

TITLE: EVALUATION OF THE ANTIMICROBIAL EFFECT OF *Mimosa tenuiflora* (jurema preta) AGAINST *Staphylococcus spp.* ISOLATED FROM BOVINE MILK

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Bacteria of the genus *Staphylococcus spp.* are a major concern for dairy farmers, since they are the main cause of mastitis, inflammation in the mammary gland responsible for great economic losses. Different genes contribute to bacterial pathogenicity, including those linked to biofilm production, such as the *icaD* gene. The control of mastitis occurs through antibiotic therapy, however, it is not totally effective, a fact that can also be attributed to the biofilm produced by the microorganisms. There is also the concern with the propagation of resistant bacteria, to the environment, being necessary the development of methods more efficient. Herbal medicines are of interest because they present lower risks of side effects and lower costs. This work aims to evaluate the antimicrobial effect of *Mimosa tenuiflora* as well as to identify the presence of the *icaD* gene in *Staphylococcus spp.* isolated from bovine milk. The milk samples were collected from 44 properties, each *pool* was collected from the storage tank of the properties. In the bacterial isolation, the samples considered positive were those that presented the growth of a hemolytic colony and those with four non-hemolytic colonies with the same morphological characteristics, positivity for Gram staining and catalase production, and evaluation of the presence of the gene *icaD* by the Polymerase Chain Reaction (PCR) technique. Subsequently, the Minimum Bactericidal Concentration (MBC) test was performed using the *Mimosa tenuiflora* ethanolic extract. The results showed that it was possible to isolate 58 *Staphylococcus aureus* from the pool of each of the properties and to identify the presence of the *icaD* gene in 31% (18/58) of the isolates and the antimicrobial activity of the ethanolic extract was observed in 100% of the isolates. Most of the *S. aureus* isolates (67.24%) were sensitive at the concentration of 31.25 µg/mL. Bovine milk bacteria may present different genes related to virulence - such as the *icaD* gene, making them more resistant to treatment. Despite the identification of the presence of this gene in some isolates, the level of expression still needs to be verified and correlated with the biofilm formation capacity. In addition, the antibacterial activity of the *Mimosa tenuiflora* ethanolic extract against *S. aureus* was verified, which demonstrates its potential for the treatment of mastitis, more studies are necessary to characterize its antimicrobial activity.

Keywords: bacteria, mastitis, *icaD*, PCR, biofilm