

MESMAP-2 ABSTRACTS  
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**The Second Mediterranean Symposium on  
Medicinal and Aromatic Plants**

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ABSTRACT BOOK**

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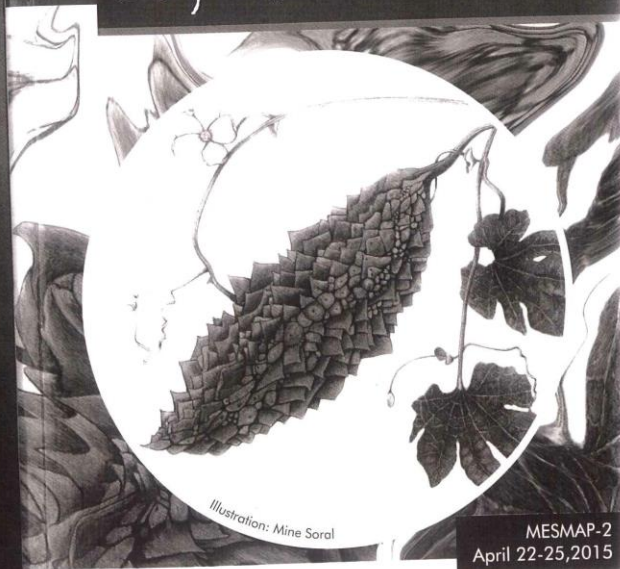


Illustration: Mine Soral

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**CHEMICAL COMPOSITION OF ESSENTIAL OILS OF WILD-GROWING *MENTHA PIPERITA* L AND *MENTHA SPICATA* L FROM THE MARIOVO REGION, REPUBLIC OF MACEDONIA**

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The genus *Mentha* (family Lamiaceae), comprising more than 25 species, grows widely throughout the temperate regions of the world. *Mentha arvensis*, *M. longifolia*, *M. piperita* and *M. spicata*, commonly known as menthol mint, wild mint, peppermint and spearmint, respectively, are frequently cultivated in many countries of Europe, East Asia, America and Australia for the production of essential oils. The essential oils and extracts from *Mentha* species have been in use since ancient times for the treatment of many digestive tract diseases, as well as, in cuisine.

*M. spicata* and *M. piperita* are the most abundant species of the genus *Mentha* which grow as wild crops mostly at the south parts of the Republic of Macedonia. The main goal of our study was evaluation of chemical composition of the essential oils obtained from the leaves of wild-growing *M. spicata* and *M. piperita* from the region of Mariovo, located at the farthest southern part of the Republic of Macedonia. The harvest of the plants was performed during July 2014. The essential oils obtained by hydro-distillation were analysed on ZB-5 MS column using a gas chromatograph with flame ionization detector (FID) and gas chromatograph with mass spectrometric detection (GC-MS). A total of 46 and 32 compounds in essential oils of *M. piperita* and *M. spicata*, respectively, were identified. The main constituents in the essential oils of *M. piperita* (>5%) were found to be oxygenated monoterpenes: menthol (34.3%), L-menthone (18.24%) and isomenthone (5.16%); followed by neoisomenthol (3.48%), pulegone (3.03%) and menthyl acetate (3.01%). The main constituents (>5%) in the essential oils of *M. spicata* were found to be oxygenated monoterpenes: carvone (61.4%) and 1, 8 - cineol (5.21%). Limonene (11.87%) was found to be the most abundant monoterpene hydrocarbon in *M. spicata* essential oil. In addition, the tested *Mentha* essential oils contained substantial amounts of various minor constituents, as sesquiterpene hydrocarbons ( $\beta$  - bourbonene and  $\beta$  - caryophyllene), as well, as oxygenated sesquiterpenes (caryophyllene oxide). The obtained results for chemical composition of essential oils of *M. piperita* and *M. spicata* were in line with some data reported in literature [1].

[1] Abdullah I Hussain, Farooq Anwar, Poonam S Nigam, Muhammad Ashraf and Anwarul H Gilanif, Seasonal variation in content, chemical composition and antimicrobial and cytotoxic activities of essential oils from four *Mentha* species, J Sci Food Agric 2010, 90 1827-1836