

TITLE: SEROLOGICAL AND MOLECULAR DETECTION OF *LEPTOSPIRA* SP. IN FETUSES FROM SHEEP SLAUGHTERED UNDER SEMIARID CONDITIONS

AUTHORS: NOGUEIRA, D.B.; COSTA, F.T.R.; BEZERRA, C.S.; SILVA, M.L.C.R.; ARAÚJO JÚNIOR, J.P.; MALOSSI, C.D.; ULLMANN, L.S.; ALVES, C.J.; SANTOS, C.S.A.B.; AZEVEDO, S.S.

INSTITUTION: UNIVERSIDADE FEDERAL DE CAMPINA GRANDE (UFCG), CENTRO DE SAÚDE E TECNOLOGIA RURAL (CSTR), AV. UNIVERSITÁRIA, S/N, SANTA CECÍLIA, PATOS, PB 58708-110, BRAZIL.

ABSTRACT:

Leptospirosis is an important zoonotic bacterial infection caused by spirochetes of the genus *Leptospira*. In small ruminants the disease has generated significant economic losses related to low fertility, abortion, stillbirth, neonatal mortality, fetal mummification, decreased milk production and birth of weak offspring. The objective of this survey was to report the presence of antibodies and DNA of *Leptospira* sp. in fetuses of sheep slaughtered at the municipal public slaughterhouse of Patos, state of Paraíba, Brazilian semiarid. Fourteen fetuses of sheep slaughtered for consumption were used, eight of them from twin pregnancy, from which samples of blood, stomach contents and peritoneal fluid were collected, as well as fragments of lung, liver, spleen, kidney, reproductive system, central nervous system and stomach primordium. Microscopic agglutination test (MAT) technique was used for the detection of sérum 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. None of the sérum samples were seropositive at the titre of 1:50, however, of the 98 samples used in DNA detection 41 (41.8%) were positive. The frequencies according to the biological material were as follows: peritoneal fluid 8.3% (1/12), stomach contents 50% (6/12), lung 16.7% (2/12), liver 58.3% (7/12), spleen 25% (3/12), kidney 58.3% (7/12), reproductive tract 50% (6/12), central nervous system 64.3% (9/14), stomach primordium 100% (2/2). Sequencing of the genes from three samples (one from hepatic tissue, one from renal tissue, and one from central nervous system) demonstrated 99% similarity with the *Leptospira interrogans* species. The data obtained suggest that even the fetus may not produce anti-*Leptospira* sp. antibodies they are capable of harboring leptospires in organs. This demonstrates that these bacteria are able to cross the transplacental barrier, but there is still a need for studies that seek to understand the dynamics of antibody production during the period of fetal formation.

Keywords: animal leptospirosis, transplacental transmission, fetuses, PCR.

Development Agency: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)