

UNIVERSITY OF NIŠ  
Faculty of Technology, Leskovac

## **BOOK OF ABSTRACTS**

15<sup>th</sup> INTERNATIONAL SYMPOSIUM  
„NOVEL TECHNOLOGIES AND SUSTAINABLE  
DEVELOPMENT“

Leskovac, October, 20-21, 2023.

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Publisher: Faculty of Technology, Leskovac  
For the Publisher: Prof. Dragiša Savić  
Editor: Prof. Marija Tasić

CIP - Каталогизacija u publikaciji Narodna biblioteka Srbije, Beograd

6(048)(0.034.2)

INTERNATIONAL Symposium "Novel Technologies and Sustainable Development"  
(15 ; 2023 ; Leskovac)

Book of abstracts [Elektronski izvor] / 15th International Symposium "Novel Technologies and Sustainable Development" Leskovac, October, 20-21, 2023. ; editor Marija Tasić. - Leskovac : Faculty of Technology, 2023 (Leskovac : Faculty of Technology). - 1 elektronski optički disk (CD-ROM) ; 12 cm

Sistemski zahtevi: Nisu navedeni. - Nasl. sa naslovne strane dokumenta. - Na vrhu nasl. str.: University of Niš. - Tiraž 30.

ISBN 978-86-89429-56-5

a) Технологија -- Апстракти b) Технолошки прогрес -- Привредни развој -- Апстракти

COBISS.SR-ID 127014409

Printing by: Faculty of Technology, Leskovac  
Impression: 30

Proofreader: Jovana Nikolić  
Paging and graphical design: Vesna Marinković

ISBN-978-86-89429-56-5

## **TOTAL PHENOLIC AND PROANTHOCYANIDIN CONTENTS OF SEEDS OF INTERNATIONAL AND INDIGENOUS GRAPE VARIETIES**

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Recent research demonstrated that a healthy diet can prevent non-communicable diseases such as cardiovascular diseases, cancers, metabolic syndrome and diabetes type 2. The concept of using natural food ingredients to produce functional food products seems promising for lifestyle improvement. Grape seed emerged as a valuable source of phenolic compounds, especially proanthocyanidins, and has proven to exhibit strong antioxidant properties. The main objective of this research was to assess the total phenolic (TPC) and total proanthocyanidin (PA) contents of seeds of seven grape varieties, four red (Hamburg, Prokupac, Merlot, Cabernet Sauvignon) and three white (Smederevka, Riesling Italien and Tamjanika), as a potential source of phenolic compounds.

For experiments, aqueous methanol (80:20 v/v) containing 0,1% HCl and aqueous ethanol (50:50 v/v) seed extracts were prepared. A method with Folin-Ciocalteu's reagent was used for TPC measurements, whereas butanol-HCl test were used for PC determination. The TPC of seed extracts was in the range from 2699.08 (Smederevka) to 6467.9 mg GAE/100g DM (Prokupac) for aqueous methanol extracts or in the range from 2644.82 (Smederevka) to 5518.68 mg GAE/100g DW (Prokupac) for aqueous ethanol extracts. The content of total proanthocyanidins in the seed extracts varied from 3189.44 (Smederevka) to 6109.24 mg PA/100g DW (Prokupac), for aqueous methanolic extracts or from 2612.1 (Smederevka) to 4811.32 mg PA/100g DM (Prokupac) for aqueous ethanol extracts. According to the obtained results both, aqueous methanol and aqueous ethanol seed extracts of indigenous grape variety Prokupac can be a good source of phenolic compounds, especially proanthocyanidins. Considering that the Folin-Ciocalteu method is also an antioxidant assay, Prokupac seed extracts can be considered a notable source of antioxidants.