RESEARCH REPORT

Testing efficacy of Incense stick (Bhutika, Tallaparna, Rohisha and Nimba Oil) against different species of mosquito adult density in Greater Noida

Overview

- **Title of the Report:**
  Testing Efficacy of Incense stick (Bhutika, Tallaparna, Rohisha and Nimba Oi) on different species of mosquito adult density in Greater Noida.
- **Principal Investigator(s):**
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Introduction

The present study was conducted to evaluate the repellency and efficacy of incense sticks, formulated with Bhutika, Tallaparna, Rohisha, and Nimba Oil, against different species of mosquito adults. Experiments were carried out under controlled indoor laboratory conditions in Greater Noida to assess mosquito landing behavior at varying incense stick concentrations compared to an untreated control. Observations were made after a fixed exposure period of 60 minutes.

Summary

The experiment was performed in a laboratory testing room (12 × 12 m), where 60 adult mosquitoes from different species were released per trial. The incense sticks demonstrated a significant reduction in mosquito landings compared to the control. Landing catch counts in treated setups were notably lower than in the untreated control, indicating strong repellent properties.

Material used:

- Test repellent incense sticks.
- Control incense stick (non-repellent/plain)
- Female mosquitoes (3–5 days old, non-blood-fed)
- Timer/stopwatch
- Test room with minimal air flow
- Thermo-hygrometer (for recording temperature and humidity)
- Aspirators
- Mosquito release cups
- Matchstick/lighter

Methodology:

Incense Stick Placement:

- The incense stick was lit and placed in a holder at a designated location in the test room.
- It was allowed to burn continuously for the duration of the trial.

Observation:

- 60 female mosquitoes from different species were released per replicate.
- Landing catches were recorded after 60 minutes of exposure.
- Environmental conditions (temperature and humidity) were monitored to ensure consistency across trials.

Results:

Experiment No	Incense Sticks Count	Total Mosquitoes	Exposure Time (min)	Landing Catch	Temperature	Relative Humidity
1	6	60	60	17	31	69
2	6	60	60	25	30.4	72
3	6	60	60	13	30	69
4 (Control)	0	60	60	29	30.8	68

Analysis

- All treated trials with 6 incense sticks showed lower mosquito landing counts (13–25) compared to the control (29).
- The lowest landing catch (13) was observed in Experiment 3, while the highest among treated trials was 25 (Experiment 2).
- Environmental conditions were consistent across trials, with temperatures between 30.0°C and 31.0°C and humidity between 68–72%.
- The results confirm that Incense sticks significantly reduced landings of different mosquito species under laboratory conditions.

Conclusion

Incense sticks, formulated with Bhutika, Tallaparna, Rohisha, and Nimba Oil, demonstrated effective repellency against different species of adult mosquitoes. The product achieved notable landing catch reductions compared to the untreated control. The findings support the potential of Incense sticks as a natural mosquito repellent suitable for indoor use.

Recommendations

- Conduct additional trials using different stick counts (e.g., 3, 4, 5) to identify the optimal dose.
- Extend exposure durations to assess long-term repellency.
- Perform outdoor and field trials to validate results under real-life conditions.
- Benchmark against leading herbal and chemical repellents for competitive positioning.

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