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Indoor resting density of vector mosquitoes (Diptera: Culicidae) in selected sites in Galle district of Southern Sri Lanka

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Mosquitoes (Diptera: Culicidae) are the most important insect vectors of human diseases. The Galle district of Southern province in Sri Lanka is a high-risk area for mosquito vector-borne diseases. Since the past literature on the diversity of mosquito fauna in Galle District still remains much scattered, it is vital to update the knowledge on the diversity of vector mosquitoes in the area. Hence, the study aimed to estimate the density of indoor resting vector mosquitoes in selected sites in Galle District. The survey was carried out in eight (8) selected sites (urban, rural, coastal, natural inland, coastal inland mixed, rocky, mangrove and forest) from January 2017 to January 2020. Twenty-five (25) randomly selected houses in each site were sampled using the hand collection method once a month. Samples were collected from indoor and open areas within each house using standard mouth aspirators during the daytime (6.00 a.m. -12.00 a.m.) on each sampling day, while 10 min. were spent in one house. The density of mosquito species was calculated using Banaszak and Winiewski density index. Among the recorded densities of seven species (7) in five genera (5), *Culex quinquefasciatus* (36.06%), *Culex gelidus* (11.68%), *Aedes albopictus* (29.98%), *Aedes aegypti* (5.35%) and *Anophelese jamesii* (10.82%) belong to the 'dominant' density category, and *Armigerus subalbatus* (4.83%) and *Mansonia uniformis* (1.28%) belong to the 'subdominant'category of density index. Of the total collected 2338 adults, 48% of genus *Culex*, 35% of *Aedes*, 11% of *Anophelese,* 5% of *Armigerus* and 1% of *Mansonia* were represented. *Ae. albopictus* was dominant in urban and natural inland sites, and *Cx. quinquefasciatus* was dominant in rural, coastal inland mixed, coastal, rocky, mangrove and forest sites. *Ae. albopictus*, *Cx. quinquefasciatus*, *Cx. gelidus* and *Ar. subalbatus* were recorded from all sites. *Ae. aegypti* was reported only from urban, coastal and coastal inland mixed sites. *An. jamesii* and *M. uniformis* were recorded only from urban and mangrove sites respectively. The revealed information on indoor resting mosquito species is vital for the implementation of effective vector control programs in the district.

Keywords: Indoor resting density, hand-collection, vector mosquitoes

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