Activity of the ethanolic extract of *Schinus lentiscifolius* associated to the fungus *Beauveria bassiana* against larvae of the tick *Rhipicephalus* (*B.*) *microplus*.

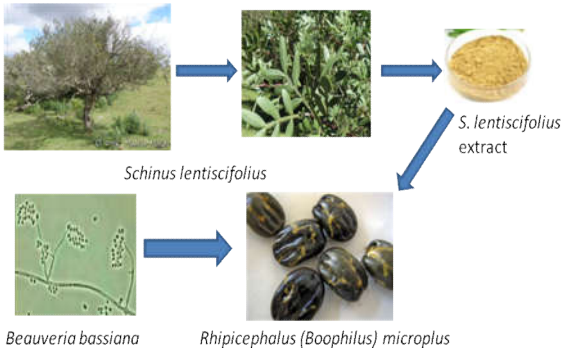
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Abstract (300 word limit)

Statement of the Problem: Infestations by ectoparasites, mainly by the tick *Rhipicephalus (Boophilus) microplus*, represent a great economic obstacle to cattle breeding[1]. The intense massive use of synthetic acaricides has produced ticks that are resistant to the molecules available in the market, leaves residues in the animal derivatives and can cause health problems to humans that consume them. Studies that search for effective alternatives that are economically viable and potentially safe should be encouraged. The objective of this study was to evaluate derivatives of natural products in association with entomopathogenic fungi against *R.* (*B.*) *microplus* larvaes. Methodology: *Beauveria bassiana* fungus, kept in BDA medium, was scraped and placed in saline solution adjusting the concentration to 10^7 conidia/mL[3]. The plant extract (*Schinus lentiscifolius*) was obtained by means of maceration with ethanol (1:10 w/w) during 7 days[2,5]. The sensitivity tests of *R.* (*B.*) *microplus* larvae were performed according to the technique developed by FAO[4]. In this methodology approximately 100 larvae of the species were placed on filter paper measuring approximately 10 x 8 cm, impregnated at concentrations of 10 to 1.25% associated with fungal suspension and controls. These papers impregnated with the extracts were folded into a "sandwich", sealed and packed in an oven at 27 °C and 80% relative humidity. The triplicates were read after 5 days of incubation with the help of a vacuum pump, adapted to differentiate live and dead larvaes. Findings: The results showed that in the highest concentration mortality was 15.46%. Conclusion & Significance: Despite the low percentage of mortality presented, it should be considered that the concentrations used were small. Another point to be highlighted is that the methodology is proposed for the detection of resistance to commercial acaricides and here is adapted to natural products and fungal associations.

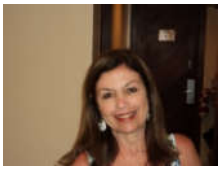
Support: Fapesp, CNPq.

Image



Recent Publications (minimum 5)

1. DRUMMOND, RO, ERNEST, SE, TREVINO, JL, GLADNEY, WJ, GRAHAM, OH (1973) *Boophilus annulatus* and *Boophilus microplus*: laboratory tests for insecticides. Journal of Economic Entomology 66, 130-13.
2. COLE, ER (2008) Estudo fitoquimico do óleo essencial dos frutos da aroeira (*Schinus terebithifolius* Raddi) e sua eficácia ao combate à dengue. Tese (Doutorado). Programa de Pós-Graduação em Química. Universidade Federal do Espírito Santo, Vitória; 2008.
3. FERNANDES, EKK, BITTENCOURT, VREP (2008) Entomopathogenic fungi against South American tick species. Experimental Application. Acarology. 46, 71–93.
4. FAO (1971). Recommended methods for the detection and measurement of resistance of agricultural pests to pesticides. Tentative method for larvae of cattle ticks, *Boophilus* spp.FAO Method No. 7. FAO Plant Protection Bulletin 19, 15–18.
5. GEHRKE, ITS. Neto AT, Pedroso M, Mostardeiro CP, Da Cruz IB, Silva UF, Ilha V, Dalcol II, Morel AF (2013) Antimicrobial activity of *Schinus lentiscifolius* (Anacardiaceae). Journal of Ethnopharmacology, 148, 486-491.



Biography (150 word limit)

Rosemeire C. L. R. Pietro is Associate Professor of Biotechnology, Faculty of Pharmaceutical Sciences of Araraquara in São Paulo State University-UNESP. She was graduated in Pharmaceutical Sciences from the same University. She completed her PhD in Biochemistry and her postdoctoral research at Ribeirão Preto School of Medicine, University of São Paulo-USP. She is the coordinator of the Postgraduate Course of Pharmaceutical Sciences Faculty of Pharmaceutical Sciences of Araraquara - UNESP. Her research interest includes drug discovery from natural sources, including the study of the mechanisms of action, microbial enzymes and biological activity.

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