

BOOK OF ABSTRACTS



*XIV International Scientific Agriculture Symposium
"Agrosym 2023"
Jahorina, October 05-08, 2023*



Editor in Chief

Dusan Kovacevic

Technical editors

Sinisa Berjan
Milan Jugovic
Rosanna Quagliariello

Website:

<http://agrosym.ues.rs.ba>

CIP - Каталогизација у публикацији
Народна и универзитетска библиотека
Републике Српске, Бања Лука

631(048.3)(0.034.4)

INTERNATIONAL Scientific Agricultural Symposium "Agrosym
2023" (14 ; Jahorina)

Book of Abstracts [Електронски извор] / XIV International
Scientific Agriculture Symposium "Agrosym 2023", Jahorina,
October 05 - 08, 2023 ; [editor in chief Dušan Kovačević]. - East
Sarajevo = Istočno Sarajevo : Faculty of Agriculture = Poljoprivredni
fakultet, 2023. - 1 електронски оптички диск (CD-ROM) : текст,
слика ; 12 cm

Системски захтеви: Нису наведени. - Насл. са насл. екрана. -
Регистар.

ISBN 978-99976-987-7-3

COBISS.RS-ID 139166465

IN VITRO ANTIOXIDANT POTENTIAL OF SOYBEAN HULL EXTRACTS

Nevena BARAĆ¹, Danka MITROVIĆ¹, Aleksandar KOSTIĆ¹, Ivana SREDOVIĆ
IGNJATOVIĆ¹, Milenko SMILJANIĆ^{2*}, Biljana RABRENOVIĆ¹, Miroљjub BARAĆ¹

¹University of Belgrade, Faculty of Agriculture, 6 Nemanjina Street, Zemun, Belgrade, Serbia

²University of East Sarajevo, Faculty of Technology Zvornik, Karakaj 34A, Zvornik, Bosnia and Herzegovina

*Corresponding author: milenkos74@gmail.com

Abstract

Hull is the major by-product of soybean processing industry. Generally, it is regarded as „waste“ and used for animal feeding or discarded directly causing resource wastage and environmental pressure. However, soy hull can be a good source of bioactive compounds including isoflavones and other polyphenols, trypsin inhibitors and bioactive peptides. Most of these compounds are associated with antioxidant activity and it is believed that they can contribute to the reduction of oxidative stress, which is associated with the occurrence of a number of degenerative diseases. In this study we investigated in vitro antioxidant properties (ABTS radical scavenging activity, reducing power and iron (II) chelating ability), as well as total phenolic, flavonoid and dihydroxycinnamic acid derivates contents of water and methanol extracts of soybean hulls. For these purpose deffated commercial soy hulls were thermally pre-treated for 10 minutes using steam at 1.3 bars (wet heating) in oven at 120 °C (dry heat treatment) during the same period. According to the results of this study both, thermal pre-treatment and extraction agent affect in vitro antioxidant potential, total content of phenolic and flavonoid compounds as well as the content of dihydroxycinnamic acid derivates. Water extracts had more than twice higher ABTS radical scavenging activity (4.57-4.91 mgETrolox/g) than the methanol extracts (2.03-2.16 mgETrolox/g), but similar Fe (II) chelating ability. Water extracts are characterized with higher content of total phenols, flavonoids and dihydroxycinnamic acid derivates compared to methanol extracts.

Key words: *Soy hull, Antioxidant potential, Phenolic compounds.*