

Serbian Plant Physiology Society

Institute for Biological Research „Siniša Stanković”, University of Belgrade

2nd International Conference on Plant Biology

21th Symposium of the Serbian Plant Physiology Society

COST ACTION FA1106 QUALITYFRUIT Workshop



Petnica Science Center, June 17-20, 2015

2st International Conference on Plant Biology • 21th Symposium of the Serbian Plant Physiology Society • COST ACTION FA1106 QUALITYFRUIT Workshop
PETNICA SCIENCE CENTER 17-20 JUNE, 2015

Organization Committee

Marijana Skorić, Jelena Savić, Danijela Mišić, Branislav Šiler, Ana Ćirić, Milana Trifunović, Bojana Banović, Nemanja Stanisavljević, Živko Jovanović, Jelena Dragišić Maksimović, Stevan Avramov, Aleksandra Dimitrijević, Dunja Karanović

Scientific Committee

Sokol Abazi (Tirana, Albania)
Jules Beekwilder (Wageningen, The Netherlands)
Harro Bouwmeester (Wageningen, The Netherlands)
Mondher Bouzayen (Castanet-Tolosan, France)
Christian Fankhauser (Lausanne, Switzerland)
Hrvoje Fulgosi (Zagreb, Croatia)
Milen Georgiev (Plovdiv, Bulgaria)
James Giovannoni (Ithaca, USA)
Giovanni Giuliano (Roma, Italy)
David Honys (Prague, Czech Republic)
Angelos Kanellis (Thessaloniki, Greece)
Miroslav Lisjak (Osijek, Croatia)
Autar Mattoo (Beltsville, USA)
Cathie Martin (Norwich, UK)
Roque Bru Martínez (Alicante, Spain)
Václav Motyka (Prague, Czech Republic)
Petr Smýkal (Olomouc, Czech Republic)
Mario Pezzotti (Verona, Italy)
Alain Tissier (Halle, Germany)
Julia Vrebalov (Ithaca, USA)
Jelena Aleksić (Belgrade, Serbia)
Goran Anačkov (Novi Sad, Serbia)
Milan Borišev (Novi Sad, Serbia)
Tijana Cvetić Antić (Belgrade, Serbia)
Bojan Duduk (Belgrade, Serbia)
Dragana Ignjatović-Mičić (Belgrade, Serbia)
Zorica Jovanović (Belgrade, Serbia)

Ivana Maksimović (Novi Sad, Serbia)
Vuk Maksimović (Belgrade, Serbia)
Vladimir Mihajlović (Kragujevac, Serbia)
Dragana Miladinović (Novi Sad, Serbia)
Jovanka Miljuš-Đukić (Belgrade, Serbia)
Danijela Miljković (Belgrade, Serbia)
Neda Mimica-Đukić (Novi Sad, Serbia)
Danijela Mišić (Belgrade, Serbia)
Miroslava Mitrović (Belgrade, Serbia)
Nevena Nagl (Novi Sad, Serbia)
Maja Natić (Belgrade, Serbia)
Miroslav Nikolić (Belgrade, Serbia)
Slavica Ninković (Belgrade, Serbia)
Dejan Orčić (Novi Sad, Serbia)
Pavle Pavlović (Belgrade, Serbia)
Ljiljana Prokić (Belgrade, Serbia)
Marina Putnik Delić (Novi Sad, Serbia)
Svetlana Radović (Belgrade, Serbia)
Tamara Rakić (Belgrade, Serbia)
Aneta Sabovljević (Belgrade, Serbia)
Marko Sabovljević (Belgrade, Serbia)
Jelena Samardžić (Belgrade, Serbia)
Ana Simonović (Belgrade, Serbia)
Marina Soković (Belgrade, Serbia)
Angelina Subotić (Belgrade, Serbia)
Sonja Veljović-Jovanović (Belgrade, Serbia)
Tanja Vujović (Čačak, Serbia)
Snežana Zdravković- Korać (Belgrade, Serbia)
Bojan Zlatković (Niš, Serbia)

Publishers

Serbian Plant Physiology Society
Institute for Biological Research „Siniša Stanković“, University of Belgrade,
Bulevar despota Stefana 142, 11060 Belgrade, Serbia

