

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

**15th Symposium on the Flora of
Southeastern Serbia
and Neighboring Regions**
Niš, 23th to 25th May, 2025

Abstracts

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give a comparative overview of the stem anatomy of seven *Polygonum* s. str. taxa originating from 54 populations from the Central and Western Balkans and the Pannonian Plain and potentially provide new taxonomically significant characters. The shape of the cross-section is polygonal, with more or less prominent ribs. The epidermis is covered by a thick cuticle and comprises rounded or elongated cells with unevenly thickened cell walls. Stomata are rarely present, while trichomes are absent. Strands of sclerenchyma are present subepidermally in the rib zone. The cortex includes two to three layers of chlorenchyma cells and one layer of elongated starch sheath cells. The central cylinder consists of collateral vascular bundles arranged in a ring, with pericyclic fibers forming a cap above the phloem. Large parenchymatic cells with thin walls compose the medulla. Further research, which would include statistical analysis of quantitative anatomical characteristics of the stem, is necessary since it is not possible to distinguish taxa based only on the differences present in the description of the stem anatomy.

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Differences in inner bract shape in *Goniolimon* species (Plumbaginaceae)

Buzurović, U.¹, Đurović, S.², Niketić, M.^{3,4}, Milinković, M.¹, Buntić, A.¹, Knežević, M.¹, Tomović, G.⁵

¹Institute of Soil Science, Teodora Drajzera 7, 11000 Belgrade, Serbia

²Faculty of Agriculture, University of Niš, Kosančićeva 4, 37000 Kruševac, Serbia

³Natural History Museum, Njegoševa 51, 11000 Belgrade, Serbia

⁴Serbian Academy of Sciences and Arts, Serbia, Kneza Mihaila 35, 11000 Belgrade, Serbia

⁵Faculty of Biology, University of Belgrade, Takovska 43, 11000 Belgrade, Serbia

* *soilsbuzurovic@gmail.com*

Morphological and molecular studies of *Goniolimon* species in southeastern Europe and the Apennine Peninsula revealed the occurrence of six species: *G. besserianum*, *G. dalmaticum*, *G. heldreichii*, *G. incanum*, *G. sartorii* and *G. tataricum*. In addition to the morphological characteristics used as diagnostic characters to differentiate the species, we wanted to investigate whether the shape of

the inner bract can also be used for species delimitation. We analysed 138 individuals from 14 populations in the southeastern Europe. Canonical variates analysis (CVA) resulted in the categorization into five groups. Individuals of *G. heldreichii*, *G. dalmaticum*, *G. sartorii* and *G. tataricum* formed separate groups, while individuals of *G. besserianum* and *G. incanum* were grouped together. The changes in the shape of the inner bract, which contribute most to the differences between the species, are primarily associated with changes in the shape of the middle part (points 3 and 4) and the middle cusps (points 8, 9 and 10) of the inner bract. This study is an example of how geometric morphometrics can effectively address taxonomic problems in plant species, especially in distinguishing closely related species such as those within the genus *Goniolimon*.

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Nutlet characteristics of selected *Micromeria* Benth. taxa from the Balkan Peninsula and their taxonomical importance

Pavlović, M.M., Jovanović, M.D., Zlatković, B., Tošić, S.

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

* *milica.pavlovic2@pmf.edu.rs*

Traditionally, *Micromeria* represents a diverse and taxonomically complicated genus in the family Lamiaceae. The genus has a wide distribution, with the Mediterranean region being a center of its diversity. In this study, the nutlet shape, dimensions, and micromorphology of seven *Micromeria* taxa from the Balkan Peninsula were investigated to assess the potential taxonomic significance of these characteristics. The taxa included in the analysis were *M. croatica*, *M. cristata* subsp. *cristata*, *M. cristata* subsp. *kosaninii*, *M. graeca*, *M. juliana*, *M. longipedunculata*, and *M. myrtifolia*. The variability of quantitative (length and width) and qualitative characteristics (general shape, shapes of the apex and base) of the nutlets was examined using univariate and multivariate statistical methods. The results of descriptive statistics, univariate analysis of variance (ANOVA), and multivariate statistical analyses (CDA, AHC, MCA) have shown that the examined characteristics were statistically significant in the morphological differentiation. Moreover, multivariate analyses indicated a clear separation between *M. cristata* subsp. *cristata* and *M. cristata* subsp. *kosaninii* based on quantitative features.

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