

THE ACTION OF THYMOL ON THE ACCESSORY GLANDS OF GENÉ'S ORGAN IN FULLY ENGORGED *Rhipicephalus sanguineus sensu lato* FEMALES

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The Gené's organ plays a fundamental role for the survival and reproduction of ticks; therefore, the objective of the present study was to evaluate the damages caused by thymol to the morphology of the accessory gland cells of the Gené's organ in fully engorged *Rhipicephalus sanguineus sensu lato* females. For the experiment, 50 fully engorged females were divided into five groups (10 females/group), and exposed to thymol diluted in hydroethanolic solution at 30%, at the concentrations of 5.0, 10.0 and 20.0 mg/mL. Two control groups were established (water and ethanol 30%). Five days following exposure, the females were anesthetized by thermal shock to have the Gené's organs removed. For histological analysis, the accessory glands were fixed in paraformaldehyde 4%, dehydrated in crescent ethanol series (70, 80, 90, 95 and 100%) at 15-minute intervals, infiltrated in Leica resin, placed in plastic molds and kept at 4°C for polymerization. The material was sectioned at 3 µm and mounted on glass slides, stained with hematoxylin-eosin and analyzed and documented using photonic microscope Motic BA 300. The results showed that, in control group I, the accessory cells are constituted of a set of secretory cells from class III, once they present an intracellular canaliculus, responsible for collecting and modifying the secretion produced inside the secretory cell. Such cells showed oval or round shape and heterogeneous cytoplasm. In the females exposed to ethanol 30% (v.v), the secretory cells maintained most characteristics observed in the ones belonging to control group I. The thymol concentration of 5.0 mg/mL caused the emergence of cytoplasmic vacuoles, and in the group exposed to 10.0 mg/mL, the vacuolation was more intense in comparison with the previous group, with deformation of the cell limits, probably due to cell shrinking caused by the loss of cytoplasm. The females exposed to thymol at the concentration of 20.0 mg/mL had the cytoplasm of accessory gland cells weakly stained by eosin; in addition, the eggs laid were apparently dry, supposedly inviable.

Keywords: histopathology, monoterpene, control, tick, secretory cells.

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