Editor

Branka Uzelac

Technical editor

Branislav Šiler

Photograph in front page

Danijela Mišić

Graphic design & prepress

Lidija Mačej

Printed by

Makarije, Belgrade

Number of copies

250
Belgrade, 2015

CIP - Каталогизacija у публикацији
Народна библиотека Србије, Београд

581(048) I

INTERNATIONAL Conference on Plant Biology (2 ; 2015 ; Petnica)

[Book of Abstracts] / 2nd International Conference on Plant Biology [and] 21th Symposium of the Serbian Plant Physiology Society [and] COST Action FA1106 QualityFruit Workshop, Petnica, June 17-20, 2015 ; [organized by] Serbian Plant Physiology Society [and] Institute for Biological Research "Siniša Stanković", University of Belgrade ; [editor Branka Uzelac]. - Belgrade : Serbian Plant Physiology Society : Institute for Biological Research "Siniša Stanković", 2015 (Belgrade : "Makarije"). - 203 str. : ilustr. ; 24 cm

Tiraž 250. - Registar.

ISBN 978-86-912591-3-6 (SPPS)

1. Društvo za fiziologiju biljaka Srbije. Simpozijum (21 ; 2015 ; Petnica)

2. COST Action FA1106 QualityFruit. Workshop (2015 ; Petnica)

a) Ботаника - Апстрактни

COBISS.SR-ID 215711500

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

Žepče, from natural serpentine complex in Central Bosnia and Herzegovina. The antioxidant capacity of the methanol extracts was evaluated by using the DPPH free-radical scavenging assay. Results obtained in this study have revealed that all extracts demonstrate good free-radical scavenging ability, but the extracts of *S. tuberosum* and *E. rubrum* leaves showed remarkably potent activity (IC₅₀ = 0.08 mg mL⁻¹ and 0.19 mg mL⁻¹), even higher than the substances used as suitable standards.

Keywords: Boraginaceae, DPPH, *Halacsya*, *Symphytum*, *Echium*

Identification of phenolic compounds in cecidogen and *Linaria vulgaris*. Changes in phenolic metabolism during gall formation induced by *Rhinusa pilosa*

PP4-17

Ana Sedlarević¹, Filis Morina¹, Ivo Toševski², Uroš Gašić³, Jelena Jović⁴, Oliver Krstić⁴,
Sonja Veljović-Jovanović¹

(ana.sedlarevic@imsi.rs, ana.sedlarevic@gmail.com)

¹ Institute for Multidisciplinary Research, University of Belgrade, Belgrade, Serbia.

² CABI, Delémont, Switzerland

³ Faculty of Chemistry, University of Belgrade, Belgrade, Serbia

⁴ Institute for Plant Protection and Environment, Department of Plant Pests, Zemun, Serbia

Rhinusa pilosa (Gyllenhaal) (Coleoptera, Curculionidae) induces galls in *Linaria vulgaris* Mill., Yellow or common toadflax (Plantaginaceae). Gall is defined as atypical plant growth induced by host-specific organisms, and represents larval chamber which provides food and protection during insect development. It has been shown that gall formation is triggered by ovoipositional fluid (cecidogen). In order to determine which cecidogen compounds may have bioactive properties, we performed comparative analysis of phenolics profiles of cecidogen and stem extracts of *L. vulgaris* using UHPLC coupled with Orbitrap mass analyzer. In addition, we analyzed the effects of feeding, oviposition and early gall development on Class III peroxidase activity (POD, EC 1.11.1.7) and phenolic content in the stems of *L. vulgaris* during seven days. Out of 55 phenolic compounds identified in cecidogen and *L. vulgaris* stem, one unknown phenolic glycoside was found only in cecidogen, which produced an MS² base peak at 387 m/z, and 327 m/z and 267 m/z base peaks at MS³ and MS⁴ fragmentation, respectively. Gall development during seven days was accompanied by decreased concentrations of hydroxybenzoic, hydroxycinnamic acids and flavonoids and by slight lignin deposition. An oscillatory induction of POD activity, with the first peak obtained 3 h after oviposition, was related to oxidative burst during stem wounding and oviposition. Overall results suggested the importance of phenolics in stem structural changes and regulation of plant metabolism induced by *R. pilosa*.

Keywords: cecidogen, gall, *Rhinusa pilosa*, *Linaria vulgaris*, phenolics