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BIOPROSPECTING OF NATIVE SPECIES FROM THE BRAZILIAN CAATINGA AND CERRADO FOR THE DEVELOPMENT OF MICROEMULSIONS WITH ANTIOXIDANT POTENTIAL.

Micaela Sousa Coutinho Silva[1*], Catarina Silva Guimarães[2], Paulinne Moreira Lima[2], Maria Alice Sousa Marinho[2], Jayne Ferreira da Silva Oliveira[2],Yolanda Trindade de Oliveira[2], Isabela Dias dos Santos[1], Lara Beatriz de Andrade Silva[1], Gabriel Azevedo de Brito Damasceno[1,2] , Juliano Geraldo Amaral[1,2].

micaela.coutinho@ufba.com

1-Instituto Multidisciplinar em Saúde, Campus Anísio Teixeira, Universidade Federal da Bahia, Vitória da Conquista, Bahia, Brazil. 2-Programa de Pós-Graduação em Biociências, Campus Anísio Teixeira, Universidade Federal da Bahia, Vitória da Conquista, Bahia, Brazil.

Brazil, with its vast biodiversity combined with the demand for sustainable alternatives, has driven the research and development market. Licuri (*Syagrus coronata*), a palm tree native to the Brazilian semiarid region, is a species with notable biotechnological potential. Similarly, pequi (*Caryocar brasiliense* Camb.), widely found in the Cerrado, is composed of bioactives that confer antioxidant and emollient properties. Although the peel and outer mesocarp constitute a large part of the fruit, they are still considered waste with potential for use. Plant-based active ingredients have been widely used in microemulsions due to their advantages: increased skin permeability, sensory properties, and formulation stability. Therefore, this study aimed to develop microemulsions using the spontaneous emulsification method, using *S. coronata* kernel oil as the oily phase, supplemented with the aqueous extract of C. brasiliense residue. The species were registered in the National System for the Management of Genetic Heritage and Associated Traditional Knowledge (SisGen) under registration AFD6D69. The C. brasiliense extract was obtained by ultrasound-assisted extraction and tested for total flavonoid content and *2,2-diphenyl-1-picrylhydrazyl* (DPPH) radical scavenging capacity, showing antioxidant activity of 84.62% and a total flavonoid content of 93.36 µg EQ/mg. A pseudoternary phase diagram delimited the regions with macroscopic aspects typical of microemulsions, defining the relationships between the oil phase (*S. Coronata*) and the emulsifier (*Hydrogenated Castor Oil PEG-40 and Sorbitan Oleate*). The formulations were subsequently subjected to the freeze-thaw cycle and accelerated stability. Among the analyzed formulations, the selected one presented parameters such as mean particle diameter (MAD) of 38.83 nm, polydispersity index (PDI) of 0.230, and zeta potential (ZT) of |24 mV|, values considered satisfactory for the incorporation of *C. brasiliense*. extract at 0.1%. The formulation demonstrated stability even after subjection to thermal stress, demonstrating its potential. The incorporation of pequi residue conferred multifunctional properties, in agreement with the nanostructured system..

Keywords: *Caryocar brasiliense*, *Syagrus coronata,* Microemulsion, antioxidant, pequi residue