105/A

Monitoring the prevalence of Aedes aegypti (L) and Aedes albopictus (Skuse) in Colombo city using BioGent-Sentinel traps and ovitraps

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Monitoring density of vector populations is crucial in controlling dengue since it serves as a proxy indicator of the risk of dengue transmission. Number of dengue vectors, Aedes aegypti and Ae.albopictus can fluctuate over time in response to environmental conditions. Adult traps and ovitraps are potential tools which can supplement the existing methods for monitoring dengue vector populations.

Adult Aedes populations were monitored in Narahenpita, Thimbirigasyaya and Kirula Public Health Inspector (PHI) areas in Colombo Municipal Council Area from October 2015 to May 2016 using BioGent–Sentinel (BG-S) traps (Biogents AG, Germany) with BG-sweetscent™ attractant which consists of substances found in human skin. These were set up inside 8 -10 houses. Collections made every week were identified under stereo microscopy based on their morphology. Ovitraps were placed outdoors (n=49-60), but within close proximity to the houses (<2m) in the same study area during the above period and monitored weekly. The eggs were transported to the laboratory and larvae were identified when hatched. The percentage of positive traps was calculated for both types of traps. The mean number of adults and eggs of Ae.aegypti and Ae. albopictus per trap were calculated for BG-S traps and ovitraps, respectively.

The results obtained from BG-S traps and ovitraps indicated that Ae. aegypti is the predominant species in the study area with a low presence of Ae. albopictus. The mean % of positive BG-S traps for Ae.aegypti and Ae. albopictus were 43.18 ± 15.64 SDV and 5.31± 8.29 SDV, respectively. The mean number of adults (males and females) per trap for BG-S was 1.03 ± 0.61 SDV for Ae. aegypti and 0.11 ± 0.19 SDV for Ae. albopictus. For ovitraps the mean % of positive traps for Ae. aegyptiand Ae. albopictus were 7.96 ± 3.78 SDV and , 2.93 ± 2.71 SDV, respectively. The mean number of eggs of Ae. aegypti per ovitrap was 4.97 ± 3.17 SDV and for Ae. albopictus 1.67± 1.78 SDV. The results indicated that Ae. aegypti is the predominant vector in PHI areas studied in Colombo Municipal Council and both BG-S and ovitraps can be used as vector surveillance methods for dengue in highly urbanized areas.

Keywords: Ovitraps, BioGent- Sentinel traps, Ae. aegypti, Ae. albopictus

Acknowledgement: Financial assistance by International Atomic Energy Agency (IAEA RAS 5066) and National Research Council (NRC TO 14/04)

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