

TITLE: EVALUATION OF ANTIMICROBIAL ACTIVITY OF LAPACHOL AGAINST *Staphylococcus Spp.* ISOLATES FROM CATTLE, BUFFALOS AND GOATS WITH MASTITIS

AUTHORS: SILVA, V. B.; SANTOS, R. G. S.; FERNANDES, A. W. C.; COSTA, M. M.

INSTITUTION: UNIVERSIDADE FEDERAL DO VALE DO SÃO FRANCISCO – UNIVASF, PETROLINA, PE (RODOVIA BR 407, 12 LOTE 543 - PROJETO DE IRRIGAÇÃO NILO COELHO - S/N C1, CEP 56300-000, PETROLINA - PE, BRAZIL)

ABSTRACT

Mastitis is characterized as an inflammatory process of the mammary gland caused by different factors, being the main cause for the presence of bacteria of the genus *Staphylococcus*. The increase in cases of antimicrobial resistance resulted in the search for the development of more effective and safe alternative treatment methods, the example of the use of medicinal plants or their derivatives. In this context, one that can be highlighted is Lapachol, a naphthoquinone isolated from the core of trees belonging to the families *Bignoniaceae*, *Verbenaceae* and *Proteaceae*, known in Brazil as Ipê. This substance has various biological activities, such as anticancer, antimicrobial and anti-inflammatory. Therefore, it would be interesting to study the effect of this substance on the treatment of mastitis. Thus, the objective was to evaluate the antimicrobial activity of Lapachol against *Staphylococcus spp.* isolates from cattle, buffalos and goats with mastitis. For this, the microdiluição technique was performed in 96 wells plate with Lapachol. It was used the concentration of 4 mg/mL of Lapachol diluted in ethanol solution in a concentration of 1:1 (one part water/one part ethanol). Analysis of Minimum Bactericidal Concentration (MBC) of Lapachol was held by microdiluição technique in a serial dilution, obtaining the concentrations of 1000; 500; 250; 125; 62.5; 31.25; 15.62; 7.81 µg/mL. It was possible to observe that for concentrations of 1000 and 500 µg/mL of Lapachol, there was no bacterial growth on any of the 4 isolates used in this study. Therefore, it was concluded that Lapachol presented antimicrobial activity against isolates of *Staphylococcus spp.*, which demonstrates its potential for the treatment of mastitis. However, other analyses have to be carried out for the confirmation of the antimicrobial potential.

Keywords: mastitis, *Staphylococcus*, naphthoquinone, resistance