TITLE: DYNAMICS OF *LEPTOSPIRA* SP. INFECTION IN SHEEP EXPERIMENTALLY CHALLENGED WITH *L. INTERROGANS* POMONA SEROGROUP*.*

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ABSTRACT:
Most of the information about leptospirosis was obtained from experimental infections with rodents, which in spite of being relevant, do not provide all the answers about the disease in animals and human beings, given the variability of interactions which exist between the agent and the different hosts. Therefore, the objective of the present study was to verify the pathogenesis of the infection in native breeds of sheep of Brazil challenged with a strain of the serogroup Pomona. A total of 10 sheep were divided into two groups with five animals according to the breed. In each group four sheep were challenged by intraperitoneal route with a strain of the serogroup Pomona and one was used as control. Sheep were monitored for 60 days, with collection of blood for serologic diagnosis, as well as vaginal fluid and urine for microbiological and molecular analyses. After this period the animals were submitted to euthanasia and necropsy, with collection of tissues for microbiological, molecular and histopathologic diagnosis. All the challenged sheep presented anti-*Leptospira* antibodies*.* Crossbred sheep presented a lower concentration of titers and the antibodies were detected for a shorter period of time when compared to the Santa Inês sheep, with statistical difference in the concentration of the titers on the days 15 ($p<0.05$), 45 ($p<0.05$) and 60 ($p<0.05$) post-infection. There was no significant difference between the groups when comparing the positivity rates of the microscopic agglutination test (MAT) ($p>0.05$). Eight positive reactions in the urine and vaginal fluid PCR were detected in both groups, being four (50%) in urine and four (50%) in the vaginal fluid, however without statistical difference ($p>0.05$). In both groups there was a greater proportion of PCR positive samples in kidneys (71.4%) in relation to uterus (28.6%), however without significant difference ($p>0.05$). There was no significant difference between the groups when comparing the positivity rates of the PCR ($p>0.05$). The isolation of leptospires from the urine and kidney of a crossbred sheep was possible. Therefore, it is possible that the native Brazilian sheep, especially the crossbred, may have a relation of adaptability with strains of the serogroup Pomona. However the intensity and duration of this relation need to be elucidated and longer-lasting investigations of natural and experimental infections are necessary in order to determine the epidemiological nature of this relation.

Keywords: Adaptability; Leptospirosis; Santa Inês, Crossbred sheep*;* Pomona.

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