



Yield and chemical characterization of *Aloysia gratissima* (Gillies & Hook.) Tronc. essential oil under different drying temperatures

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ABSTRACT: The *Aloysia gratissima* belongs to Verbenaceae family, popularly known as "holy herb" or "Brazilian lavender"¹. The vast majority of studies concentrate on *A. gratissima* oil analysis aiming their use in the perfume industry². However, in the literature there is no research on post-harvest processing or about the yield of its essential oil after different drying temperatures. Thus, this study aimed to evaluate the yield and chemical characteristics of essential oil of *A. gratissima* submitted to drying temperatures of 40°C, 50°C and 70°C.

MATERIAL AND E MÉTHODS: The species *A. gratissima* was grown in the experimental field of the Multidisciplinary Center for Chemical, Biological and Agricultural (CPQBA), State University of Campinas (Unicamp), located in Paulínia, Brazil. Fresh material was collected at the end of October, after its flowering, and submitted to manual cleaning process for separating the leaves branches and other impurities. For each treatment were weighed approximately 750 g of fresh leaves and dried at 40°, 50° and 70° C until constant weight. After drying the material, about 50 g of dried leaves were subjected to hydrodistillation separately in a Clevenger-type apparatus for 2 h, in triplicate and analyzed by gas chromatography coupled with mass detection (GC-MS). In each treatment was quantified % humidity, in triplicate, dried on air circulation oven at 105 ° C for 24 hours. By the gravimetric method, it was possible to determine the mass of water in the samples and thus determine the essential oil yield.

RESULTS E CONCLUSION: In all treatments it was possible to verify a significant variation in the percentage values of moisture content (Table 1). There was no significant difference in the relative percentage of the chemical constituents of the essential oils among the treatments.

Table 1. Percentage humidity and yield in essential oil of *A. gratissima* at different drying temperatures.

Temperatures	Humidity (%)	Yield (%)	Chemical profile (Relative %)
40°C	13,96 a	1,91 a	6,0 a; 11,6 b; 7,7 c; 4,3 d; 5,8 e; 3,6 f; 6,1 g; 2,5 h; 13,3 i; 6,2 j
50°C	9,19 b	2,00 a	8,7 a; 11,2 b; 7,7 c; 4,6 d; 5,0 e; 3,4 f; 6,0 g; 2,6 h; 13,2 i; 5,8 j
70°C	8,42 c	2,18 a	6,0 a; 10,2 b; 8,0 c; 3,8 d; 5,0 e; 3,2 f; 5,7 g; 2,7 h; 14,5 i; 6,1 j

(a) beta pinene; (b) trans pinocamphone; (c) trans pinocarveyl acetate; (d) trans cariofilene; (e) germacrene D; (f) biciclogermacrene; (g) germacrene B; (h) óxido de cariofilene; (i) guaiol; (j) bulsenol.

In this work we can see that at 70 ° C was the higher content in essential oil yield. Rahimmalek And Goli (2013) found similar results when submitting *Thymus subsp. daenensis*. Celak in different drying treatments. At higher temperatures (microwave and oven 70 °C), the authors had higher levels of thymol and carvacrol, main constituent of the species under study³.

REFERENCE

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