

Abstract

Sand flies are small haematophagous insects that transmit *Leishmania* parasites. Infection with *Leishmania* parasites results in diseases known as leishmaniases which can be grouped into three main forms: cutaneous, mucocutaneous and visceral leishmaniases. The CDC light trap is the standard surveillance technique used to determine sand fly densities in a given locality, although this technique has been hampered by several logistic issues. Therefore, this study sought to use host blood, urine and ripe fruits as baits in a modified trap to come up with a cheap device for sand fly surveillance. This study also aimed at identifying the sand fly species attracted to this new device. Defibrinated blood from cattle, goat, sheep and chicken; urine from cattle, sheep and goat and fruits: grapes, mangoes, bananas and apples were placed inside each trap to act as sand fly attractants. A total of 1302 sand flies were collected within 3 trapping nights. Blood baited trap yielded more sand flies (202.33 ± 2.85) while chicken baited trap trapped the least (65.00 ± 1.53). Among the fruit baited traps, bananas attracted the highest number of sand flies (94.33 ± 4.63) followed by mango baited trap which caught (89.67 ± 2.33) although the difference between these two was not significant ($P=0.682$). 64.3% of the collected sand flies belonged to the genus *Sergentomyia* and 35.7% to *Phlebotomus*. The collected sand flies belonged to 7 species with *P. martini* (35.7%), *S. schwetzi* (34.1%) and *S. antennata* (15.7%) being the dominant species. Volatiles from plant and animal hosts may be used instead of light or carbon dioxide to improve the efficiency of traps for haematophagous insects. These volatiles can also be used to synergize each other and be incorporated in traps targeting sand flies.