

BOOK OF ABSTRACTS

3rd International Conference on Plant Biology (22nd SPSS Meeting)



9-12 JUNE 2018
BELGRADE

Serbian Plant Physiology Society

Institute for Biological Research "Siniša Stanković", University of Belgrade

Faculty of Biology, University of Belgrade

**3rd International Conference
on Plant Biology
(22nd SPPS Meeting)**



9-12 June 2018, Belgrade

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CIP - Каталогизacija у публикацији - Народна библиотека Србије, Београд
581(048)(0.034.2)

INTERNATIONAL Conference on Plant Biology (3 ; 2018 ; Belgrade)

[Book of Abstracts] [Електронски извор] / 3rd International Conference on Plant Biology [and] 22nd SPPS Meeting, 9-12 June 2018, 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 Branka Uzelac]. - Belgrade : Serbian Plant Physiology Society : University, Institute for Biological Research "Siniša Stanković" : University, Faculty of Biology, 2018 (Beograd : Друштво за физиологију биљака Србије). - 1 USB fleš memorija ; 1 x 3 x 8 cm

Тираж 230. - Регистар.

ISBN 978-86-912591-4-3 (SPPS)

1. Друштво за физиологију биљака Србије. Састанак (22 ; 2018 ; Београд)

2. Институт за биолошка истраживања "Синиша Станковић" (Београд)

а) Ботаника - Апстрактни

COBISS.SR-ID 264421900

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<u>Publishers</u>	Serbian Plant Physiology Society Institute for Biological Research "Siniša Stanković", University of Belgrade Faculty of Biology, University of Belgrade
<u>Editor</u>	Branka Uzelac
<u>Graphic design</u>	Dejan Matekalo
<u>Prepress</u>	Marija G. Gray
<u>Electronic edition</u>	230 pcs

Expression of dehydrins in *Impatiens walleriana* exposed to drought

PP2-37

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Impatiens walleriana is an important ornamental plant with a tendency to quickly wilt when exposed to dehydration, which considerably affects its commercial value. However, *Impatiens* also has great potential to rehydrate upon watering. Effective protection of this valuable ornamental from water stress requires understanding the events associated with dehydration and rehydration at the molecular level. Dehydrins (DHNs) are highly hydrophilic proteins whose expression in many plant species has been correlated with several types of abiotic stresses, including drought, salinity, and cold. Dehydrins comprise Group II of late embryogenesis abundant (LEA) proteins, known to be associated with plant responses to water deficit. DHNs lack stable tridimensional structures, so they are considered intrinsically disordered proteins. They are characterized by three conserved sequence motifs marked as a K (Lys-rich), Y (Tyr-rich) and S (Ser-rich). To study the expression of Dhn genes in response to drought, we have sequenced *I. walleriana* transcriptome and identified *lwDhn* transcripts from RNA-seq data using HMMER (hmmscan, v3.1b2) and Pfam 31 database. Quantitative RT-PCR revealed that two *lwDhn* genes are extremely upregulated in drought, while one has constitutive expression. It can be speculated that fast rehydration after drought stress is at least in part result of the protective role of dehydrins.

Keywords: drought, dehydrins, gene expression

This research was sponsored by Ministry of education, Science and Technological Development of the Republic of Serbia (Grant No. TR31019).

Preliminary Observation of the Effects of Different Concentrations of Copper on Germination of Seeds in Maize Hybrid ZP434

PP2-38

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Copper as an essential element for plants, besides useful, has also negative effects at high concentrations. This problem was investigated by effects of various concentrations (10^{-4} , 10^{-5} and 10^{-6} M) of copper (as a CuSO_4) on germination and thermodynamic changes at maize hybrid (ZP434) seedlings. Fresh mass of the 25 parts of the maize seedlings was measured (plumule, radicle, rest of seedlings), and their mass after drying at 60, 105 and 130 °C. Mass changes correspond to different water fractions (bulk water, cytosolic water and chemically bond water) in the seedling