

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

**13<sup>th</sup> 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**

**Niš-Belgrade, 2019**

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Faculty of Sciences and Mathematics, University of Niš  
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Abstracts

This Symposium is organized with the financial support of the Ministry of Education, Science and Technological Development of Republic of Serbia

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**Book of Abstracts**

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**Department of Biology and Ecology, Faculty of Science and  
Mathematics, University of Niš**

**Institute for Nature Conservation of Serbia**

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**Printed by**

Štamparija **Beograd**

**Number of copies**

200

## Changes in sclerenchyma cell walls related to stem twining in *Dioscorea balcanica*

Simonović Radosavljević, J.<sup>1</sup>, Mitrović, A.Lj.<sup>1</sup>, Bogdanović  
Pristov J.<sup>1</sup>, Radotić, K.<sup>1</sup>, Janošević, D.<sup>2</sup>

<sup>1</sup>Institute for Multidisciplinary Research, University of Belgrade, Kneza  
Višeslava 1, 11000 Belgrade, Serbia

<sup>2</sup>University of Belgrade, Institute of Botany and Botanical Garden  
„Jevremovac“, Faculty of Biology, Takovska 43, Belgrade, Serbia

\* *jasna@imsi.rs*

*Dioscorea balcanica* Košanin, family Dioscoreaceae, is an endemic, endangered liana species and a Tertiary relict of Balkan Peninsula. Gelatinous fibers, specialized sclerenchyma cells and well-known components of tension wood, are responsible for stem twining in liana plants. The aim of this investigation was to determine changes in sclerenchyma cell walls correlated with the twining process in liana plants. Our results showed that the differences in cell walls of sclerenchyma cells between straight and twisted internodes are not visible by light microscopy, but they are visible by SEM microscopy. In twisted internodes, cell walls of sclerenchyma cells in the region of contact with the support (“tension” side of twisted internodes) appear smooth on the cross sections, suggesting cellulose microfibrils oriented almost parallel to the fiber axis. In contrast, cell walls of the entire ring of sclerenchyma cells in straight internodes, as well as cell walls of sclerenchyma cells on the “opposite” side of twisted internodes, appear jagged on the cross sections, suggesting cellulose microfibrils oriented at very high microfibril angle to the fiber axis. This result suggests that gelatinous fibers in *D. balcanica* stem have lignified G-layer, and thus could contribute to the understanding of “late lignification of the G-layer”.

**Acknowledgements:** This work was supported by: the grants 173017, III45012 and 173015 of the Ministry of education and science of the Republic of Serbia