

**Title: ANTIMICROBIAL POTENTIAL OF PLANT EXTRACTS FOR USE IN FOODS**

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**Abstract:**

The search for alternative antimicrobial agents extracted from plants has been of great interest in recent decades. In vitro susceptibility testing for microorganisms is of great importance to check its resistance. The objective of this study was to analyze the potential of freeze-dried fruit pulp extracts in vitro antimicrobial activity with application prospects in food preservation. Pulp sapodilla and persimmons "chocolate" were used in mature stage, dried by freeze-drying process. Drying of the previously frozen samples was carried out in the lyophilizer for 48 hours. The samples were conditioned in the absence of light. Chemical characterization of analysis (pH, acidity, soluble solids and phenolic compounds) and microbiological analyzes (antimicrobial activity in vitro with *Escherichia coli* and *Staphylococcus aureus*). Extracts were prepared by dissolving in water at a concentration of 5.0%. The technique used was diffusion discs. Suspensions of the microorganisms were diluted conveniently inserted to the plates containing the culture medium Miller Hilton solid state. The dilution factors were adjusted according to the turbidity of 0.5 McFarland scale ( $10^8$  CFU/mL) and then bacteria were diluted 1: 1000 for use in antimicrobial activity test by following the recommendations of the National Committee for Clinical Laboratory Standards. During testing, the paper discs of 20 mm<sup>2</sup> equivalent area, received 20 uL of solutions of the extracts. After the incubation period readings were made visually observing halos of growth inhibition in millimeters and quantified with the aid of digital caliper. The tests were performed in triplicate with negative and positive control. The results of chemical analyzes indicate average content of acid and high levels of phenolics. The results of the antimicrobial activity to *E. coli* and *S. aureus* reflects the positive effect of the prepared statement, submitted by test inhibition zone. The phenolic compounds present in the watery extract may be responsible for the antimicrobial action presented in this study. Thus, the natural extract can be analyzed in the food processing area aimed at their conservation.

**Key-words:** fruit pulp, *E. coli*, *S. aureus*.