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Trends in densities of *Anopheles culicifacies* (Giles) and other potential malaria vector mosquitoes in the district of Trincomalee

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Entomological data is important for planning vector control strategies in an area. A proper entomological survey on the abundance of malaria vector *Anopheles* mosquitoes has not been done in the Trincomalee district over the past 30 years due to the security situation that prevailed in the area. The aim of this study was to determine the distribution of major and other potential malaria vectors in the district of Trincomalee.

Entomological field surveys were carried out over a two year period from June 2010 to May 2012 in five selected sentinel sites of the district namely, Gomarankadawala, Ichchallampaththu, Mollipothana, Thoppur and Padavisiripura; within a radius of about 20 km from each sentinel site. Factors such as past malaria history, environmental conditions, availability of breeding sites, an established agricultural community and feasibility of field operations to collect relevant data were considered in selecting the study areas. Vector mosquitoes were collected by WHO approved techniques; Hand Collection (HC), Window Trap Collection (WTC), Cattle- Baited Trap Collection (CBTC), Cattle- Baited Hut Collection (CBHC) and Larval Survey (LS). All mosquitoes were identified using standard taxonomic keys.

Overall, a total of 84,079 mosquitoes comprising 17 anopheline species were identified, with *An. subpictus* (Grassi) complex predominating during the study period (24.7%, n = 20,803). There was an increase in the densities of *An. culicifacies* from 2010 - 2011 to 2011 - 2012 (Year 1- 0.16%, n = 59, Year 2- 2.1%, n = 985). *An. culicifacies* was highest in the month of December in both years. Further, June and October months were also high for *An. culicifacies* in the second year. The densities of other potential vectors such as *An. annularis* (van der Wulp), *An. pallidus* (Theobald), *An. subpictus* (Grassi), and *An. varuna* (Iyengar) increased in the second year. The increase in vector densities of the major and potential malaria vectors in these areas increase the vulnerability of communities resident in the Trincomalee district to malaria, despite the very low malaria incidence rates reported at present.

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