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Additives based on *Dalbergia subcymosa* Ducke and *Croton cajucara L.*: Chemical characterization and study of food's application

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The application of vegetable extracts in food presents a high potential to be explored since there is an increasing demand for the substitution of synthetic food additives by natural ones since synthetic additives are associated with degenerative diseases such as cancer. Based on that, this present work aimed to study the application of the species *Dalbergia subcymosa* Ducke and *Croton cajucara L.*, native plants of the northern region of Brazil that already have their therapeutic uses, as to their potential uses as food additives, target at the inhibition of lipid oxidation and proliferation of microorganisms. For this, the extracts of these plants were characterized

quantitatively in search of secondary metabolites such as phenols and flavonoids for the evaluation of in vitro antioxidant and antimicrobial activity. DPPH free radical sequestration assays according to the methodology of Brand-Williams, 1995 and the reduction of phosphomolybdenic complex proposed by Pietro et al., 1999, proposal for Pietro et al., 1999, were carried out to determine the antioxidant activity using the synthetic antioxidant butyl hydroxytoluene (BHT) as a positive control in the DPPH radical test and the treatment without addition of antioxidant as negative control, making the statistical comparison of the antioxidant BHT with the natural antioxidant aiming the application in dairy foods. The antimicrobial activity was determined through the disk diffusion test and microdilution technique, with bacteria and fungi of interest in the food industry. The results on phenolics and total flavonoids were positive, with an optimum extraction point in the range of 70 to 80%, the results against DPPH radical and reduction of the phosphomolybdenic complex were positive for

antioxidant activity. The tests for the evaluation of antimicrobial activity were carried out according to a methodology proposed by Sarker et al., 2017. It started for two bacteria, one gram-prone (*Staphylococcus aureus*) and one gram-negative (*E. coli*). Considering that two more bacteria were tested against the resazurin cytotoxicity assay, however, the extract solution did not inhibit microbial growth. The sensory and microbiological analysis will be proposed for the adequacy of the food to the norms, generating the perspective of consumption more conscious and healthy.

Biography

Vaneska Aimee Paranhos Lamarao holds a degree in Chemical Engineering from the State University of Amapa (2015). Currently a Professor at the State University of Amapa (UEAP) and postgraduate in Management and Teaching of Higher Education from FATECH and is studying for a Master's Degree Program in Pharmaceutical Sciences at the Federal University of Amapa (UNIFAP 2017/2019). Have experience in Chemical Engineering, with an emphasis in Chemical Engineering, working mainly on the following topics: method validation, quality control, quantification of flavonoids, total flavonoids, oxidative stress, and Fenton reaction

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