

**TITLE:** THE STABILITY STUDY OF ANTIBACTERIAL PROPERTIES OF THE RED PROPOLIS EXTRACT FROM ALAGOAS AGAINST *Staphylococcus aureus*

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**ABSTRACT:**

Red propolis has its botanical origin from *Dalbergia ecastophyllum*, commonly found in the Alagoas State mangrove region and has been the subject of scientific investigations due to its wide biological activity, especially antimicrobial. This research aim was to evaluate the antibacterial activity annual stability of six different red propolis hidroaloolic extract from the Alagoas State. Six samples were direct purchased from the local producers or local market. There were stored at controlled room temperature for the total time of the research, from April 2018 to April 2019. The antibacterial activity investigation was challenge by the *Staphylococcus aureus* (ATCC 25923) microorganism, according to the described CLSI methodology. For this, the used technique was by disc diffusion in Muller Hinton agar medium, with chloranphenicol being the positive control and 70% alcohol control of the diluent. The analyzes were performed in triplicate and then the plates were incubated for 24 h at 37 °C and the plate readings were performed as measurement of the halo inhibition obtained in millimeters (mm). The results were statistical analyzed by the BioEstat 5.3 software with application of the nonparametric test of Friedman's analysis of variance. The inhibition halos values obtained by the 2018 year samples A, B, C, D, E and F were, respectively, 12, 5, 7, 12, 8 and 10 mm, while in 2019, 8, 9.3, 10.6, 12, 10.6, 13.33 mm. Although sample performance by the annual analysis, in relation to the microorganism tested, presented a numerically different mean diameter. It was verified that there is no significant statistical difference between the datas. This demonstrates that the samples showed to be effective against *Staphylococcus aureus* (ATCC 25923) and that within a year they maintained their stable antibacterial action.

**Keywords:** antibacterial activity, *apis mellifera*, propolis.