

Cellular response in the abomasal and intestinal mucosa of sheep and goat resistant and susceptible to gastrointestinal nematodes infections

¹SILVA, Carlikelly Gléicy; ¹SOUZA, Jorge Lucas Nascimento; ¹MUNIZ, Heloisa Lara; ²MANGABEIRA e SILVA, Iasmim Santos; ³SILVA, Raí Lima; ⁴SILVA, Naisandra Bezerra; ⁵ZAROS, Lilian Giotto.

¹*Discente do Curso de Ciências Biológicas (UFRN).* ²*Discente do Programa de Pós-Graduação em Produção Animal (UFRN).* ³*Discente do Curso de Engenharia Agrônômica (UFRN).* ⁴*Docente do Departamento de Morfologia (UFRN).* ⁵*Docente, orientadora do Departamento de Microbiologia e Parasitologia (UFRN).*

ABSTRACT

Infections caused by gastrointestinal nematodes can lead a serious problem for farm animals. It directly affects the production of meat, milk and wool, causing economic losses to producers. Sheep and goats may respond differently to endoparasite infections. In this context, the aim of this study was to compare the cellular response in the abomasum and small intestine mucosa from resistant and susceptible sheep and goat to gastrointestinal endoparasites. Fifty-one goats crossbred ½ Anglo Nubiano½ Saanen and 48 sheep half-breed Santa Inês x ½ SRPD were used, kept in native pasture naturally contaminated by gastrointestinal nematodes during 4 months. During this period, the animals were monitored weekly by Fecal Egg Counts (FECs), Coproculture and Packed Cell Volume (PCV). At the end of the experiment, the animals with the highest and lowest FECs counts were slaughtered (12 sheep and 12 goats), necropsied and tissue samples from abomasum and small intestine were collected and fixed for 6 h in formalin solution (4%) and later embedded in paraffin wax for routine histological procedures. Sections of 5 µm were stained with haematoxylin–eosin (H&E) and the eosinophils and globular leukocytes were counted. Inflammatory cells were counted under a 10× eyepiece containing calibrated graticule and 100× objective lens with a 0.01-mm² viewing area. Counts were carried out systematically from the muscularis to the mucosal surface on 30 graticule fields. Results of cell counts were expressed as arithmetic means of cell number/mm² mucosa. There were no significant differences between resistant and susceptible sheep regarding to mean number of eosinophils and globular leukocytes in both tissues (P>0.05). In goat herd, there was difference (P<0.05) between resistant and susceptible animals regarding to globular leukocytes (73.0 and 43.0 cells/ mm² mucosa) only in small intestine mucosa. However, analysis was restricted to the enumeration of cells at slaughter and a significant cell influx was more pronounced in the resistant animal from both herds at other moments of the trial. Similar findings were reported by other authors regarding to high eosinophils cells in abomasum from resistant sheep and goat and that the resistance to nematode infection and elimination of parasites can be either cell-dependent or independent, according to the host, the infection site and the parasite studied.

Key words: eosinophils; globular leukocytes; infection; mucosa.