BOOK of ABSTRACTS

4th INTERNATIONAL CONFERENCE ON PLANT BIOLOGY

(23rd SPPS Meeting)

6-8 OCTOBER 2022
BELGRADE

Serbian Plant Physiology Society

Institute for Biological Research "Siniša Stanković"
National Institute of Republic of Serbia, University of Belgrade

Faculty of Biology, University of Belgrade

BOOK OF ABSTRACTS
4th International Conference on Plant Biology

(23rd SPPS Meeting)

Belgrade, 2022

CIP - Каталогизација у публикацији - Народна библиотека Србије, Београд

581(048)

INTERNATIONAL Conference on Plant Biology (4 ; 2022 ; Belgrade)

Book of Abstracts / 4th International Conference on Plant Biology [and] 23rd SPPS Meeting, 6-8 October 2022, Belgrade ; [organized by] Serbian Plant Physiology Society [and] Institute for Biological Research "Siniša Stanković", University of Belgrade [and] Faculty of Biology, University of Belgrade ; [editor Milica Milutinović]. - Belgrade : Serbian Plant Physiology Society : University, Institute for Biological Research "Siniša Stanković" : University, Faculty of Biology, 2022 (Zemun : Alta Nova). - 169 str. : ilustr. ; 24 cm

Tiraž 30. - Registar.

ISBN 978-86-912591-6-7 (SPPS)

1. Društvo za fiziologiju biljaka Srbije. Sastanak (23 ; 2022 ; Beograd)

a) Ботаника - Апстракти

COBISS.SR-ID 74996233

4th International Conference on Plant Biology
(23rd SPPS Meeting)
6-8 October, Belgrade

Publishers	Serbian Plant Physiology Society
	Institute for Biological Research "Siniša Stanković" – National Institute of Republic of Serbia, University of Belgrade
	Faculty of Biology, University of Belgrade
Editor	Milica Milutinović
Graphic design	Dejan Matekalo
Prepress	Marija G. Gray
Printed by	Alta Nova, Zemun
Print run	30 pcs
	Belgrade, 2022

Suported by the Ministry of Education, Science, and Technological Development of the Republic of Serbia

The role of the sink tissue in variegated *Pelargonium zonale* under excess excitation energy pressure: morphologic, photosynthetic and metabolic study

PP2-21

Dejana Milić, Ana Pantelić, Bojana Banović Đeri, Jelena Samardžić, Marija Vidović

(dmilic@imgge.bg.ac.rs)

Institute of Molecular Genetics and Genetic Engineering, Laboratory for Plant Molecular Biology, University of Belgrade, Vojvode Stepe 444a, 11042 Belgrade, Serbia

In the global warming era, we are facing extreme changes in environmental conditions such as high and low temperatures, high light and ultraviolet radiation intensity, as well as drought and increased CO_2 levels. The effects of these factors on plants are often interrelated and usually result in a disturbed balance between the amount of energy received and the ability to process it. In order to balance energy input and prevent photooxidative damage, plants have evolved multiple mechanisms for energy dissipation and photoprotection. To efficiently dissipate the excess excitation energy (EEE), the additional electron sinks, such as photorespiration, biosynthesis of phenolics and nitrate reduction are stimulated. Variegated leaves of *Pelargonium zonale* have been proven to be a suitable model system for examining 'source–sink' interactions within the same leaf, providing the same microenvironment conditions, unlike common root-shoot studies. The aim of our study was to investigate carbon and nitrogen reallocation between photosynthetically active (green leaf sectors) and photosynthetically inactive (white leaf sectors) under EEE pressure induced by low temperature in combination with high light intensity. Besides the amino acids and phenolics analyses, we monitored morphological and photosynthetic parameters of *P. zonale* leaves. Our results revealed higher content of free proteogenic amino acids in the white leaf sectors than in the green ones. Moreover, EEE triggered increased polyphenol synthesis, namely anthocyanins, already on the fourth day of the experiment. Also, the leaf fresh/dry weight (FW/DW) ratio was significantly lower in plants exposed to EEE, indicating possible cell wall stiffening.

Keywords: Amino acids, anthocyanins, high light intensity, 'source–sink' interactions, variegated plants.

Acknowledgements: This research was funded by the Ministry of Education, Science and Technological Development, the Republic of Serbia (Contract No. 451-03-68/2022-14/200042, 2022).

ORGANISERS

DONATOR

SPONSORS

ISBN-978-86-912591-6-7