad Aqil Arif Bin Zaharinuddin)

2015837302

941216-14-7285

Date: _____

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ABSTRACT

LARVICIDAL ACTIVITIES OF *Allamanda cathartica* FLOWERS EXTRACTS AGAINTS *Aedes albopictus*

Mosquitoes borne disease are a public health burden causing high morbidity and mortality worldwide. In southeast Asia, *Aedes* species including *Aedes albopictus* are native to the tropical and subtropical climates. This secondary vector has the capacity to colonize and transmit a wide variety of arboviruses of medical and scientific importance. Temephos has long been used as a tool to eradicate mosquito vectors. Nevertheless, rampant uses of such chemical insecticides poses multiple issues of concern including resistance and toxicity which poses harm both to environment and the human health. This recent study was objectively to study the larvicidal activities of the *Allamanda cathartica*'s extract towards the late third and fourth instar larvae of *Aedes albopictus.* Maceration technique was used in order to extract the grounded flower part of the plant using the ethanol as solvent. According to World Health Organization protocol with minimum of 25 larvae were performed the larvicidal bioassays at five different concentration. Mortality of the larvae were recorded at 24 and 48 hours exposure and LC_{50} and LC_{90} values were calculated. Given that at 24 hours the LC_{50} and LC_{90} value were 578.649 ppm and 913.231ppm, while 48 hours showed that the results were LC_{50} at 385.154 ppm, and LC_{90} at 635.870 ppm. Significant results of the *Allamanda cathartica*'s extract showed that the plant have great potential to be substitute with the temephos. Extraction of *Allamanda cathartica* has a potential as a natural and eco-friendly larvicide agent. In future, studies could be establish on type of solvent correlate with test concentration to identify the most optimum *Allamanda cathartica* extraction as a larvicidal agent.

Keyword: *Allamanda cathartica*, larvicidal, maceration, *Aedes albopictus*, larvicidal bioassays, ethanolic extracts.