

Influence of the intermittent drying method on the yield and quality of the essential oil of *Schinus terebinthifolius* Raddi

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Schinus terebinthifolius Raddi. is known as “aroeira”, “aroeirinha” or rose pepper (1). In folk medicine, leaves, fruits and bark are used as anti-inflammatory agent (2), in the treatment of urinary and gynecological infections (3,4), respiratory infections and ulcers (5), among others. To ensure the supply of raw material of phytochemical quality for the pharmaceutical industry, the medicinal species need to be dried (6). However, the continuous supply of high temperature air may cause degradation of the active principles of medicinal interest (7). Thus, the objective of this work was to evaluate the influence of the application of different intermittent ratios on drying, yield and quality of the essential oil of *Schinus terebinthifolius* Raddi fruits. The fruits were dried at 50, 60 and 70 °C; continuous drying and 3 intermittent relationships (10:20 (10 minutes drying and 20 minutes at rest); 15:15 (15 minutes drying and 15 minutes at rest) and 20:10 (20 minutes drying and 10 minutes at rest). The rest period was the time the samples were out of the dryer. The essential oil was extracted by hydrodistillation. Gas chromatography was used to identify and quantify the chemical constituents of the essential oils. At 50 and 60 °C, the 10:20 ratio resulted in a lower drying time, reducing it by 29.2 and 23.3%, respectively, when compared to continuous drying. At 70 °C, the drying time did not differ between the evaluated treatments. As for the essential oil yield, at 50 °C, only the 20:10 ratio promoted reduction in yield, when compared to continuous drying. Already at 60 °C, all the intermittent ratio showed loss in yield. At 70 °C, there was no significant difference. No changes were observed in relation to the qualitative analysis of the essential oil between the applied treatments, with α -phellandrene being the major compound in all evaluated treatments. Therefore, the intermittent ratio that promoted the greatest reduction in drying time, higher essential oil yield and high concentration of α -phellandrene was 10:20, at 50 °C.

1. El-Massry et al., Journal of Agricultural and Food Chemistry, 2009, 57, 5265–5270.
2. Rosas et al., Journal of Ethnopharmacology, 2015, 175, 490–498.
3. Uliana et al., Industrial Crops and Products, 2016, 83, 235–240.
4. Dannenberg et al., Innovative Food Science and Emerging Technologies, 2016, 36, 120–127.
5. Carlini et al., Revista Brasileira de Farmacognosia, 2010, 20, 140–146.
6. Mujumdar, A.S. 4 th ed. CRC Press, New York, 2015.
7. Jin et al., Food Engineering Reviews, 2018, 10, 34-45.

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