

PP48. Essential-oil composition of parsley and celery conventionally and organically grown in Vojvodina

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Celery (*Apium graveolens* L.) and parsley (*Petroselinum crispum* L.) are aromatic umbelliferous plants widely used as spices in the human diet due to the presence of essential oils. The chemical composition of the essential oils of aromatic plants can vary depending on the geographical origin, type of soil and agricultural practices [1,2].

In the present study, the influence of location (type of soil) and agricultural practices on the chemical composition of essential oils of parsley and celery leaf was investigated. The samples of both organically and conventionally grown plants were collected from different locations in the province of Vojvodina. The essential oil was isolated by hydrodistillation and then subjected to GC-MS analysis. Identification of chemical constituents was based on a comparison of their retention indices and mass spectra with spectral libraries and literature data. The main components of the essential oils obtained from parsley leaves were 1,3,8-menthatriene (22.8-50.9%), myristicin (12.8-36.8%), β -phellandrene (14.1-29.0%), and β -myrcene (1.4-12.7%). Celery leaf essential oils were mainly composed of β -phellandrene (41.7-72.6%), limonene (10.2-31.1%), and β -pinene (4.8-19.3%). The results obtained showed that there was no significant difference in the qualitative composition between the samples from different locations as well as between those grown in the conventional or organic way. On the other hand, the relative amount of particular compounds significantly varied between the samples in general, thus the correlation between their content and cultivation conditions or soil type could not be established.

In conclusion, the way of production has no specific effect on the qualitative composition of parsley and celery essential oils, although it can affect the relative quantity of their constituents.

References:

- [1] Figueiredo, A.C. et al., 2008. *Flavour Frag. J.* 23, 213–226.
[2] Edris, A.E. et al., 2003. *Flavour Frag. J.* 18, 345–351.

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