

TITLE: ANTIBACTERIAL EFFECT OF THE ESSENTIAL OIL OF *Vitex gardneriana* SCHAUER LEAVES AGAINST *Staphylococcus aureus* and *Pseudomonas aeruginosa*.

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ABSTRACT:

Vitex gardneriana Schauer, popularly known as jaramataia, is a shrub found in river beds in Northeastern Brazil, including the State of Ceará, and has anti-inflammatory and analgesic action already reported in the literature. Considering the above, the present study aimed to evaluate the *in vitro* antimicrobial effect of essential oil from *V. gardneriana* leaves against Gram-positive (*Staphylococcus aureus* INCQ 00039) and Gram-negative (*Pseudomonas aeruginosa* INCQ 00025) strains. The leaves of *V. gardneriana* (5.8Kg) collected in the city of Sobral (Ceará) in August 2021 were subjected to hydrodistillation in a Clevenger apparatus to obtain 2 mL of essential oil (OEVG). The antibacterial action was determined, in triplicate, by the disk-diffusion method on Mueller-Hinton Agar to determine the inhibition zone. The Brain Heart Infusion Broth (BHI) microdilution method was used to determine the Minimum Inhibitory Concentration (MIC), being tested at concentrations of 40, 10, 5, 2,5, 1,25, 0,625 and 0,312 mg/mL of the OEVG. The Minimum Bactericidal Concentration (MBC) was evaluated from the plating, in triplicate, on Tryptone Soy Agar (TSA). There was an inhibition zone of $12\pm 1,0$ mm and $13.33\pm 1,5$ mm for *S. aureus* and *P. aeruginosa*, respectively, when 10 μ L of pure OEVG was used. The MIC of the OEVG was verified at the concentration of 40mg/mL against *S. aureus*, however, at this same concentration, no bactericidal effect was observed. Despite the detection of the zone of inhibition, it was not possible to determine the MIC and MBC of the OEVG against *P. aeruginosa* species. Given the above, the OEVG has potential as a natural alternative to combat Gram-positive and Gram-negative bacterial species, with the need to carry out a study on its chemical characterization.

KEYWORDS: Essential oil; *Pseudomonas aeruginosa*; *Staphylococcus aureus*.