

Assessment of urban mosquito diversity in tourist hotspots, Chiang Mai

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Introduction

Mosquitoes are nominated as the deadliest animals in the world due to their transmission of vector-borne diseases. Increasing tourism and climate change expand the transmission cycle, becoming an international concern. Surveillance of mosquito diversity is essential for disease control since different mosquito species can transmit several diseases. This research aims to investigate urban mosquito diversity in Chiang Mai city and an influence of urbanization on mosquito ecosystem.

Methodology

- 5 study sites with 3 rotation points each.
- 6 days operation from April 2024 to October 2024.
- BG trap and BG lure were used for mosquito collection.
- Collected mosquitoes were stored in fridge for 15 minutes then separated into species and gender.
- Mosquito identification with microscope by morphology based on "Illustrated keys to the mosquitoes of Thailand" textbook.



Results & Discussion

- A total of 6 mosquito species were identified in Chiang Mai city (i.e., *Aedes aegypti*, *Armigeres subalbatus*, *Culex gelidus*, *Cx. quinquefasciatus*, *Cx. vishnui*, and *Toxorhynchites* mosquitoes).
- Population of *Ae. aegypti* peaks during the rainy season.
- Urban mosquito population increases with building area; however, it decreases with road area significantly.

Population of *Aedes aegypti*

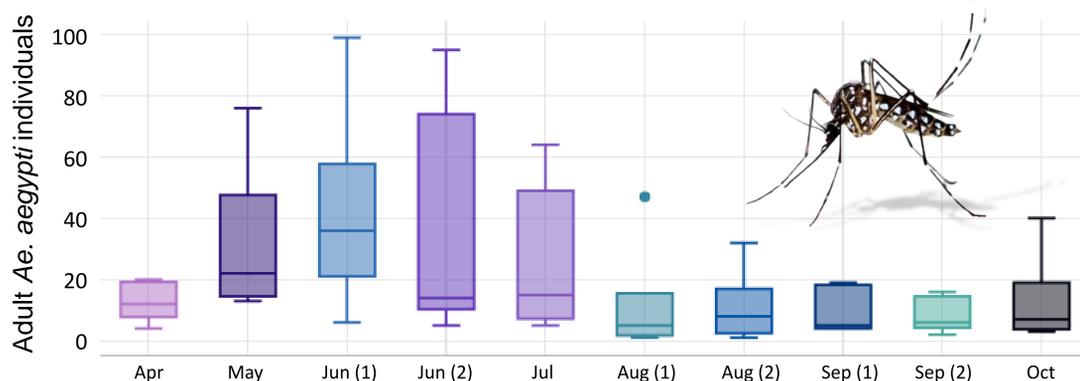


Figure 1. Sampled adult *Aedes aegypti* in five study sites from April to October 2024

Table 1. Spearman's rank correlation analysis

	Spearman correlation	Green area	Building area	Road area
Overall mosquito population	Correlation coefficient (r)	-0.202	0.596	-0.593
	p value	0.159	<0.0001	<0.0001

- N = 50 (10 datasets per study site * 5 study sites)
- Values in bold are different from 0 with a significance level $\alpha=0.05$

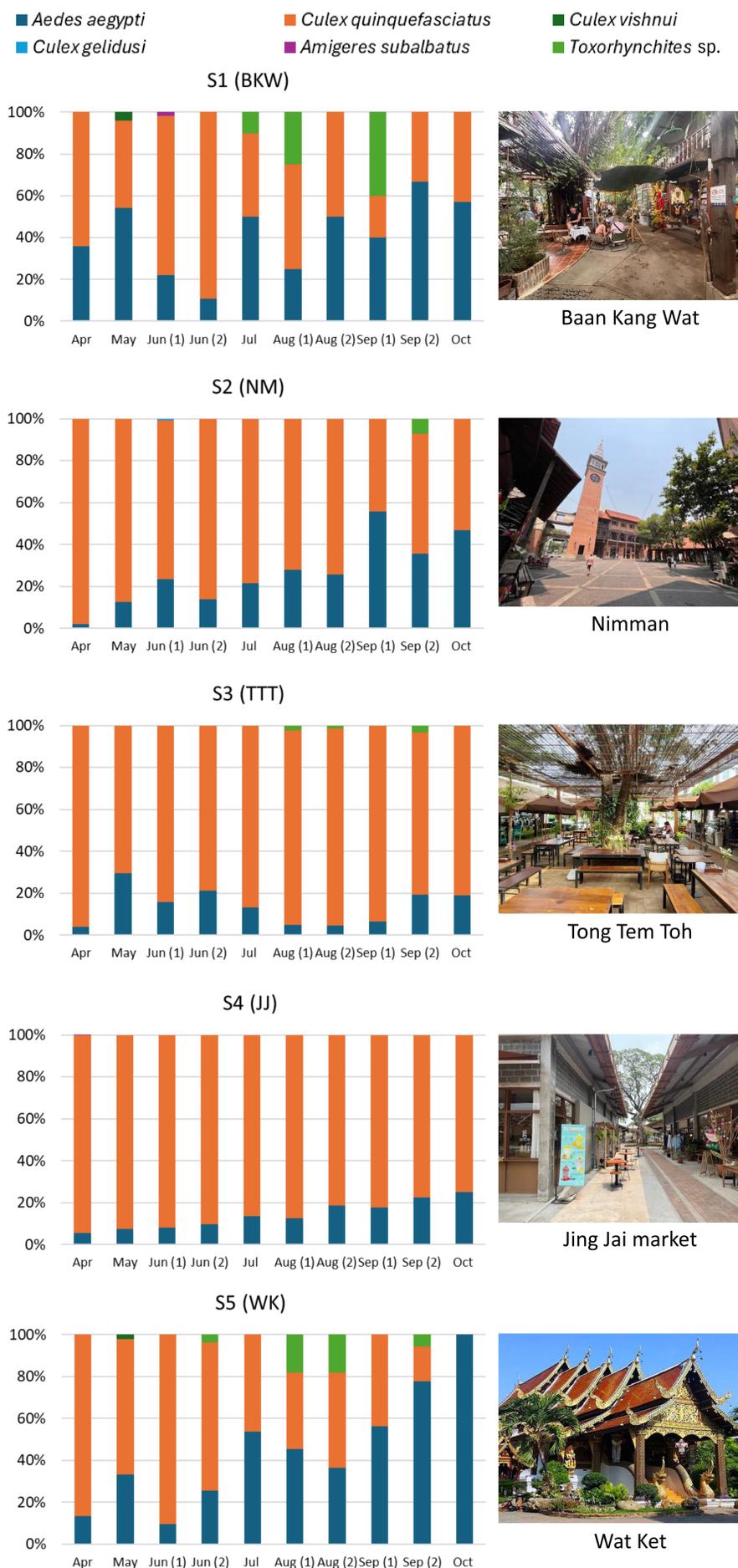


Figure 2. Mosquito diversity in five study sites in Chiang Mai, Thailand from April 2024 to October 2024.

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References

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