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<AT>Assessment of subcritical propane, ultrasound-assisted and Soxhlet extraction of oil from sweet passion fruit (*Passiflora alata* Curtis) seeds

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**<ABS-HEAD>Abstract**

<ABS-P>This study reports the results of subcritical propane (SubFE), ultrassound-assisted and Soxhlet extraction of sweet passion fruit (*Passiflora alata* Curtis) seed oil cultivated under organic system in terms of extraction yield, refractive index, density, acid value, fatty acid composition, tocopherol content, antioxidant activity and oxidative stability. SubFE higher extraction yield (23.68%) was obtained at 60 ºC/2 MPa with an extraction efficiency of 84 % compared to Soxhlet extraction using *n*-hexane. Major values of unsaturated fatty acids were obtained by SubFE at 60 ºC/2 MPa (86.36 %). Samples obtained by Soxhlet extraction using *n*-hexane and SubFE at 60 ºC/2 MPa showed higher tocopherols contents. Thermogravimetric analysis indicated a high resistance to oxidation for all extraction methods evaluated. Therefore, the results obtained demonstrated that the oil obtained can be considered as new sources of natural antioxidant and it has a potential as a raw material for edible products, chemical and pharmaceutical industries.
<KWD>Keywords: *Passiflora alata* Curtis; oil seed extraction; propane; ultrasound-assisted extraction.

<H1>1. Introduction
Passion fruit species belonging to the Passifloraceae family are mostly native to the Latin America. The sweet passion fruit (*Passiflora alata* Curtis), vernacular name ``maracujá-doce", is an edible type of passion fruit native to the Brazilian plateau and the eastern Amazon region, but it is cultivated in only low-intensity farming in South and Southeast of Brazil [1]. It is appreciated for its characteristic aroma and flavor and typically consumed fresh due to its sweet taste.
Although the sweet passion fruit is mainly marketed *in natura*, there are some industries in Brazil manufacturing sweet passion fruit juice for specific applications. The product obtained from such processing are not traded directly to the consumer but are marketed to industries in fruit preparation forms and applied in their final products, such as dairy drinks, yogurts, desserts among others.