RESEARCH REPORT

Testing efficacy of Devadaru, Lamajjaka, Bhutika, Nimba Oil against different mosquito adult species density in Greater Noida

Overview

- **Title of the Report:**
  Testing Efficacy of Devadaru, Lamajjaka, Bhutika, Nimba Oil, on different adult mosquito species density in Greater Noida.
- **Principal Investigator(s):**
  Dr Anushrita
- **Affiliation:**
  EKO Lifesciences
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Introduction

This study was conducted to evaluate the repellent efficacy of herbal formulation containing Devadaru, Lamajjaka, Bhutika, and Nimba Oil—against different adult mosquito species. The objective was to determine its ability to reduce mosquito landings within a controlled indoor environment during a 60-minute exposure period. Trials were conducted on 08-08-2025 in Greater Noida under controlled laboratory conditions.

Summary

The experiment was conducted in a laboratory testing room (12 × 12 m), where 60 adult mosquitoes representing different adult mosquito species were released for each trial.
Devadaru, Lamajjaka, Bhutika, Nimba Oil, demonstrated strong repellency, with landing counts of **12, 7, and 10** across three replicates, while the control group using only water recorded **38 landings**. This confirmed active mosquito behavior in the absence of repellent.
Environmental parameters—humidity (42% average) and temperature (30.3°C average)—were maintained within stable ranges, ensuring consistent mosquito responsiveness during trials.

Materials Used:

- Mosquito Repellent spray.
- Negative Control (no repellent)
- Female mosquitoes (3–5 days old, sugar-fed, starved 12 hrs)
- Human volunteers
- Cotton fabric (if testing on fabric)
- Timer/stopwatch
- Aspirators
- Lab PPE (gloves, mask)
- Thermo-hygrometer

Procedure: Room Spray

Step 1: Mosquito Preparation

- 60 healthy female mosquitoes were selected per trial.
- They were acclimatized for 30 minutes prior to exposure.

Step 2: Application inside room

- No other repellents or sprays were used in the test room prior to trials.
- Devadaru, Lamajjaka, Bhutika, Nimba Oil spray was applied as per label instructions to a designated area.

Step 3: Observations

The following parameters were observed and recorded:

- Number of landings
- Number of probing attempts

Results:

Trial No,	Total Mosquitoes	Exposure Time (min)	Landing Catch	Temperature	Relative Humidity
1	60	60	12	32.3	64
2	60	60	7	29.9	49
3	60	60	10	28	45
(Control)	60	60	38	31	66

Analysis

The trials using Devadaru, Lamajjaka, Bhutika, Nimba Oil showed a marked reduction in mosquito landings compared to the control.

- **Average landing catch (Devadaru, Lamajjaka, Bhutika, Nimba Oil):** 9.67
- **Average landing catch (Control):** 38
- **Average repellency rate:** 74.55%

The control group exhibited high mosquito activity, validating the exposure setup. The reduction in landings with Devadaru, Lamajjaka, Bhutika, Nimba Oil, confirms its function as a behavioral deterrent rather than a lethal agent.

Conclusion

Devadaru, Lamajjaka, Bhutika, Nimba Oil, proved to be an effective mosquito repellent against different adult mosquito species, reducing landings by more than two-thirds over a 60-minute exposure period. While no mortality was observed, its non-contact repellency makes it suitable for short-term indoor protection.

Recommendations

- Increase exposure duration in follow-up studies to assess long-term repellency.
- Conduct comparative studies with chemical repellents and other herbal products.
- Evaluate product effectiveness across multiple mosquito species and climatic conditions.
- Perform field trials to validate indoor and outdoor efficacy in real-use settings.
- Consider formulation improvements to enhance protection duration and user

convenience.

Submitted By:
Sourav Singh

Submitted To:
Dr. Anushrita