



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

# ABSTRACTS APSTRAKTI

**14<sup>th</sup> Symposium  
on the Flora of Southeastern Serbia  
and Neighboring Regions**

**Kladovo 26 to 29 June 2022**

**14. Simpozijum  
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i susednih regiona**

**Kladovo 26. do 29. jun 2022.**

**Niš-Belgrade, 2022**

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Abstracts

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## **NMR metabolomics study of the desiccation and recovery process in the resurrection plants *Ramonda serbica* and *Ramonda nathaliae***

**Ivanović, S.<sup>1</sup>, Gođevac, D.<sup>1</sup>, Simić, K.<sup>1</sup>, Anđelković, B.<sup>2</sup>, Jovanović, Ž.<sup>3</sup>, Rakić, T.<sup>3</sup>**

<sup>1</sup>University of Belgrade - Institute of Chemistry, Technology and Metallurgy, National Institute of the Republic of Serbia, Njegoševa 12, 11000 Belgrade, Serbia

<sup>2</sup>University of Belgrade, Faculty of Chemistry, Studentski trg 12-14, Belgrade, Serbia

<sup>3</sup>University of Belgrade, Faculty of Biology, Studentski trg 16, Belgrade, Serbia

\* *stefan.ivanovic@ihtm.bg.ac.rs*

*Ramonda serbica* and *R. nathaliae* are resurrection plants that have the remarkable ability to survive the complete desiccation during periods of drought and rapidly revive when rewatered and rehydrated. To investigate metabolic changes during their desiccation and recovery process NMR-based metabolomics approach coupled with multivariate data analysis was utilized to identify the metabolomes of the plants from 90 biological replicates. The NMR metabolomics profiles of *R. serbica* and *R. nathaliae* were subjected to multivariate data analysis. PCA was performed, which resulted in eight principal components (PCs) in both models, explaining 77.0% of the total data variance in the model with *R. serbica* samples, and 79.5% of the variance in the model with *R. nathaliae* samples. Using NMR experiments, the content of the two most dominant polar components found in the leaves of these two plants was determined. Sucrose and the polyphenolic glycoside myconoside were predominant in almost equal amounts in all samples studied, regardless of their water content at sampling. Using of 1D and 2D NMR experiments the main components have been successfully identified. Also, it was necessary to isolate and purify the myconoside to confirm the structure.

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