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Abstract

Leishmaniasis is a global health problem, affecting over 1 billion people worldwide. Brazilian government has adopted vector control as one strategy to control leishmaniasis. The main goal was to study sand fly fauna in region of implementation of dog collars impregnated with deltamethrin in Timon, Maranhão, Brazil. Two areas were selected in Timon: control and treatment, where dogs were fitted with collars impregnated with deltamethrin. In each area, 10 households were selected to capture sandflies in peridomestic and intradomestic environments. Twenty-five months of captures were carried out, starting in August 2021. A total of 13,347 sandflies were captured (11,092 males and 2,255 females) from species *Lutzomyia longipalpis*; *Nyssomyia whitmani*; *Evandromyia lenti*; *Evandromyia evandroi*; and *Brumptomyia brumpti*; with *Lutzomyia longipalpis* being the most frequent (n=12,748). Control area had a higher number of insects (n=7,109), males (n=5,881), in the peridomestic environment (n=6,017), and at point 1 (n=1,367). In treatment area, more males (n=5,211) and more sandflies in peridomestic environment (n=5,187), and at point 13 (n=1,270) were captured. In November 2022 was captured the highest number of insects in control (n=901) and treatment areas (n=1,460). The study presented a sand fly fauna composed of five species, with a predominance of *Lutzomyia longipalpis*. In both areas, there was a higher frequency of males in the peridomestic environment, and in November 2022. More insects were captured in control area.

Keywords: Insect vector surveillance, Phlebotomine sandflies, vector ecology, Deltamethrin efficacy