

Abstract

Aims: To evaluate the Ovicidal and larvicidal effects of *Ricinus communis* (Euphorbiaceae) extracts on *Phlebotomus duboscqi*.

Study Design: A comparative experimental design using extracts obtained from the leaf and bark of *Ricinus communis* plant.

Study Site: Kenya Medical Research Institute, Centre for Biotechnology Research and Development (CBRD), Nairobi Kenya from January to July, 2015.

Methodology: Aqueous, methanol and ethyl acetate extracts were prepared from *Ricinus communis* plant. Freshly laid eggs were moistened with 1 ml of each extract separately during the incubation period. Larvae were also fed on larval food mixed with the powdered crude extract and a

second group was fed on larval food sprinkled with 5 ml of each extract daily.

Results: No significant difference when bark and leaf extracts were compared ($P=0.061$).

250 $\mu\text{g/ml}$ and 500 $\mu\text{g/ml}$ of extract eroded all the chorionic membranes of the egg shell while egg

hatchability was significantly inhibited with only 7%, 9% and 26% of eggs hatching at 500 $\mu\text{g/ml}$ of

aqueous, methanol and ethyl acetate extracts respectively ($P<0.001$). 100% larval mortality noted

when at 500 $\mu\text{g/ml}$ methanol extract. The larval period was prolonged to 87 days with the life cycle

lasting for 101 days.

Conclusion: *R. communis* extracts have deleterious effects on hatching of eggs, larval and pupal development and adult emergence of *P. duboscqi*; hence *R. communis* should be used against

sand flies and *Leishmania* in situ.