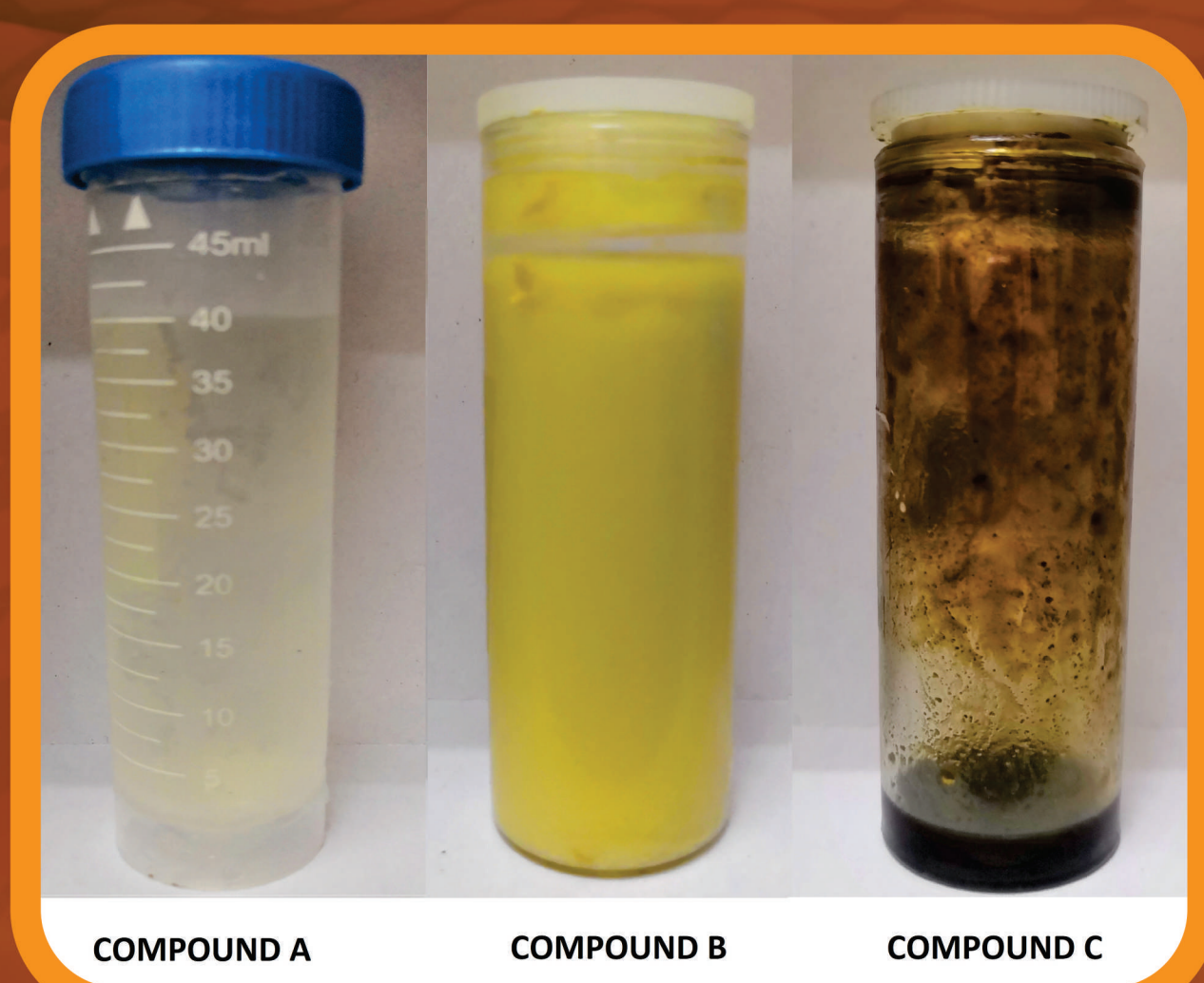




○ **Researchers:**  
**ASSOC. PROF. DR.**  
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**INTELLECTUAL PROPERTY:**  
▶ PATENT APPLICATION IN PROGRESS  
▶ COPYRIGHT (LY2019000216)

# Mozzie OFF Natural Insect Repellent: Water Gel Formulation



## Introduction

- This MozzieOFF insect repellent water gel formulation is formulated using green management technology
- A fusion of this extracts promises of full protection for four hours against the main pest and vector mosquitoes; *Aedes albopictus*, *Aedes aegypti*, *Culex quinquefasciatus* and *Anopheles maculatus*.
- The invented technology will repel the mosquitoes using three different actions by releasing top, middle, and bottom notches at different times.

