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

13th Symposium on the Flora of Southeastern Serbia and Neighboring Regions

Stara planina Mt. 20 to 23 June 2019

13. Simpozijum o flori jugoistočne Srbije i susednih regiona

Stara planina 20. do 23. jun 2019.

ABSTRACTS
APSTRAKTI

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Abstracts

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Phenolic compounds are involved in desiccation tolerance of endemic resurrection species *Ramonda serbica* Panc.

Vidović, M., Morina, F., Milić-Komić, S., Veljović-Jovanović, S.

Institute for Multidisciplinary Research, Department of Life Science, University of Belgrade, KnezaViseslava 1, 11030 Belgrade, Serbia

**marija@imsi.rs*

Balkanic endemic plant species, *Ramonda serbica*, belongs to a small group of resurrection plants, since it is able to survive in an almost completely dehydrated state for months, and to fully recover metabolic functions upon watering. During drought and rehydration, reactive oxygen species increase presents an additional treat. In accordance, the increase of activities of the antioxidative enzymes, such as several superoxide dismutases and polyphenol oxidases in the critical first few hours of rehydration of *R. serbica* leaves was reported [1,2]. In fully hydrated leaves, the most abundant soluble phenolics were hydroxybenzoic acids (HBAs: p-hydroxybenzoic, protocatechuic, and syringic acid) and catechin. Among hydroxycinnamic acids (HCAs), caffeic acid was the major one, beside ferulic and chlorogenic acids. In addition, four flavonoids: apigenin, luteolin, cyanidin and delphinidin were identified as glycosides. Although *R. serbica* settles exclusively north-facing steep rocky sides, in the shade of the surrounding forest canopy, with reduced solar irradiance, 5-d-exposure to supplemental UV-B radiation significantly enhanced amounts of HBA derivatives and anthocyanins (2.6 and 5.7 folds, respectively), whereas flavon glycosides and most of HCA derivatives were unaffected. The physiological aspect of this UV-B stimulative effect, as well as the role of phenolic metabolism in cellular desiccation survival has to be explained.

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