

Lethal Activity of the Monoterpene Eugenol against Immature Stages of *Rhipicephalus sanguineus* (Acari: Ixodidae) from Argentina †

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† Presented at The Sixth International Meeting of Pharmaceutical Sciences (RICiFa), November 10-12, 2021, Córdoba, Argentina

Received: 26.04.2022; Revised: 4.05.2022; Accepted: 6.05.2022; Published: 8.05.2022

Abstract: The control of *Rhipicephalus sanguineus* is vital to prevent discomfort in domestic dogs and reduce the risk of transmission of several pathogens between animals and humans. Additionally, increased resistance and inefficiency of the most extended synthetic acaricides demonstrate the need to study novel, effective, and environmentally safe therapeutic options for brown dog tick control. The objective of this study was to assess the efficacy of eugenol and determine its lethal concentration 50 in larvae of *R. sanguineus* sensu lato from the province of San Luis, Argentina. Tick populations were obtained by inspecting dogs at veterinary clinics, veterinary hospitals, or rural areas. To determine the lethal activity of eugenol, the larval packet test technique was used. The statistical analysis was performed by using the Polo Plus software, which allowed us to obtain the lethal concentration 50% (LC₅₀). The highest death efficacy by eugenol was reported in ticks from veterinary clinics (CL₅₀: 2.94 mg/mL), followed by veterinary hospitals (CL₅₀:3.20 mg/mL) and rural zones (CL₅₀:4.66 mg/mL). In conclusion, the results suggest that eugenol may constitute an interesting alternative for controlling *R. sanguineus*, requiring complementary studies to deepen the lethal mechanisms produced by the monoterpene.

Keywords: *Rhipicephalus sanguineus*; bio acaricides; dogs; tick.

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Funding

This research received no external funding.

Acknowledgments

We would like to thank Mrs. S.H. Rogers for her careful manuscript correction and editing.

Conflicts of Interest

The authors declare no conflict of interest.