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Chemical evaluation of sapucaia lecythis pisonis camb oil obtained from different extraction systems

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The lipid wealth of Sapucaia nuts, an Amazon oleaginous fruit, is the goal, and the possible difference from chemical characteristics, quality, nutritional profile, and thermal stability parameters between oils obtained through different extraction methods (petroleum ether and supercritical CO₂). The fatty acid profiles were analyzed through gas chromatography (GC), a thermogravimetric analysis (TGA/DrTGA) under temperature ranging from 20 to 800°C and infrared spectrometry. The oil showed an average yield of 57.50% in the form of solvent extraction and the form of extraction with CO₂ supercritical state in the parameters of 300 bar, 350 bar and 400 bar were on average respectively of 58.47%, 57.81% and 63.86%. The analyzed fatty acids profile showed the presence of important fatty acids, mainly for the omegas 3, 6 and 9. Quantitatively, few alterations were correlated with lipid extractions through reagents and extraction through supercritical CO₂ showed highlighting its functionality based on the levels of fatty acids. The thermogravimetric curves indicated that the decomposition of oil starts around 350°C with successive degradation, requiring better visualization of these stages. The derivative thermogravimetric was performed presenting accentuated degradation in the 400°C range. The infrared spectra presented accentuated spectral ranges in the characteristic region of groups such as, methyl esters and triglycerides, primary amines, long-chain fatty acids, among others. Data shows the high nutritional and functional quality and good thermal stability of Sapucaia oil suggesting that the supercritical CO₂ extraction maintains the integrity of lipid composites. It is the raw material for future industrial applications.

Biography

S C S Lannes is working as an Associate Professor at Pharmaceutical Sciences School of University of Sao Paulo. She is the President of Brazilian Society of Food Science and Technology, and Vice-president of Brazilian Association of Rheology. She has published papers in reputed journals, book chapters, and has been serving as Editor in Chief of *Food Science and Technology-CTA Journal*. She develop research works in the Food Science and Technology area, on the following subjects: rheology, physics of foods, development of special and nutritional food formulations and study of fat foods (emulsion, chocolate products, cupuassu, mayonnaise, ice cream and bakery).

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