

**TITLE:** SCREENING OF LACTIC ACID BACTERIA OF AÇAÍ (*Euterpe oleracea*) FOR PRODUCTION OF BACTERIOCIN-LIKE INHIBITORY SUBSTANCES

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**ABSTRACT:**

Açaí is the fruit of a palm tree widely distributed in the Amazon region and has a high microbial load that favors the fruit fermentation process. There are specific studies to investigate the production of antimicrobial substances of biotechnological interest from microorganisms present in açaí fruit, which can result in increased value to the fruit. Since food safety has become an increasingly international concern, the application of bacteriocins that target food pathogens without adverse toxic effects have received great attention. The objective of this work was to isolate bacteria from açaí, identify the antimicrobial activity of the isolated bacteria, and characterize the extracts of these bacteria as pH, temperature, stability and action spectrum. The selected fruits were collected in Combu Island and Abaetetuba, State of Para, Brazil. These followed for asepsis and pulp removal and the dilutions were inoculated in MRS agar and isolated for analysis. The antagonism *in vitro* was performed with the technique of spot-on-the-lawn revealing against three bacteria: *Corynebacterium sp.*, *Listeria monocytogenes* and *Bacillus cereus*; and with the well diffusion technique. These extracts were characterized for thermal stability (121 °C / 15 minutes), enzyme sensitivity to trypsin and pH neutralization. Of the thirty-nine bacterial isolates, it was observed antagonistic activity in nineteen of them. Of these, it was possible to observe that twelve showed extracellular antagonist activity. Four extracts showed sensitivity to trypsin, indicating that these may be bacteriocins. Neutralized extracts showed no activity, which indicates better activity at acid pH. Most of the extracts showed activity after being autoclaved, which may be an indication that the extracts have bacteriocins in Classes I and II. This work shows that bacteria isolated from açaí have potential for the production of antimicrobial substances.

**Key words:** Açaí, *Euterpe oleracea*, Antimicrobials, Bacteriocins, Lactic acid bacteria.

**Development Agency:** Fundação Amazônia Paraense de Amparo a Pesquisa – FAPESPA;

Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - CAPES.