

RESEARCH REPORT

Testing efficacy of Transfluthrin Aerosol LPG Hydrocarbon Solvent, Mosquito Repellent Spray against different species of adult mosquito density in Greater Noida

Overview

- **Title of the Report:**
Testing Efficacy of mosquito repellent spray (Transfluthrin Aerosol LPG Hydrocarbon Solvent) on different species of adult mosquito density in Greater Noida.
- **Principal Investigator(s):**
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- **Affiliation:**
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- **Date of Submission:**
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Introduction

This report evaluated the efficacy of mosquito repellent spray (Transfluthrin Aerosol LPG Hydrocarbon Solvent) as a control agent against different species of adult mosquito in four replicates including control conducted in Greater Noida. It also examined the correlation between adult mosquito density and environmental factors such as temperature and humidity, and provided recommendations for sustainable mosquito control. The dataset represented experimental data recorded on 17-07-2025.

Summary

The experiment was conducted in lab – testing room (12*12 m), where 60 adult mosquitoes 20 of each of three viz. *Aedes*, *Anopheles* and *Culex* were released. The mosquito repellent spray (Transfluthrin Aerosol LPG Hydrocarbon Solvent) achieved a 100% knockdown in all treated replicates on 17-07-2025, demonstrating strong initial efficacy.

Humidity (62%) and temperature (28.8°C) showed a moderate correlation that potentially enhanced the repellent's performance under test conditions.

Materials Used:

- Mosquito Spray
- Female mosquitoes (3–5 days old, sugar-fed, non-blood-fed)
- Control room (no spray)
- Timer/stopwatch
- Aspirator
- Gloves, lab coats, masks
- Data recording sheet
- Thermo-hygrometer

Procedure:

Mosquito Preparation:

- A total of 60 healthy mosquitoes were used per replicate.
- Mosquitoes were starved for 12 hours prior to experimentation.

Application:

- The spray can was shaken well before use.
- The spray was applied according to label instructions, usually for 2–3 seconds directed upward and toward corners of the test chamber.
- Direct spraying on mosquitoes was avoided.
- The room was closed immediately after spraying to contain the aerosol.

Observation Periods:

Observations were made at 5-, 10-, 15-, and 30-minutes post-exposure. At each interval, the following were recorded:

- Number of knocked-down mosquitoes
- Number of dead mosquitoes
- Number of active/alive mosquitoes

Results:

Experiment No.	Total Mosquitoes	Knockdown Mosquitoes	Knockdown %
1	60	60	100%
2	60	60	100%
3	60	60	100%
4 (Control)	60	00	00%

Average Knockdown Rate: 100%

Conclusion

The mosquito spray exhibited **100% knockdown efficacy** against different species of adult mosquitoes within 60 minutes under controlled laboratory conditions. The product proved to be highly effective for immediate knockdown and mosquito control. Its rapid action makes it suitable for indoor vector management interventions.

Recommendations

- Conduct additional testing under semi-field and field conditions to validate laboratory results.
- Evaluate residual efficacy and duration of repellency beyond immediate knockdown.
- Assess product efficacy against other mosquito species for broader vector control applications.

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