Towards Good Management Practices in Parasite Control

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In vitro efficacy of plant extracts and synthesized substances on *Rhipicephalus (Boophilus) microplus* (Acari: Ixodidae)

L. D. de Barros¹, A. C. de Souza Chagas², F. Cotinguiba³, M. Furlan³, R. Giglioti¹, M. C. de Sena Oliveira², H. Ribeiro Bizzo⁴
¹Faculdade de Ciências Agrárias e Veterinárias/UNESP, Jaboticabal, SP; ²Centro de Pesquisa Pecuária Sudeste/EMBRAPA, São Carlos, SP; ³Instituto de Química/UNESP, Araraquara, SP; ⁴Centro de Tecnologia Agroindustrial de Alimentos/EMBRAPA, Rio de Janeiro, RJ.

Herbal drugs have been widely evaluated as an alternative method of parasite control, aiming to slow development of resistance and obtain low-cost biodegradable parasiticides. The aim of this study was to evaluate the in vitro efficacy on *Rhipicephalus (Boophilus) microplus* of *Carapa guianensis*, *Cymbopogon martinii*, *Cymbopogon schoenanthus* and *Piper tuberculatum* extracts and similar synthesized substances. In the immersion test, engorged females were collected from cattle and evaluated in five dilutions ranging from 10% to 0.030625%. In the larval test, around 100 larvae were placed on filter paper impregnated with the dilutions, ranging from 10% to 0.02%. The treatments and controls in both tests were done in three replicates. Phytochemical analysis of oils was performed by gas chromatography. The main compounds were oleic acid (46.8%) for *C. guianensis* and geraniol for *C. martinii* (81.4%) and *C. schoenanthus* (62.5%). The isolated and synthesized substances showed no significant effect on larvae and engorged females. *C. martinii* at a concentration of 5% and *P. tuberculatum* at 10%, showed the best efficacy on the engorged females, causing 75.60% and 91.97% mortality, respectively. The fact that geraniol is present in greater quantities in *C. martinii* explains its higher activity in relation to *C. schoenanthus*. There is still a need to validate the in vivo use of safe and effective phytoparasitidal substances. Efforts should be focused on developing formulations that enhance the efficacy of these extracts in vivo and lengthen the residual period.