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**FINAL REPORT:  
SOLAR MOSQUITO BREEDING PREVENTER**

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## **ABSTRACT**

Dengue becomes one of the most dangerous threats to humanity life all around the world. Therefore, many of preventive action have been taken to reduce the number of people who killed by dengue. On the other hand, nowadays humans are tends to use an automatic device in their life. This is due to the improvement of the technology development which is to make humanity life become more comfortable and easy. In this case, an automatic operated device need to be produce in term to counter the dengue problems. The Solar Mosquito Breeding Preventer is designed to generate air bubbles at regular intervals and effectively produce ripples up to a radius of two meters. The population of mosquito can be controlled or reduced when using this device. It is because it can avoid the mosquito from breeding their eggs and the larva from becoming a mosquito. This device will automatically switch on when it comes in contact with water and alarm alerts if the water body dries up or someone tries to remove the devices from water. The device is believed to be one effective device according to its features. It is a solar powered device which means that it is energy independent and less maintenance.

# CHAPTER 1

## INTRODUCTION

### 1.1 Background of Study

Dengue fever is the fastest growing mosquito-borne disease, affecting over 50 million people each year across the world, and continuing to grow in prevalence and severity. This becomes the greatest threat to human life.

Dengue symptoms range from mild and flu-like to high fever, rash, severe headache, pain behind the eyes, muscle and joint pain. The joint pain can be severe that Dengue has been given the name “breakbone fever”. Nausea, vomiting, and loss of appetite are also common [7]. In the more severe form, sometimes called dengue haemorrhagic fever ( DHF ), blood vessels start to leak and cause bleeding from the nose, mouth, and gums. Without prompt treatment, the blood vessels can collapse, causing shock ( dengue shock syndrome ) and ultimately fatality.

There are around 25000 fatalities each year and severe cases require hospitalisation and constant monitoring. Dengue is an extremely expensive disease, estimated to cost the global economy over US\$5 billion per year.

Dengue fever is an illness caused by infection with a virus transmitted by the Aedes mosquito. There are four serotypes of this virus ( DEN-1, DEN-2, DEN-3 AND DEN-4 ) which can infect humans [6]. There is no drug for dengue. To prevent dengue fever, we need to prevent the breeding of its carrier, the Aedes mosquito. Aedes mosquitoes are identified by the black and white stripes on their bodies.

Referring to the National Environment Agency, there are top five breeding habitats in homes and public area in the year of 2013. For the homes the most place for mosquitos to lay their eggs are domestic containers, flower pot plates, ornamental containers, plants (Hardened Soil and Plant Axils), and gully traps. While for public area are discarded receptacles, closed perimeter drain, plants, HDB corridor scupper, and ground depressions.