

**DENGUE VECTOR CONTROL PROGRAMS IN AREAS SUITABLE FOR PROMOTING ECOTOURISM IN THREE DIVISIONAL SECRETARIAT DIVISIONS OF TRINCOMALEE DISTRICT, SRI LANKA**

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The Trincomalee District is a famous tourist destination; however, in the past few years, it has been heavily affected by dengue. We assessed the effectiveness of dengue vector control programs (*i.e.* thermal fogging and source reduction) in three Divisional Secretariat Divisions (DSDs): Trincomalee Town and Gravets, Mutur and Kinniya. Despite recording high dengue incidences in DSDs, they are suitable areas for promoting ecotourism. A monthly larval survey was conducted from June 2020 to March 2021 in 21 Grama Niladari (GN) areas; the Premise Index (PI) and Container Index (CI) were calculated. A questionnaire assessed the knowledge, practices and attitudes (KPAs) of the community towards dengue control. Reported dengue cases per 1,000 population were analyzed for 2019 and 2020 and correlated with the meteorological data. Overall, 3,085 premises were visited, and 8,835 potential containers (3,865 wet, 4,970 dry) were recorded. Of wet containers, 8.9% were vector-positive (67.2% with *Aedes aegypti* and 32.7% with *Aedes albopictus*). The overall PI (7.9%) and CI (8.9%) values were moderate in the study areas. Five GN areas with PI > 12.8% were identified as high-risk to recommend the application of larvicides to potential breeding sites. Household water-storing items were the main wet container type (36.2%), while discarded containers were the main dry container type (50.8%), contributing to larval indices. The majority in the community has identified dengue as a serious health problem (81.0%) in the area and was also aware of the risk of infection (92.0%). However, only 50.0% knew about dengue-controlling activities in the district, and 69.0% of respondents claimed they did not participate in any community-based dengue control programs. There was no correlation between dengue cases and temperature, while a strong positive correlation was observed with rainfall for 2019 ( $p=0.001$ ) but not in 2020. The community stated the direct and/or indirect benefits of tourism (65.0%) and culturally appropriateness (73.0%), but only 18.0% had heard the term 'ecotourism'. Increased community awareness on dengue control, regular tap water supply or providing covered overhead tanks, and increased attentiveness on ecotourism are recommended.

**Keywords:** Dengue, Ecotourism, Trincomalee, Vector breeding