

**RESCON 2025 LS 76**

**EVALUATING *Aedes* BITING PATTERN FOR TARGETED SPACE SPRAYING:  
A CASE STUDY FROM DENGUE HIGH RISK AREA, SRI LANKA**

**M.D.S. Janaki<sup>1\*</sup>, A.P.S. Perera<sup>2</sup>, S.N. Weerakoon<sup>3</sup>, B.L. Hewagamage<sup>1</sup>,  
G.A.T.A. Rajathilake<sup>1</sup>, P.C. Samaraweera<sup>1</sup> and S. Samaraweera<sup>1</sup>**

<sup>1</sup>National Dengue Control Unit, Colombo, Sri Lanka.

<sup>2</sup>Office of the Regional Director of Health Services, Matara, Sri Lanka.

<sup>3</sup>Office of the Regional Director of Health Services, Badulla, Sri Lanka.

\*sakoo\_j@yahoo.co.uk

*Aedes aegypti* and *Aedes albopictus* are two mosquito species that are recognised for their involvement in the transmission of diseases such as dengue and chikungunya. Due to the lack of specific drugs or vaccines for these diseases, vector control is essential. Therefore, identification of the peak biting periods for *Aedes* mosquitoes is vital for the prevention of diseases and the effective control of vectors. Targeted interventions, such as the timing of insecticide application and public health messaging, can then be implemented to mitigate human exposure to mosquito bites and the transmission of diseases. This study investigated *Aedes* mosquito biting patterns over a 24-hour period, monthly from May 2024 to April 2025, in Gothatuwa MOH area, Colombo district, using human-baited double net traps (HDN). Mosquito collections were conducted hourly. A total of 372 *Aedes* mosquitoes were collected during the study. *Aedes albopictus* was the predominant species (361, 97%) in the total collection, with 86% (316) females. In contrast, *Aedes aegypti* comprised a smaller proportion, with 11 (3%) mosquitoes, of which 9 (82%) were females. These findings confirm *Aedes albopictus* as the most prominent vector species in the study area. Further, it was observed that female *Aedes* mosquitoes preferably bite between 06:00 – 09:00 hours in the morning and 16:00 – 18:00 hours in the evening. It was found that biting activity during each hour within these periods was statistically significant ( $p < 0.05$ ). Although, some increased biting activities of these *Aedes* mosquitoes could be observed during 03:00 – 06:00 hours, 10:00 hours, 16:00 hour and 18:00 – 19:00 hours, they were not statistically significant ( $p > 0.05$ ). Our findings highlight that the preferred time intervals for conducting space spraying for *Aedes* vector control are 06:00 to 09:00 hours and late 16:00 to 18:00 hours.

**Keywords:** *Aedes* vector, Chikungunya, Dengue, Human baited double net trap (HDN), Peak biting time