

2. Sub-área: Leptospirose em animais de Produção e Equinos

***Leptospira noguchii* associated to subfertility in cattle**

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Bovine genital leptospirosis (BGL) is a zoonotic disease that leads to economic losses. *Leptospira interrogans*, *L. borgpetersenii* and *L. santarosai* are the most important etiological agents of this syndrome. However, *L. noguchii* is considered an emerging pathogen, since it has been frequently isolated from cattle in South America. Although *L. noguchii* has been associated to human leptospirosis, clinical manifestation in cattle was not frequently reported. Therefore, this study aimed to associate *L. noguchii* with low reproductive efficiency in cows. Procedures were approved by Ethical Committee for Animal Use of Federal Fluminense University (protocol 1025/2017). A beef herd located in Rio de Janeiro was selected due to high leptospirosis seroreactivity by Microscopic Agglutination Test (MAT). From that, 35 subfertile cows (i.e cows presenting estrus repetition and early embryo death) were selected. Urine samples were obtained by transurethral probe. Cervico-vaginal mucus (CVM) collection was performed by sterile cytology brushes. And uterine fragments (UF) were collected by transcervical via using Yeoman forceps. All clinical samples were immediately inoculated in T80/40LH medium, and also, properly stored to molecular analysis. PCR targeting *LipL32* gene were performed in all clinical samples. *LipL32* -PCR positive samples and obtained isolates were submitted to partial sequence of *secY* gene. *LipL32*-PCR showed positive results for 3 of 35 (8.5%) of CVM samples, 2 of 34 (5.8%) of urine and 4 of 10 (40%) of UF samples. Partial sequencing of *secY* gene from genital samples showed 100% similarity with *L. interrogans* serogroup Sejroe, *L. interrogans* serogroup Icterohaemorrhagiae and *L. noguchii* serogroup Australis. From 79 cultures, only one leptospiral isolate was obtained from urine and was characterized as *L. noguchii* serogroup Australis also with 100% similarity to U65 strain. U65 was recovered from an asymptomatic bovine without history data, in Rio de Janeiro state. The epidemiological proximity might suggest that this strain could be endemic, even though the reservoir of this leptospiral species is unknown. To our knowledge, this is the first report of *L. noguchii* genetic identification in uterus samples and its isolation of urine from bovines with known subfertility. Those results indicate that the important zoonotic pathogen *L. noguchii* could also play a role as agent of BGL.

Keywords: leptospirosis, genital, culture, molecular diagnose, cattle.

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