



Department of Biology and Ecology,
Faculty of Sciences and Mathematics
University of Niš
Institute for Nature Conservation of Serbia

ABSTRACTS APSTRAKTI

**14th Symposium
on the Flora of Southeastern Serbia
and Neighboring Regions**

Kladovo 26 to 29 June 2022

**14. Simpozijum
o flori jugoistočne Srbije
i susednih regiona**

Kladovo 26. do 29. jun 2022.

Niš-Belgrade, 2022

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Phytochemistry and Phytotherapy

Insight into the structure and chemistry of glandular trichomes of selected *Micromeria* and closely related *Clinopodium* species (Lamiaceae): the *in vitro* culture approach

Uzelac, B.¹, Budimir, S.¹, Stojičić, D.²

¹Department of Plant Physiology, Institute for Biological Research “Siniša Stanković” - National Institute of the Republic of Serbia, University of Belgrade, Bulevar despota Stefana 142, 11060 Belgrade, Serbia

²Department of Biology and Ecology, Faculty of Sciences and Mathematics, University of Niš, Višegradska 33, 18000 Niš, Serbia

* branka@ibiss.bg.ac.rs

Many of the species belonging to the Lamiaceae family are considered aromatic plants due to the presence of glandular trichomes, which have a distinct ability to synthesize, secrete or store large amounts of specialized metabolites that play a crucial role in mediating the plant – environment interactions. Secondary metabolites are biosynthesized as a defensive strategy of plants in response to natural perturbations, thus enabling them to adapt to the environmental stresses typical of each individual ecological niche. These compounds often have marked bioactive properties, rendering a commercial value to the plants that produce them. A number of biological effects have been associated with the main monoterpenoids detected in investigated *Micromeria* spp. and *Clinopodium* spp. essential oils. One alternative for the production of these bioactive metabolites is *in vitro* plant tissue culture. The present study was initiated to investigate the effects of *in vitro* culture on the secretion of leaf glandular trichomes, the main structures involved in the essential oil production. The glandular indumentum was studied by means of light microscopy and scanning electron microscopy in an attempt to correlate the phytochemical traits with the glandular trichome morphotypes of selected Lamiaceae species.

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