

PRESENCE OF ARRESTMENT PHEROMONE ON THE TROPICAL LINEAGE OF THE BROWN DOG TICK

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Rhipicephalus sanguineus sensu lato is a complex of species and there is evidence of at least two different lineages, tropical and temperate in this complex. The aim of this study was investigate if *R. sanguineus* s.l. from a tropical lineage produces arrestment pheromone as well was already demonstrated for the temperate lineage. Engorged larvae and nymphs were kept in a glass vial for 30 days, lately 0.200 g of the excreta and exuvia were collected after the molting and solubilized in 500 μ l of NaCl (0.95%) and then agitated for 20 s, in a 5 vortex cycles. The liquid was transferred to another vial and reduced under a gentle flow of N₂ air to a volume of 250 μ l. The tests were done comparing the response of *R. sanguineus* s.l. for the extract and control. The bioassay was performed using a filter paper (15 cm \varnothing) under a Petri dish (14 cm \varnothing) and carried out in a climatic chamber (RH95%, T30°C), in total darkness. The filter paper was divided into six equal sectors, numbered from 1 to 6. In sector 1 was placed a filter paper of 1x4cm treated with solvent (control) or extract (treatment). The other sectors were not treated. After the treatment, 10 adults (5 ♂ and 5 ♀), or 10 fed or unfed nymphs were released in the center of the filter paper. The position of the ticks was observed 1, 2 and 24 h after the beginning of the bioassay. Ten replicates were performed for each treatment and the control. Data were transformed $\log(x+1)$ prior to analysis by differences between means located by paired *t* test. Adult ticks were arrested on the extracts after 2 h ($t= 3.27$, $p=0.009$) and with an increase of the arrestment after 24 h ($t= 4.64$, $p=0.001$). No arrestment was observed 1 h after the beginning of the experiments ($t= 0.34$, $p= 0.73$). Unfed nymphs arrestment all times evaluated: 1h ($t=6.0$, $p=0.0002$), 2h ($t=9.30$, $p=6,52 \times 10^{-6}$) and 24h ($t=3.42$, $p=0.007$). However, engorged nymphs were not arrested in any time evaluated. In the control tests, ticks were not arrested in any sector of the filter paper in any time evaluated, except for unfed nymphs that arrested after 24h ($t=2.29$, $p=0.04$), maybe it can be to tigmotaxis. The results presented here show that the tropical lineage of *R. sanguineus* s.l. produces an arrestment pheromone. New studies are been conducted to identification the compounds in the extract and the bioactive compounds.

Keywords: behavior, chemical ecology, tick control.

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