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Effect of colours of Light-Emitting Diodes (LED) in trapping of phlebotomine sandflies in Sri Lanka: A preliminary study

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Insects become attracted to different colours of light. Light traps are popular and used as an easy method for collection of phlebotomine sandflies, vectors of leishmaniasis. This study investigated the effect of different colours of light in attracting the sandflies using the Center for Disease Control and Prevention (CDC) light traps equipped with LEDs of different colours. The study was carried out in selected locations in Anuradhapura, Kurunegala, Matara, Hambanthota, Polonnaruwa and Gampaha districts of Sri Lanka, from December 2018 - July 2019. Phlebotomine sandflies were collected using CDC light traps (Bioquip, USA) fitted with ultraviolet (UV) (390nm), red (660nm), blue (430nm), green (570nm) and yellow (590nm) LED panels. Traps were placed in close proximity to possible sandfly breeding and resting sites. Collections were done in a single night from 6 p.m. to 6 a.m. per location. A total of 412 sandflies [male = 178 (43%) and female = 234 (57%)] were collected from 36 locations. The highest number of flies were collected using UV LED light traps [n=120 (29%)] followed by yellow [n=96 (23%)], blue [n=91 (22%)], red [n=74 (18%)] and green [n=31 (8%)] respectively. Through morphological identification, n=300 (73%) were identified as *Phlebotomus argentipes* (male = 149 (36%) and female = 151 (37%) and n=112 (27%) as *Sergentomyia spp.* [male = 30 (7%) and female = 82 (20%)]. The findings suggest that the CDC light traps equipped with UV LED are more efficient in attracting sandfly species in Sri Lanka while traps with green LED were least effective.

Keywords: *CDC light trap, Sandfly, Sri Lanka*

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