The potential of the extracts of Tagetes minuta Linnaeus (Asteraceae), Acalypha fruticosa Forssk (Euphorbiaceae) and Tarchonanthus camphoratus L. (Compositae) against Phlebotomus duboscqi Neveu Lemaire (Diptera: Psychodidae), the vector for Leishmania major Yakimoff and Schokhor

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Abstract:

Harmful effects of synthetic chemical insecticides including vector resistance, environmental pollution and health hazards have necessitated the current significance in the search for plant-based insecticide products that are environmentally safe and effective to leishmaniases control. The insecticidal activity of Tagetes minuta Linnaeus (Asteraceae), Acalypha fruticosa Forssk (Euphorbiaceae) and Tarchonanthus camphoratus L. (Compositae) extracts were investigated against Phlebotomus duboscqi Neveu Lemaire (Diptera: Psychodidae). METHODS: The extracts were prepared from dried aerial parts soaked in methanol and ethyl acetate twice until the filtrates became clear, filtered and dried out by rotary evaporation at 30-35 degrees C. The solid extracts obtained were later prepared into 2.5, 5 and 10 mg/ml. Two millilitres of the solutions were blotted on filter papers, which were dried overnight and placed into jars where adult sandflies were aspirated. Males and females were assayed separately. RESULTS & CONCLUSION: The extracts had significant mortality ($p<0.05$) in both males and females bioassays but were not significantly different between sexes. The extracts of Acalypha fruticosa and Tagetes minuta had significantly higher mortality rates than those of Tarchonanthus camphoratus and the different concentrations used showed significantly different mortality rates and 10 mg/ml was the most effective concentration. Cent percent mortality was obtained at 96 h of exposure to 5 and 10 mg/ml concentrations except for Tarchonanthus camphoratus which had a mortality of only 46.7% in 10 mg/ml bioassay. These extracts were found to be insecticidal to adult sandflies.