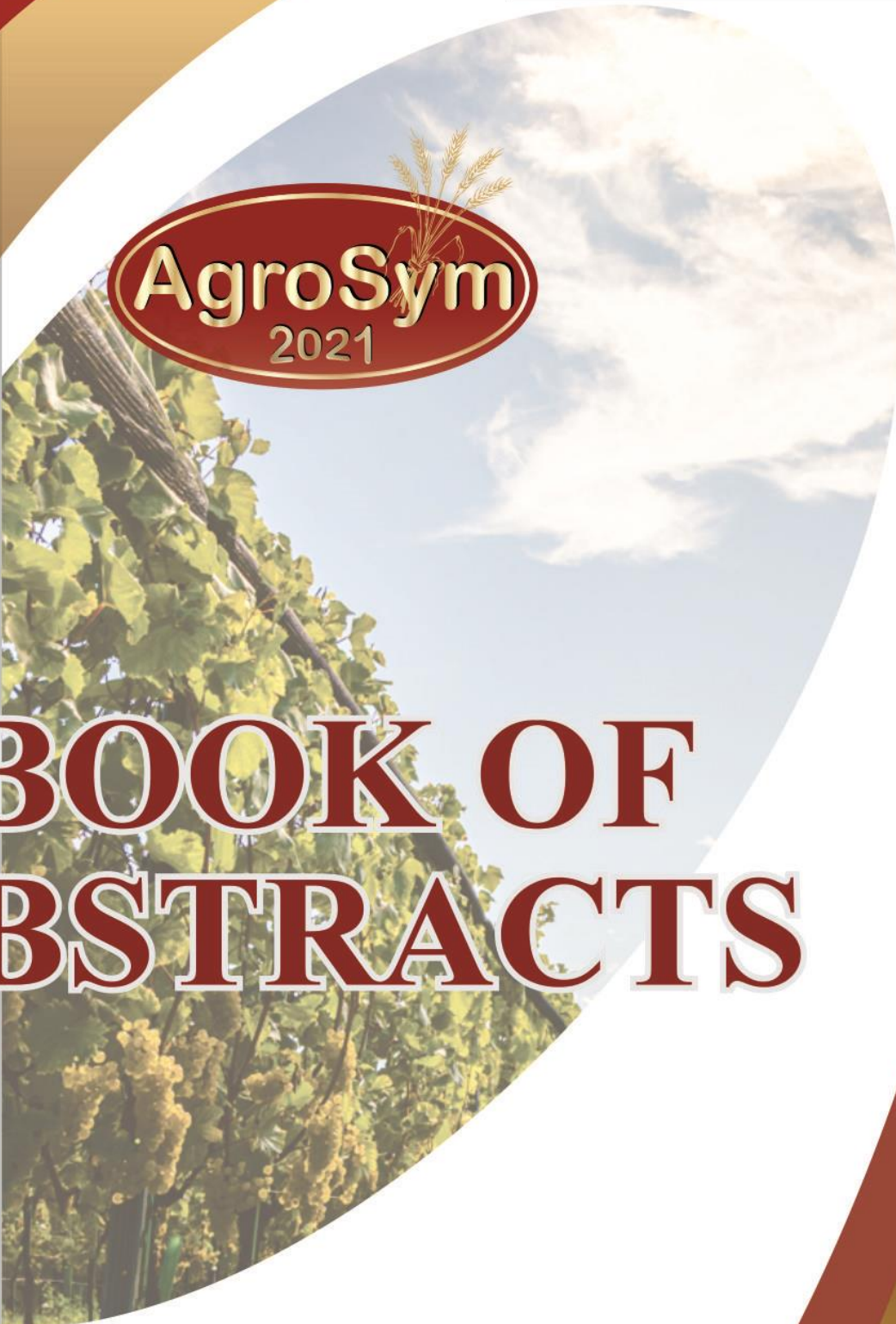




AgroSym
2021



BOOK OF ABSTRACTS

*XII International Scientific
Agriculture Symposium
"AGROSYM 2021"
October 7-10, 2021*



AGRO 2021
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**XII International Scientific Agriculture Symposium
“AGROSYM 2021”**



Jahorina, October 07 - 10, 2021

Impressum

XII International Scientific Agriculture Symposium „AGROSYM 2021“

Book of Abstracts Published by

University of East Sarajevo, Faculty of Agriculture, Republic of Srpska, Bosnia
University of Belgrade, Faculty of Agriculture, Serbia
Mediterranean Agronomic Institute of Bari (CIHEAM - IAMB) Italy
International Society of Environment and Rural Development, Japan
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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 2021" (12 ;
Jahorina)

Book of Abstracts [Електронски извор] / XII International Scientific
Agriculture Symposium "Agrosym 2021", Jahorina, October 07 - 10, 2021 ;
[editor in chief Dušan Kovačević]. - East Sarajevo = Istočno Sarajevo :
Faculty of Agriculture = Poljoprivredni fakultet, 2021. - 1 електронски
оптички диск (CD-ROM) : текст, слика ; 12 cm

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

ISBN 978-99976-787-8-2

COBISS.RS-ID 134426625

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PREFACE

Dear colleagues,

In your hands is the Book of Abstracts of the 12th International Scientific Agricultural Symposium "AGROSYM 2021", which I hope you will find useful in your work. As many as 700 contributions have been accepted for the Book of Abstracts. The themes of AGROSYM 2021 cover all branches of agriculture and are divided into seven sessions: 1) Plant production, 2) Plant protection and food safety, 3) Organic agriculture, 4) Environmental protection and natural resources management, 5) Animal husbandry, 6) Rural development and agro-economy, and 7) Forestry and agroforestry.

