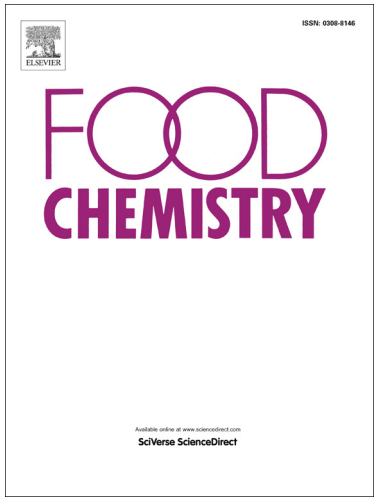

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Obtaining a protocol for extraction of phenolics from açaí fruit pulp through Plackett–Burman design and response surface methodology

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ABSTRACT – This work aimed to obtain a simplified extraction protocol for simultaneous achievement of total anthocyanin and total phenolic in açaí pulp using a 3-step optimization approach. First, a Plackett–Burman 20 was applied in 16 independent variables selected in literature. Secondly, seven factors pre-selected in the first screening were reassessed using a Plackett–Burman 12. Then, four selected factors; solid/solvent ratio (g:mL), acetone concentration (%), time of extraction in acidified ethanolic solution (min) and ethanol concentration (%) were optimized using a central composite design with response surface methodology. In addition, the optimized protocol were compared with two standardized extraction procedures assessing açaí and grape pulps. The optimized method is effective for the simultaneous extraction of total phenolics and total anthocyanins, allowing representative measurements of free radical-scavenging capacity (DPPH) and trolox equivalent capacity (TEAC) of grape and açaí pulps, with savings of time and reagents, moreover, avoiding the use of methanol.

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