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## Anatomical and Phytochemical Differentiation of *Mentha* species

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The study of the present literature for pharmacognostical identification has shown that there is not enough information for the clear differentiation of *Mentha* species. There exist some data about chemical compounds and morphological aspects [1, 2] but proper anatomical descriptions are missing (except *M. × piperita*).

For this study 33 populations from 11 different *Mentha* species: *M. × piperita* (2), *M. spicata* (4), *M. × villosa* (5), *M. longifolia* (9), *M. × gentilis* (5), *M. rotundifolia* (1), *M. arvensis* (1), *M. aquatica* (1), *M. pulegium* (2), *M. × verticillata* (1) and *M. × gracilis* (2) were collected in 13 different places of Bosnia and Herzegovina (South Europe) and Slovakia (Middle Europe). GC analysis on its own showed to be not enough for a clear differentiation of the mints, but according to the main essential oil compound they can be divided into three larger groups (menthol-, carvon- and linalool-type). This investigation showed that microscopical data such as hair density (Figures 1–3: differentiation of 3 *Mentha* species according to hair density), different types of capitate glandular trichoms, the presence of the dendroid trichoms and quantitative parameters such as the width of the peltate glandular trichoms are as important as GC analysis and morphological data, and that only multivariate data analysis leads to proper identification and differentiation of the *Mentha* species.



Fig. 1. *M. × piperita* (left), Fig 2. *M. pulegium* (middle), Fig. 3. *M. longifolia* (right)

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- [2] Fischer MA, Oswald K, Adler W. *Mentha*. In: Exursionsflora für Österreich, Lichtenstein, Südtirol. 3<sup>rd</sup> edition. Biologiezentrum der Oberösterreichischen Landesmuseen, Linz, 2008, p. 798–800.