The multi-functionality of agriculture (viz. crop production, animal production and fisheries) and the central role it plays in food production, food security, rural development, bio-economy (e.g. production of fibres and raw materials for industries) and green economy (e.g. production of biofuels) determine its importance in all countries; especially nowadays, with the second year of the COVID-19 pandemic.

Many scholars and practitioners argue that technology will increase production and feed more people while reducing the variability as well as the environmental impacts of agricultural production. Technology has been particularly important for improving production in non-tree crops such as maize, rice, soybean, wheat and cotton. Because trees have longer cycles, they take longer to improve through traditional breeding programs. New techniques of plant breeding can improve productivity further, but there is a lively academic debate about their pros and cons.

While the focus has been in the past on the production side (cf. productivity, efficiency), more and more attention is nowadays paid to the consumption side as well as the intermediate stages (e.g. processing, distribution) of the food chain thus moving towards a 'farm to fork' approach. Globally, consumers are sending clearer signals than ever before about what they want on their tables i.e. higher quality as well as healthier, safer, and tastier products. Therefore, most companies in the food industry are currently exploring different ways to ensure that they have more control over the production processes for agricultural commodities as well as final products quality. Changes in investment strategy also have the potential to reduce the environmental and social costs of agriculture. It is now apparent to most investors that companies that pay more attention to sustainability and social responsibility, even with the same financial rating, will have better returns both in the short term and over time.

Agri-food systems have been central in the global debate on sustainable development and the achievement of the Sustainable Development Goals (SDGs) as shown by the recent United Nations' Food Systems Summit held in September 2021 in New York. Indeed, agri-food systems are at the center of various global challenges such as climate change, poverty, vulnerability, food insecurity, biodiversity loss, resource scarcity and ecosystem degradation. In this context, one of the goals of the sustainable agriculture movement is to create farming systems that mitigate or eliminate environmental harms associated with industrial agriculture.

Many thanks to all the authors, reviewers and colleagues for their help in editing the Book of Abstracts. Special thanks go to all co-organizers and partners for their unselfish collaboration and comprehensive support.

East Sarajevo, 07 October 2021

Prof. Dušan Kovačević, PhD

Editor in Chief, President of the Scientific Committee of AGROSYM 2021



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INFLUENCES OF HERBICIDE TREATMENTS AND ROW SPACES ON THE MAIZE GROWTH AND YIELD PARAMETERS

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Abstract

The herbicide application and crop arrangement modifications are measures that can reduce weed abundance and support maize to compete over weeds. The aim of the investigation was to test and compare the growth and yield parameters of maize cultivated with standard and narrow distances and with pre- and post-emergence chemical weed control. The experiment was conducted in the MRI Zemun Polje, Belgrade, during 2014-2016. Maize hybrid ZP 388 was grown with 50 cm and 70 cm row spacing, i.e 59,500 and 83,333 plants ha⁻¹, respectively. The herbicide treatments included: control, a pre-emergence treatment of S-metolachlor+mesotrione and the post-emergence application of nicosulfuron+mesotrione. Six weeks after herbicides application, the biomass of whole maize plant (BMP) was measured, while the chlorophyll content (CH), leaf area (LA) and the leaf area index (LAI) were evaluated at the stage of fully developed maize plants. The Harvest index (HI) and grain yield (GY) were measured at harvest. The herbicide application caused significant differences in all maize parameters. The BMP, CH, LA, LAI, HI and GY were the highest when the post-emergence herbicides treatment was applied (25.22 g, 61.16, 4545.76 cm², 3.22, 0.46 and 9.56 t ha⁻¹, respectively) and the lowest in control (15.21 g, 49.35, 3356.02 cm², 2.39, 0.41 and 5.87 t ha⁻¹, respectively). Maize cultivation with 70 cm row distance was significantly advantageous for LA, HI and GY (4316.33 cm², 0.45 and 9.19 t ha⁻¹, respectively) in comparison to the 50-cm row distance (3940.96 cm², 0.43 and 7.36 t ha⁻¹, respectively). The post-emergence herbicide application and standard 70-cm row distance are beneficial for the growth and yield of the hybrid developed under agro-ecological conditions of Serbia.

Key words: *Cropping practices, Maize, Herbicides, Leaf area, Yield.*