Title : Urban Mosquito Diversity and Potential Disease Risk in Chiang Mai Tourist Areas in 2025

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ABSTRACT

Urban tourist areas can provide favorable environments for mosquito breeding and may increase the risk of mosquito-borne diseases. This study investigated urban mosquito diversity and potential disease risk in major tourist areas of Chiang Mai City, Thailand, during 2025. Mosquito surveys were conducted at 5 tourist sites: Baan Kang Wat (S1), One Nimman (S2), Nimman Road (S3), Open-Air Market (S4), and Wat Ket Karam (S5), during March and October 2025. Larval and adult mosquito data were collected, and larval indices (Container Index, CI) were used to assess dengue transmission risk. Species composition analysis based on both larval collections and adult collections identified a total of seven mosquito species across the study sites. including *Aedes aegypti*, *Aedes albopictus*, *Culex quinquefasciatus*, *Culex vishnui*, *Culex gelidus*, *Armigeres subalbatus,* and *Toxorhynchites.* The CI results showed that all five study sites had CI values exceeding 5%, indicating a potential risk for dengue transmission. Open-air Market, Baan Kang Wat, and One Nimman exhibited the highest CI values, likely due to their nature as open public and market areas with limited sanitation and water container management. In contrast, Wat Ket Karam and Nimman Road, where regular cleaning and environmental management were observed, showed comparatively lower mosquito indices. The dominance of *Ae. aegypti* and consistently high CI values emphasize

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the need for enhanced source reduction, environmental management, and targeted vector control, particularly in highly visited tourist and market areas, to reduce future mosquito-borne disease risks in Chiang Mai City.

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