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Dengue vector abundance and probable breeding habitats among selected school premises in the District of Gampaha, Sri Lanka

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The Gampaha District has reported the second highest incidence of dengue during the last decade. Studies in Western province highlighted the presence of a high number of dengue vector breeding habitats in school premises. However, documented studies on the entomological risk in school premises are limited. Therefore, the objective of the present study was to investigate the abundance of dengue vector and their probable breeding habitats within school premises. A cross sectional study was conducted in 60 randomly selected schools in four educational zones namely Gampaha, Minuwangoda, Kelaniya and Negombo, comprising 15 schools from each zone. Entomological surveys were conducted at each selected school for seven months (June-December, 2016) using stranded dipping and siphoning methods depending on the nature of the breeding habitat. Identified breeding habitats were recorded and categorized into major habitat types. The data were recorded as I & II, III & IV instar and pupae. Larval stages of III & IV instar were directly identified, while I & II instars were reared up to III instar at confined cages supplemented with larval feeding and identified to the species level. Pupal stages were also reared separately in adult rearing cages and the species identity was confirmed through adult morphology. Morphological identifications confirm *Ae. albopictus* as the most predominant vector species in school premises (92.86%; n=26) belonging to all four educational zones, and *Ae. aegypti* was identified only from 2 schools (7.14%; n=02) in the Negombo educational zone. A total of 12 mosquito breeding site categories were identified at school premises namely leaf axils, tree holes, decaying materials, coconut shells, plastic containers, clay containers, metal containers, flower pots, tyres, tyre prints, drains, blocked toilets. Almost all schools had an average of 10 types of probable breeding habitats. The majority of containers were dry (81.51%; n=7,156) and some were wet containers. Out of 1623 wet containers, 41 infected larval containers were found from 28 school premises of which 12 are natural (29.26%) and 29 are artificial (70.73%).Prolific breeding of *Ae. albopictus* was observed in clay pots.Since the majority of breeding habitats were of anthropogenic origin, it is very important to introduce and practice "reduce, reuse, and recycle" for solid wastes (3R concept). Dengue prevention committees should be established in the schools for close supervision.

Keywords: Dengue vector, breeding habitats, School premises.

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