



## EOSINOPHILS INCREASE IN ANIMALS THAT RECEIVED BIOTHERAPIC

### AUMENTO DE EOSINÓFILOS EM ANIMAIS QUE RECEBERAM BIOTERÁPICO

PEDRO GILBERTO SILVA MORAIS<sup>1</sup>, GABRIELA LÍCIA SANTOS FERREIRA<sup>2</sup>, EDMUNDO BENEDETTI<sup>3</sup>, ANTONIO VICENTE MUNDIM<sup>3</sup>, EDNALDO CARVALHO GUIMARÃES<sup>4</sup>

<sup>1</sup>Pós-Graduação da Faculdade de Medicina Veterinária (FAMEV), Universidade Federal de Uberlândia (UFU), Rua Vera Cruz, 293, B. Central. 38307-000, Ituiutaba, MG, Brasil. E-mail: [pedro-gilberto@hotmail.com](mailto:pedro-gilberto@hotmail.com)

<sup>2</sup>Faculdade de Ciências Integradas do Pontal (FACIP), UFU, Ituiutaba, MG, Brasil.

<sup>3</sup>Faculdade de Medicina Veterinária (FAMEV) UFU, Ituiutaba, MG, Brasil.

<sup>4</sup>Faculdade de Matemática (FAMAT), UFU, Ituiutaba, MG, Brasil.

Dairy industry is an important Brazilian economic activity participating of income generation. European breeds cattle aren't adapted to parasites found in the tropics, like the *Rhipicephalus microplus* tick. Parasites can acquire resistance to allopathic products, but not to homeopathic products. We evaluate the efficacy of an antiparasiticide biotherapeutic against the *R. microplus* tick. The biotherapeutic was prepared according to the homeopathic pharmacopoeia recommendations from vegetable (*Abrotanum*) and animal products (*Rhipicephalus microplus*, *Amblyomma cajenennense*, *Haematobia irritans*, *Musca domestica*, *Dermatobia hominis*), all diluted and vigorous shaken (dynamized) in water or alcohol at a ratio of 1:99, in the 12<sup>th</sup> Centesimal Hahnemann (CH12), with limestone as the carrier. This homeopathic product found in veterinary pharmacies of Ituiutaba's region, Minas Gerais State, is registered at Ministério da Agricultura, Pecuária e Abastecimento (MAPA). Natural tick infestation was accessed in thirty Girolando (Gir x Holstein) cows with 7 to 13 year-old, by monthly counting of tick female bigger than 6 mm, from October/2009 to July/2011. Cows were divided in three groups of 10 similar animals. The treated group (T1) received roughage, concentrate and biotherapeutic. The placebo group (T2) received roughage, concentrate and limestone and the control group (T3) received only roughage and concentrate. T1 and T2 groups were managed together and remained in the same paddock. T3 group was separated from T1 and T2 by a wire fence. From October 2009 to September 2010 blood cell counts and serum biochemical tests were performed monthly only in T1 and T2, but visual clinical observations were made in all animals. Any group was treated with acaricide when the count's average reached 50 or more ticks. It was necessary 7 baths with acaricide in T1 and T2, while in T3 group (control group) it was necessary 19 acaricide baths to control the cattle tick. We verified morphological changes in juveniles and adults ticks parasitizing animals which consumed the biotherapeutic. This observation suggests a negative interference of the biotherapeutic in the biological cycle of the tick, decreasing its population and consequently his control's necessity. Comparing the blood cells counts of the first and the twelfth month, a raise of 23% ( $P > 0.05$ ) in the eosinophils and 8% ( $P < 0.05$ ) in the platelets was observed in the T1 animals. No changes in liver enzymes were observed. The increase in eosinophils and platelets found in this experiment suggests that biotherapeutic ingested by the animals strengthens the defense system and the clotting cascade.

Key words: bovinos leiteiros, homeopatia, *Rhipicephalus microplus*.