UNIVERSITI TEKNOLOGI MARA

ASSESSMENT OF REPELLENT ACTIVITY OF *IPOMOEA CAIRICA* (MORNING GLORY) EXTRACTS AGAINST *AEDES AEGYPTI* MOSQUITO

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

Faculty of Health Sciences

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Declaration by Student

Project entitled "Assessment of repellent activity of *Ipomoea cairica* (Morning Glory) extracts against *Aedes aegypti* mosquito" is a presentation of my original research work. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of Mr. Ahmad Razali Bin Ishak as Project Supervisor and Dr. Hidayatul Fathi Bt. Othman as Co-supervisor. It has been submitted to the Faculty of Health Sciences in partial fulfillment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons.)

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ABSTRACT

ASSESSMENT OF REPELLENT ACTIVITY OF *IPOMOEA CAIRICA* (MORNING GLORY) EXTRACTS AGAINST *AEDES AEGYPTI* MOSQUITO

NIRAM MUNIRAH BINTI MOHAMED BEDERI

Mosquito-borne diseases cause millions of deaths worldwide every year. Dengue fever is one of the important mosquito-borne diseases. *Aedes aegypti* mosquitoes are the main vector for dengue fever. The dengue viruses are passed on to humans through the bites of an infective female *Aedes* mosquito (WHO, 2013). Applying repellent is one of the methods to reduce the transmission of dengue viruses. However, to overcome adverse effects from synthetic product, natural product of plant origin can be an alternative (Youssif & Shaalan, 2011). Objective of study is to determine repellent efficacy of *Ipomoea Cairica* (Morning Glory) extraction against adult *Aedes aegypti* mosquitoes. First phase is collection of sample plant, *Ipomea cairica* (Morning Glory). After sample collection, *Ipomea cairica* was prepared for sampling extraction using soxhlet extraction. The crude extract then was using in preparation of stock solution and serial dilution. Serial dilution was used for testing repellency efficacy of *Ipomea cairica* extract against *Aedes aegypti*. Highest percentage repellency of *Ipomea cairica* extract is 96.88% at 120 seconds' exposure on the highest concentration (18.93µg/cm^2). Optimum repellency of *Ipomea cairica* extract showed at 90 seconds' exposure with ED_{50} 0.29µg/cm^2 and ED_{90} 1.36µg/cm^2. Time exposures at 60 seconds and 120 seconds yielded much higher ED_{50} 2.90µg/cm^2 and 3.24µg/cm^2 while ED_{90} 34.47µg/cm^2 and 15.64µg/cm^2 respectively. *Ipomea cairica* extract is able to repel *Aedes aegypti* mosquitoes biting at lower effective dose (ED_{50} 0.29µg/cm^2). Thus it can consider a very potentially effective repellent product.

Keywords: *Ipomoea Cairica, Aedes aegypti, Effective Dose, ED_{50}, ED_{90}*