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Community surveillance of *Aedes albopictus* associated with *Wolbachia* detection in low-rise residential areas in Selangor, Malaysia

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Abstract

The study assessed the distribution of Malaysian *Ae. albopictus* adults associated with *Wolbachia* detection in low-rise residential areas using a modified sticky ovitrap (MSO). The relationship between *Ae. albopictus* and climatological parameters were also determined. Fifty-two weeks of surveillance using 273 MSOs were conducted in four installation areas of eleven sampling sites. Specimens were subjected to PCR using *wsp*-specific primers for *Wolbachia* detection. The relationship between climatological parameters and *Ae. albopictus* captured were analyzed using Spearman rank correlation coefficient test. The majority of *Ae. albopictus* were captured in residential houses (87%), followed by playgrounds or parks (11.5%), guardhouses (1%), and community halls (0.5%). Most of the specimens (92%) were superinfected with *w*AlbA and *w*AlbB strains. A positive correlation with no significant association was found for rainfall (r = 0.015, P = 0.072), relative humidity (r = 0.005, P = 0.526), minimum temperature (r = 0.005, P = 0.516), and mean temperature (r = 0.003, P = 0.689). MSO effectively captured a high number of *Ae. albopictus* that was determined to be the predominant mosquito species found in low-rise residential areas. The adult collection is not only influenced by climatological parameters but also by other factors, including environmental conditions and general sanitation status.

Keywords: Aedes albopictus; Wolbachia; climatological parameters; modified sticky ovitrap.