

**Title: ANTIMICROBIAL ACTIVITY IN VITRO OF *Hymenaea martiana* Hayne ON BACTERIA FROM THE GENDER *Staphylococcus* ISOLATED FROM CAPRINE MASTITIS CASES**

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**Resumo:**

Mastitis is one of the diseases that most harms the dairy herds. It is an inflammatory process of the mammary gland being usually caused by microorganisms, including those belonging to the genus *Staphylococcus*. This disease is characterized by physical, chemical and usually bacteriological changes in the milk as well as pathological changes in the udder, which affect the animal productivity, like the dairy goats. The treatment is performed with support of some chemical groups of antimicrobial. However, the continued use of these drugs has been determinants to emergence of resistant bacteria. Thus, alternatives are necessary front to antimicrobial used. The *H. martiana* shows proven anti-inflammatory activity and also demonstrated antimicrobial activity in front to bacterial strains, such as *Escherichia coli* and *Staphylococcus aureus*, all from of dairy production. The objective of this work was to study the antimicrobial action of the extract of the *H. martiana* in different solvents on bacteria from the gender *Staphylococcus* and to compare the results of CBM among positive and negative isolated for gene *blaZ*. The study was conducted in the Microbiology and Immunology Laboratory at the UNIVASF, in the city of Petrolina – PE. The extracts were prepared using different solvents, these being: absolute ethyl alcohol and distilled water. Then, it was used the technique of Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC). All assays were performed in triplicate. The CBM average from diluted extract in ethanol was 358 µg/µl and from extract diluted in distilled water was 520,82 µg/µl. There was greatest activity to inhibit the bacterial extract diluted in absolute alcohol (p <0.05). In addition, when comparing the activity of extract diluted in ethanol and the relationship with the presence of *blaZ* gene has been observed that the negatives insulated for the researched gene showed a CBM equal to 412.3 µg/µl, when compared with those that were positives for *blaZ* gene (308, 80 µg/µl), however, without statistical difference. Furthermore, the inhibition of bacteria using aqueous extract activity was equal to the bacteria with or without genes (520,82 µg/µl). Thus, the extract diluted in absolute ethanol showed it more efficient, suggesting a higher extraction of active substances when the dilution of the extract occurs in ethanol.

**Key words:** alternative, biofilm, biotechnology, resistance, sustainable livestock