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A study of the acaricidal properties of an essential oil extracted from the leaves of *Ageratum houstonianum*

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Abstract

Study on acaricide property of foam soap containing essential oil of *Ageratum houstonianum* leaves was tested on *Rhipicephalus lunulatus*. Four doses of the oil (0.00, 0.02, 0.025 and 0.03 $\mu\text{l/g}$) with four replications for each dose were used in vitro. Each replication consisted of 10 ticks in a Petri dish with filter paper impregnated uniformly with the foam soap on the bottom. The same four doses in three replications were used in vivo. Each replication was made up of 10 naturally ticks infested goats. Results of this study indicate that foam soap containing essential oil of *A. houstonianum* leaves is toxic to *R. lunulatus*. The in vitro mortality rate was observed to vary from 0 to 50% on day 8 after treatment with the controls as compared to 95% with the lowest dose (0.02 $\mu\text{l/g}$) on day 8 and 100% with the highest dose (0.03 $\mu\text{l/g}$) on day 3. Meanwhile, the in vivo mortality rate was observed to be 23.4% with the control on day 8 after treatment whereas the highest dose killed 95.1% of the ticks by this day. The LD₅₀ of the foam soap containing essential oil of this plant was 0.0259 and 0.0173 $\mu\text{l/g}$ on day 2 after treatment, in the laboratory and on the farm, respectively. This indicates a potentially high efficiency of this medicated soap on this parasite.

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Keywords: *Rhipicephalus lunulatus*; *Ageratum houstonianum*; Essential oil; Foam soap; Leaves; LD₅₀