

Title: QUANTITATIVE EVALUATION OF ANTIMICROBIAL ACTIVITY FROM EXTRACT OF ETHYL ACETATE OF YOUNG AND MATURE LEAVES OF *Syzygium cumini* L. (Skeels) AGAINST CLINICAL ISOLATES OF *Staphylococcus aureus*

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Abstract:

Staphylococcus aureus is the most common micro-organisms involved in the genesis of hospital infections as well as in community-acquired infections. Among the various species of plants used for medicinal purposes can be highlight the use of olive *Syzygium cumini* (L.) Skeels. The objective was to evaluate the MIC and MBC of crude extract of ethyl acetate of young and mature leaves of *Syzygium cumini* (L.) Skeels against clinical isolates of *Staphylococcus aureus*. Samples of young and mature leaves of olive were collected at the Federal University of Pernambuco. 100g of plant sample were weighed and added 200 mL of Ethyl Acetate, the assembly subjected to the agitation for two hours, and this step performed by three consecutive times. After each extraction the material was filtered and the whole was evaporated. Clinical isolates of *S. aureus* most multidrug-resistant were used. The analysis of the plant activity was determined by MIC in multiwell plates. The extracts were fully dissolved in DMSO to form a homogeneous mixture at 20,000 µg/ mL. Suspensions of the microorganisms were standardized according to the scale tube 0.5 of MacFarland. The plate was incubated for 18 hours. After the incubation period, the MIC value was determined in the concentration of the last well where no visible turbidity. From this well were made semeios on plates with Agar Mueller Hinton, to establish the MBC. The MIC values of the ethyl acetate extract of young leaves ranged from 125 to 500 µg/mL. Four strains of which three ORSAs were inhibited at a concentration of 125 µg / mL. The MBC values ranged 250-1000 µg / ml, with a strain (positive D test) inhibited in a concentration of 250 ug / ml. The MIC values of extracts of mature leaves against the isolated ranged from 250 to 2000 ug / ml, while the values of MBC 500 to > 2000 ug/ml. It can be concluded that the ethyl acetate extracts of young and mature leaves have active principles that inhibit multidrug-resistant bacteria, however these principles are longer present in young leaves than in mature leaves.

Key words: antimicrobial activity, *Staphylococcus aureus*, *Syzygium cumini*