Epidemiological survey of serogroup Serjoe in cattle in Colombia (2018-2023)

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Leptospirosis, a zoonotic disease, occurs worldwide and is caused by infection with pathogenic bacteria belonging to the genus *Leptospira*[(1)]. Cattle are the maintenance host for strains of the Serjoe serogroup, mainly serovar Hardjo, which consists of two serologically indistinguishable but genetically distinct species: *Hardjoprajitno* belonging to the species *L. interrogans* (HP) and *Hardjobovis* belonging to the species *L. borgpetersenii* (HB) [(2)]. This serogroup has been associated with reproductive failures, meaning that Sejroe strains play a key role in the reproductive syndrome of bovine genital leptospirosis (BGL)[(1)]. Beyond their adaptation to cattle, the importance of these strains can be attributed to Sejroe's preference for colonizing the uterus [(1)]. Other agents of bovine leptospirosis include the incidental strains *Icterohaemorrhagiae, Pomona, Australis,* and *Grippotyphosa* (*L. interrogans*), which are adapted to other hosts but can still infect cattle and can lead to acute manifestation, especially in calves, and abortion outbreaks. [(3)]. Over a period of five years (September 2018 to September 2023), bovine serum samples from non-vaccinated cows against leptospira that were experiencing reproductive failure in different regions of Colombia were analyzed at LABORATORIO MEDICO VETERINARIO S.A.S. (L.M.V.), Bogotá, Colombia. The objective of this epidemiological survey was to determinate an updated seroprevalence of serogroup serjoe in bovine blood samples in Colombia. A total of 13,432 bovine serum samples were analyzed using the microscopic agglutination test (M.A.T.) to detect anti-leptospiral agglutinins for serogroup Sejroe, a standard test recommended by the World Organization for Animal Health (OIE). Of the 13,432 samples analyzed, 6,257 (46%) were positive for samples of the Sejroe serogroup. The results observed are consistent with the existing literature showing that in cattle, strains belonging to the Sejroe serogroup, mainly the species *L. interrogans, L. borgpetersenii* and *L. santarosai*, are adapted to the host and associated with a silent and chronic disease affecting the reproductive tract, leading to great economic losses. Based on this, the inclusion of antigens against the Sejroe serogroup in cattle leptospira vaccines is advisable [(1)]

1 Di Azevedo, M.I.N. et al. Genetic Analysis of LigA, LipL32, Loa22, and OmpL1 Antigens from Leptospira spp. Sejroe Serogroup: How Close We Are To a Vaccine Against Bovine Leptospirosis? Current Microbiology (2023) 80:310

2 Loureiro, A.P.; Lilenbaum, W. Genital bovine leptospirosis: A new look for an old disease. Theriogenology 141 (2020) 41e47

3 Luiza Aymée, L.; Mendes, J.;Lilenbaum, W. Bovine Genital Leptospirosis: An Update of This Important Reproductive Disease. Animals 2024, 14, 322.