TITLE: ANTIMICROBIAL ACTIVITY OF THE ETHANOLIC EXTRACT OF *Mimosa tenuiflora* (WILLD.) POIR (JUREMA-PRETA) AND HYDRAZONES AGAINST ISOLATES OF Corynebacterium pseudotuberculosis

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ABSTRACT:

Small ruminants have a large socioeconomic role in the Northeastern semi-arid region, however, caseous lymphadenitis, caused by the bacterium Corynebacterium pseudotuberculosis, causes economic losses. The virulence of this bacterium is associated with several factors, among them, the formation of biofilms, conferring a high persistence in the environment and resistance to several antimicrobials. Juremapreta is a plant native from Caatinga that has medicinal properties, among them, the antimicrobial. Hydrazones are organic compounds derived from drugs that have a great variability of functions, among them, the antibacterial activity. The aim of this study was to evaluate the antimicrobial activity of Mimosa tenuiflora (Willd.) Poir, known as Jurema-preta and seven hydrazones against two isolates (strain 21, weak biofilm producer and 76, strong producer) of C. pseudotuberculosis belonging to the bacterial collection of the Laboratory of Animal Microbiology and Immunology of UNIVASF collected from goats with caseous lymphadenitis. For this, the Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) of each compound were determined using the broth microdilution technique. The ethanolic extract of *M. tenuiflora*, with an initial concentration of 25.000 µg/mL, had MIC and MBC of 1.562,5 µg/mL for strain 21. For strain 76, it had MIC of 1.562,5 µg/mL and MBC of 3.125 µg/mL. Hydrazones with an initial concentration of 300 μ g/mL showed the following results: DHV-1 results for MIC and MBC were 75 μ g/mL. DHV-2, DHV-3, DHV-4 and DHC-6 had a MIC and MBC of 150 µg/mL. DHC-5 with a MIC and MBC of 9.37 µg/mL for both strains and, finally, DHC-7 MIC was 18.75 µg/mL for both strains and MBC was 75 µg/mL for strain 21 and 37.5 µg/mL for strain 76. Due to the individual variations of each hydrazone, the results were oscillating, of which DHC-5 and DHC-7 hydrazones obtained better results. The result of ethanolic extract of *M. tenuiflora* demonstrated a good effect. For strain 76, a strong biofilm producer, MBC needed to be bigger. Thus, the use of Jurema-preta herbal principles and hydrazones have a high antimicrobial potential.

Keywords: Caseous lymphadenitis, MBC, MIC, phytotherapy, resistance.

Development Agency: This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – Brasil (CAPES) – Finance Code 001