SIAN
Simpósio de Alimentos e Nutrição

EFFECT OF ADDING BABASSU CAKE EXTRACT WITH NATURAL DEEP EUTECTIC SOLVENT (NADES) ON THE PROPERTIES OF BABASSU COCONUT MESOCARP FILM

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Babassu oil extraction produces coconut by-products such as babassu mesocarp (BM) and babassu cake (BC). The aim of this work was to evaluate the effects of adding BC extracts using three different combinations of NADES (choline chloride: sorbitol; choline chloride: citric acid or choline chloride: glucose) on the properties of BM films. NADES was prepared by the method of heating (60°C) and stirring (2 hours). For extraction, 5g BC were dispersed in 60 g NADES (NADES-sorbitol; NADES-citric acid or NADES-glucose) and 35g distilled water, kept in a water bath at 70°C for 18 hours, and then filtered to collect the supernatant. Different filmogenic solutions were evaluated: (1) control film (MB3) with 3g BM, 97g distilled water, and 30g glycerol per 100g BM, and (2) experimental formulations containing 5g BC-NADES (sorbitol, citric acid, or glucose), 3g BM, and 92g distilled water. Film-forming solutions were homogenized (30 min), heated (90°C/30 min), poured onto acrylic plates (0.30 g/m^2) and oven dried at 35°C (casting method). The MB3 had a tensile strength (TS), elongation at break (EB), and Young's modulus (YM) of 2.08 ± 0.25MPa, 17.46 ± 1.87%, and 1.14 ± 0.13 MPa, respectively. The moisture content (MC) was 20.29 ± 3.62% and the water solubility (WS) was 34.82 ± 2.32%. The addition of BC-NADES-sorbitol to the MB3 formulation increased the TS to 7.38 ±1.35MPa and decreased the EB to 3.06 ± 0.51% and the YM to 0.26 ±0.06MPa. The addition of BC-NADES-citric acid increased the EB to 29.96 ± 5.93%, while the YM decreased to 0.07 ± 0.01 MPa. The formulation with BC-NADES-glucose only

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altered the YM to 0.56 ± 0.1 MPa. The MC and WS of the MB3 formulation were not affected by the addition of NADES-extracts. The properties of the films are influenced by the NADES composition. This study is ongoing.

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