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Optimization of the extraction process for quality control of essential oils obtained from the fruit of *Pterodon emarginatus* (Fabaceae) occurrent on Brazilian Savana

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The *Pterodon emarginatus* species (Fabaceae) is popularly known as “White Sucupira” or “Faveiro” that grows on Brazilian Savana. Under Brazilian folk medicine, its fruits are used mainly for their anti-nociceptive properties, anti-inflammatory, antimicrobial and antioxidant. Fruit's oil and extracts of bark and stems have antimicrobial, anti-inflammatory, analgesic, anti-rheumatic and help control diabetes. Thus, it is used on the treatment of muscle aches, sprains, arthritis and arthrosis. In the Midwest region, the population takes stem bark's tea for gynecological infections. The reference method for the extraction of essential oil is by Clevenger apparatus and the hydro-distillation enhanced by microwave method to be tested and potentially replaceable. The goal was to optimize the essential oil extraction technique of the fruits of Sucupira by irradiation of microwave and characterize the volatile compounds with a view to quality control and species identification. The fruits of Sucupira were subjected to oil extraction second literature's protocols. The process conditions were established in Delineation Central Composite Rotational (CCRD) and the results were evaluated by applying Response Surface Methodology (RSM). Waste analysis was performed at 95% confidence limit ($p < 0.05$), which consisted of the significance test of model fit, based on the Analysis Of Variance (ANOVA). Reaction time and moisture conditions were standardized for these analyses. Under these conditions, the yield is 6.6% which sets the optimum adaptation of procedures to the model. So our objective of optimizing the extraction method was hit. The results are important to contribute to establishment of quality control parameters of this drug and also getting less time saving energy and solvents which puts us in line with green chemistry.

Biography

Vila Verde G M has completed his PhD in 2011 and her Postdoctoral studies in Molecular Biology from the Federal University of Goiás in 2014. She is currently a Professor of Pharmacognosy at the State University of Goiás and Collegiate Member of two 'Sensu strict' master's courses as molecular sciences and territories and cerrado cultural expressions. Her researches have emphasis on ethnobotany, phytochemistry, quality control, extraction of compounds by irradiation of microwave and biological assays of Savana's medicinal plants specially Erythroxylaceae and Fabaceae. She is also a Member of the multidisciplinary network for sustainable production Animal Pro-Midwest, Brazil, focusing on optimization and extraction of organic compounds for the development of bio-products.

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