

## Assessment of the distribution of *Aedes* breeding sites at the households of district of Gampaha

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Dengue is the most important mosquito-borne viral infection in Sri Lanka at present. Integrated Vector Management (IVM) targeting dengue vector mosquitoes has become the main disease control measure. The objective of this study was to assess the distribution of the *Aedes* breeding habitats in dengue high and low risk areas in the District of Gampaha where the second highest incidence of dengue reported during last 10 years. Negombo Medical Officer of Health (MOH) area was selected based high incidence of dengue cases reported in the District of Gampaha during last 10 years. A dengue high risk (Kurana East) and low risk (Udayarthoppuwa) Grama Niladhari (GN) divisions with similar geographical situation in the same MOH area were selected as study and control areas respectively. Standard larval surveillance was conducted randomly selected 150 houses in each site for 18 months (April, 2018-October, 2019). In the dengue high risk and low risk areas, the proportions of the larvae of *Aedes* species to the total larval collection were 34.19% (185/541) and 21.68% (147/678) respectively. High densities of *Ae. albopictus* larvae were reported in both high [171/185=92.4%] and low [141/147=95.92%] risk areas. *Ae. aegypti* was present in low abundance in both areas [High risk-7.56% (14/185) and Low risk- 2.72% (4/147)]. In the high-risk site, breeding sites of the *Ae. albopictus* larvae were reported as plastic buckets/barrels (55.19 %-154/279), waste plastics (35.15%-98/279), metal tins (3.94%-11/279) and tube wells (2.86%-8/279). In low-risk area, the majority of breeding sites for *Ae. albopictus* larvae was found in coconut shells (76.14%-201/264) and plastic waste (21.96%-51/264). In both areas, *Ae. aegypti* larvae was found in plastic buckets/barrels only. There is a significance difference between the *Ae. albopictus* breeding places in the dengue high and low risk areas (P=0.024). Although *Ae. aegypti* is considered as the major vector of dengue, *Ae. albopictus* was reported as the prominent dengue vector species in the high dengue risk area in the District of Gampaha. Even though, municipal council removes solid waste weekly, a large number of breeding sites are available at both areas. As there is a significant difference between *Ae. albopictus* breeding sites at the dengue high and low risk areas, it is essential to specifically focus on removal of breeding sites for successful vector control measure.

**Key words:** Breeding sites, *Aedes*, vector, Larvae, Larval surveillance

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