## Problem Statement

- Pharmaceutical Information Associates Ltd. reports, "Up to 56% of DEET applied topically penetrates intact human skin and 17% is absorbed into the bloodstream."
- Health Canada has now banned products with DEET concentration over 30%

## Inventiveness and Novelty

- The fusion of plant extract and essential oils are formulated at different mixture to produce high repellency towards all mosquito pest and vectors
- Designed on the three-notch release actions:
  - (A) Top Notch – Releasing the first odour of plant extract that can repel *Aedes*, *Anopheles* and *Culex* mosquitoes
  - (B) Middle Notch - Releasing the second odour of plant extract that can repel *Aedes* and *Anopheles* mosquitoes
  - (C) Bottom Notch - Releasing the third odour of plant extract that can repel *Aedes* and *Anopheles* mosquitoes

## Uniqueness

- DEET Free
- Full repellency for 4 hours
- Bio-natural botanical product
- No irritation reaction and toxic free
- Safe for children

## Intellectual Property Status

- Copyright (Application No. LY2019000216)
- Patent Application in Progress. This Invention is Novel, Inventive & Industrial Applicable

## Usefulness and Application

- Easy to apply and user-friendly
- Press the nozzle. Apply the coin size dots on the palm and apply on all exposed skin. Reapply the gel every 3-4 hours for the best results

## Status of Invention

Ready to be commercialized

## Commercial Potential

- This product has a huge market especially in the countries that prone to vector-borne diseases such as dengue, Zika, Chikungunya, JE, Yellow fever and malaria; especially those living in the Asia Pacific.
- It is suitable for people having outdoor activities, school children, parents, hikers, anglers, jogger, people working outside of the office (JPAM, policeman, military, rangers, fisherman, farmers etc.)

## Potential Partners

- Asiatic Agricultural Industries Pte Ltd
- Unit Entomologi & Pest, Jabatan Kesihatan Negeri Sabah

## Knowledge Management ( Grant/Publication/etc)

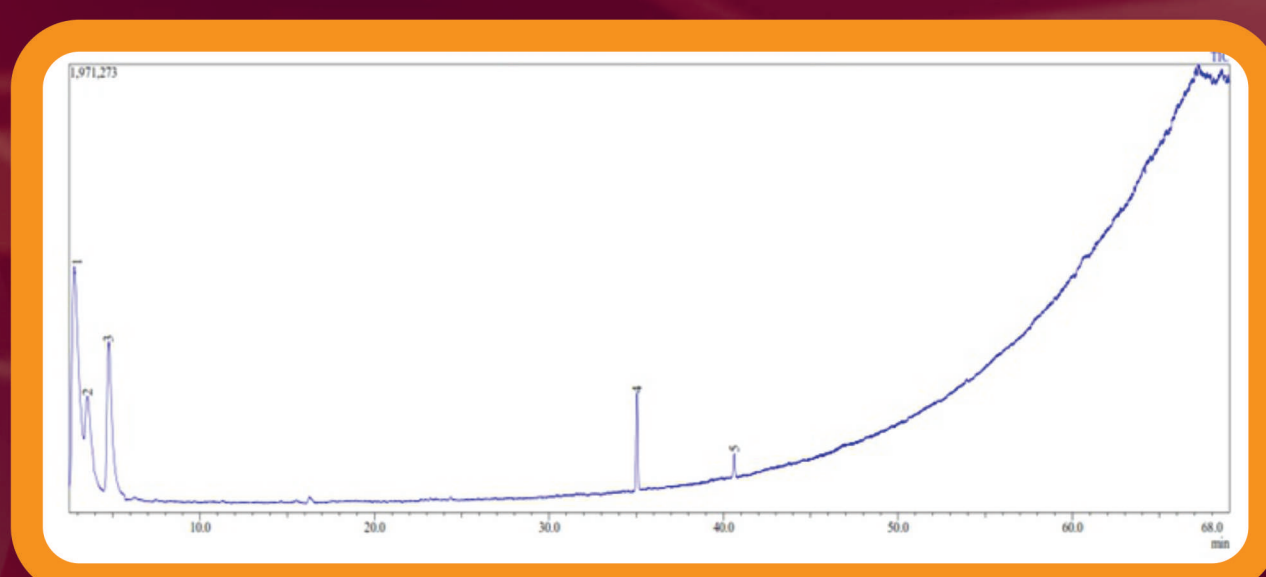
**Funding:** RESEARCH UNIVERSITY GRANT USM 1001/PBIOLOGI/815079 New method in controlling and combating dengue vector mosquitoes.

**Publication:** Tropical Biomedicine and Asian Pacific Journal of Tropical Biomedicine.

**Human resource:** 1 PhD and 5 Bsc.

## Impact of the Product

- Enhance the quality of life by protecting human life by reducing the transmission of vector-borne disease
- Can be benefited by the bottom billion and affordable to own the product



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