

Abstract

Phlebotominae sand flies (Diptera: Phlebotominae) are important vectors of leishmaniasis. Control measures are complicated by the fact that sand fly breeding sites and resting places are generally hard to find. Measures used to control adult sand flies include the use of chemical insecticides for insecticide-treated bednets or curtains, residual spraying of dwellings, eventually the space-spraying. Domestic dogs as reservoir host of visceral leishmaniasis can be protected by dog-collars impregnated with insecticides or by spot on application of insecticides. Chemical insecticides may be toxic for non-target organisms and the increase of insecticide-resistance of some sand flies populations is possible. Therefore, new methods of biological control should be tested; entomopathogenic organisms (*Bacillus sphaericus*, *B. thuringiensis*, *Beauveria bassiana*), pheromone-baited traps and noxious plants could be used. Hormone TMOF, inhibitor of trypsin biosynthesis, was successfully tested in mosquitos. Based on similarity of mosquitos and sand flies, the effect of this peptide on blood digestion and egg development is tested in *Phlebotomus* and *Lutzomyia* species.