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## INFLUENCE OF EXTRACTION METHODS ON CARAWAY (*Carum carvi* L.) ESSENTIAL OIL YIELD AND CARVONE/LIMONENE RATIO

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### Abstract

The caraway (*Carum carvi* L.) samples were collected from little meadows situated in Harghita Mountain (Mădăraș Ciuc, Harghita Băi, Jigodin, Tușnadu Nou), where a relatively small area was covered by a group of rich populations of wild cumin. The harvested plants are dried by: a) convective laboratory dryer in thick layer, b) static outdoors in sunshine, and (c) static in a warm indoor place in darkness. The hand-picked seeds were separated from debris by sieving and elutriation. The essential oil was obtained with electrically heated Clevenger-type laboratory steam distillation equipment both with and without microwave pretreatment. The variation of the obtained essential oil volume in time was measured and the final yield was determined. For comparison the composition, supercritical fluid extraction of the caraway essential oil with carbon dioxide in a laboratory scale batch supercritical extractor was made. Each sample was analyzed by gas chromatography, following the influence of drying and extraction method on the carvone/limonene ratio. The investigation shows that the essential oil yield is around 7 mL/100 g, less in the case of green plant (6 mL/100 g) and higher in case of the mature plant (10 mL/100 g). The results show that by batch supercritical fluid extraction with CO<sub>2</sub> (at first purge) lowest carvone/limonene ratio was obtained.

*Key words:* caraway, essential oil, hydrodistillation, supercritical fluid extraction

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