

TITLE: IDENTIFICATION OF *LEPTOSPIRA* SP. IN GENITAL AND URINARY TRACTS OF SHEEP SLAUGHTERED UNDER SEMIARID CONDITIONS

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ABSTRACT:

Leptospirosis is a widespread infectious disease caused by bacteria of the genus *Leptospira* sp., capable of affecting domestic and wild animals, as well as humans. It is known the contribution of the renal site in the dissemination of the agent, however, in the case of females there is dissemination through the vaginal fluids, placenta, intrauterine infection and colostrum. Furthermore, although the transmission from the male to the female is already well defined, the role of the females in the transmission is still uncertain and neglected. The objective of this survey was to detect *Leptospira* sp. in renal and extra-renal sites, in addition to determining the frequency of specific antibodies in sheep slaughtered in the county of Patos, Paraíba state, Brazilian semiarid. Fifty-two animals were used, from which samples of blood, vaginal fluid and urine, and fragments of bladder, kidney, uterus, ovary, uterine tube and placenta were collected. Microscopic agglutination test (MAT) technique was used for the detection of serum antibodies. For DNA detection the primers *LipL* 32-45F (5'-AAG CAT TAC CGC TTG TGG TG-3') and *LipL* 32-286R (5'-GAA CTC CCA TTT CAG CGA TT-3') were used. Of the 52 animals 12 (23.1%) were seropositive, with reactions to the serogroups Icterohaemorrhagiae (33.3%), Autumnalis (25%), Bratislava (25%) and Pomona (25%), with antibody titers ranging from 1:50 to 1:1600. Of the 374 samples used in DNA detection of *Leptospira* sp. 135 (36.1%) were positive. The frequencies according to the biological material were as follows: vaginal fluid 46.2% (24/52), urine 26.9% (14/52), uterus 36.5% (19/52), ovary 25% (13/52), uterine tube 42.3% (22/52), renal tissue 38.5% (20/52), bladder 28.8% (15/52) and placenta 80% (8/10). Sequencing of the genes from six samples (one from urine, one from uterus, two from uterine tube, one from renal tissue and one from bladder) demonstrated 99% similarity to the species *Leptospira interrogans*. These results showed high frequency in the serological and molecular detection of *Leptospira* sp. in sheep under semiarid conditions, and that the pathogenic leptospires colonize both the urinary and reproductive tract, emphasizing the possible importance of females in the venereal transmission.

Keywords: animal leptospirosis, venereal transmission, molecular detection, reproductive problems.

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