



# DEVELOPMENT & EVALUATION OF NATURAL BUG REPELLING SPRAY



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## Abstract

This study presents the formulation and preliminary evaluation of a natural bug repelling spray designed for personal protection against mosquito and insect bites. The spray incorporates essential oils with proven repellent properties and safe excipients for stability. The aim is to provide an effective, eco-friendly, and skin-safe alternative to synthetic repellents.

## Advantages

- 100% natural, chemical-free spray
- Eco friendly & safe for regular use
- Offers 2–3 hours of protection
- Compared to synthetic DEET, give safer & skin friendly alternative

## Reference

WHO.Mosquito-borne disease factsheet Book : Holly.B, (2023).  
Science of Essentials.,32-33  
Luker HA, Salas KR, Holgoun FA, BendzusMendoza, Hansen IA(2023).  
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## Methodology

- Formulation Components
- Essential oils: Citronella, Lemongrass, Lavender, peppermint, eucalyptus
- Emulsifier / Solubilizer: Lecithin
- Humectant: Glycerin
- Base: Distilled water

### Preparation Method:

1. Essential oils were blended with lecithin for dispersion.
2. Glycerin was added as a humectant.
3. The mixture was diluted with distilled water and homogenized.
4. The formulation was transferred to a spray bottle for application

## Photos



## Conclusion

The natural bug repelling spray demonstrates promising potential as a safe and eco-friendly alternative to synthetic repellents. Its use of essential oils makes it suitable for consumers seeking herbal, chemical-free personal care solutions.

## Introduction

Mosquitoes and other insects are responsible for discomfort and transmission of diseases such as malaria, dnegue, and chikungunya. Conventional repellents often contain synthetic chemicals like DEET, which may cause skin irritation. Hence, there is a growing interest in natural, plant-based repellents. Essential oils such as citronella, lemongrass, lavender, peppermint, and tea tree oil are known for their insect-repelling properties. This project focuses on the formulation of a natural bug repelling spray, suitable for topical use.

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