

**FATTY ACID PROFILE IN MACAUBA (*Acrocomia aculeata*) KERNEL OIL COLD-PRESSED FROM CERRADOS AND PANTANAL BIOMES, MATO GROSSO DO SUL STATE, BRAZILIAN****ÂNGELA ALVES NUNES^{1,4}; GIULIA RODRIGUES STRINGHETTA²; DANIELI FERNANDA BUCINI^{1,4}; SIMONE PALMA FAVARO⁵; RUY DE ARÚJO CALDAS³; CRISTIANO MARCELO ESPINOLA CARVALHO^{4*}**¹ Post-Graduate Program in Biotechnology and Biodiversity Pro-Midwest Network, Federal University of Mato Grosso do Sul/UFMS, C.P. 549, Campo Grande, MS.² Undergraduate Student Biomedicine, University Católica Dom Bosco/UCDB, C.P. 369, Campo Grande, MS.³ Visiting Professor, University Católica Dom Bosco - UCDB, C.P. 369, Campo Grande, MS.⁴ Post-Graduate Program in Biotechnology, University Católica Dom Bosco/UCDB, C.P. 369, Campo Grande, MS. *Advisor⁵ Embrapa Agroenergia, PqEB W3N, Brasília, DF, Brazil

Introduction: Diabetes mellitus (DM) is a group of multifactorial metabolic diseases, characterized by high blood glucose; defect of insulin secretion and/or in its signal transduction pathways. To treat T2DM patients several approaches have been used in the medical clinic such as adequate diet, physical exercises, and healthy lifestyle and in the more severe cases the use of hypoglycemic drugs. Biodiversity has provide sources for folk's medicines which have demonstrated potential for the treatment of diabetes, thus, there is an increasing need to search for more natural antidiabetic agents from the traditional medicine. The Brazilian palm (*Acrocomia aculeata*) is an endemic species in the Cerrados and Pantanal biomes and it is a traditional staple food in the State of Mato Grosso do Sul. The fruits provide kernel oil which has high concentration of medium chain fatty acid (MCFA). Based on biochemical and nutritional evidences, the medium chain fatty acid has different metabolic and physiological properties from long chain fatty acid. **Aim:** The objective of the present study is determined the fatty acid composition of macauba kernel oil cold-pressed expeller press.

Material and methods: The fatty acid methyl ester (FAME) composition was determined after converting the oil to fatty acid methyl esters [1]. The samples were injected into a GC flame ionization detector (FID) (Agilent 6890N, California) to obtain individual peaks of fatty acid methyl esters. **Results and discussion:** The macauba kernel oil is rich in saturated fatty acid representing 75.63%, medium chain fatty acids (MCFA) represents tree fourth of the total saturated fraction 56.46%, lauric acid (C12:0) is the major fraction corresponding to 45.40%, with minor contents of capric acid (C10:0) 4.78% and caprilic (C8:0) 6.28% (Table 1). Most palm kernel oils investigated has predominance of lauric acid, in palm tree, coconut and babassu [2]. **Conclusions:** In conclusion, in the present study showed the predominance of large contents of medium chain fatty acids and mostly lauric acid.

Table 1. Fatty acid profile (%) the macauba kernel oil.

Fatty acids (%)	Macauba Kernel Oil
Caprilic, C8:0	6.28 ± 0.14
Capric, C10:0	4.78 ± 0.04
Lauric, C12:0	45.40 ± 0.17
Myristic, C14:0	9.50 ± 0.05
Palmitic, C16:0	6.88 ± 0.01
Stearic, C18:0	2.65 ± 0.01
Arachidic, C20:0	0.14 ± 0.01
Oleic, C18:1 (ω 9)	24.05 ± 0.10
Cis-11-eicosenic, C20:1	0.12 ± 0.00
Linoleic, C18:2 (ω 6)	3.02 ± 0.03

Means were determined in duplicate. Data are presented as mean ± SD

References:

[1] Nunes A. A, Favaro S. P, Galvani F, Miranda C. H. B. Eur J Lipid Sci Tech. 2015;117 (12):2036-43.

[2] Codex Alimentarius. Standards for Fats and Oils from Vegetable Sources. Codex Alimentarius-Stan 210. 1999. <http://www.fao.org/docrep/004/y2774e/y2774e04.htm#TopOfPage> 26/02/2017.**Key-words:** Diabetes mellitus; fatty acid methyl ester; medium chain fatty acids.**Acknowledgment:** CAPES, FUNDECT, UFMS, UCDB.