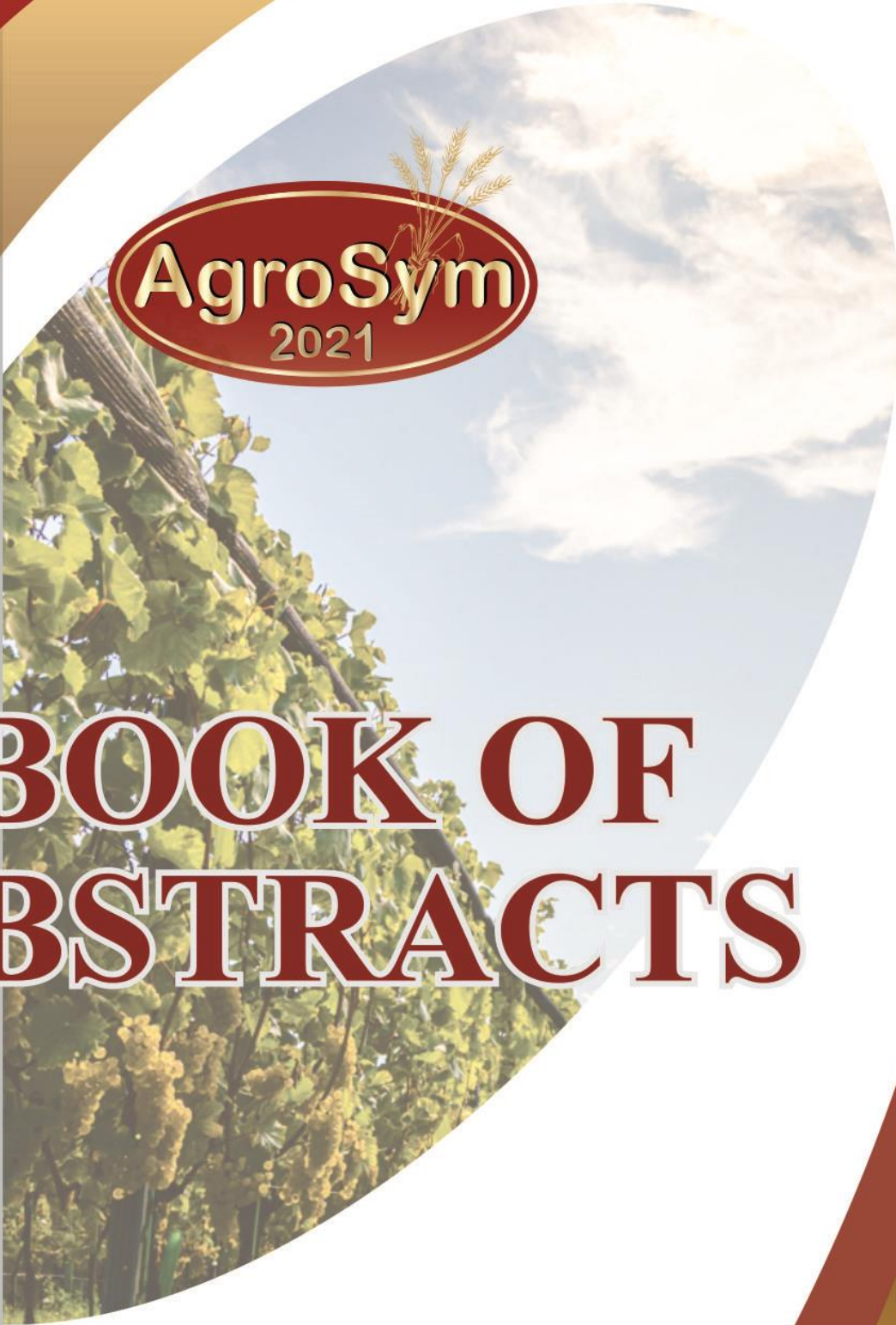




**AgroSym**  
2021



# **BOOK OF ABSTRACTS**

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



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# **BOOK OF ABSTRACTS**

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



**Jahorina, October 07 - 10, 2021**

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## PREFACE

Dear colleagues,

In your hands is the Book of Abstracts of the 12<sup>th</sup> 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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## IMPACT OF SUBSTRATE VOLUME ON THE CUCUMBER SEEDLING QUALITY

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### Abstract

In the production of vegetable crops and flowers, the size of the growing space, i.e. volume of container cells or pots, has a direct impact on water and air properties of the substrate, nutrient availability, and consequently the plant growth. Reactions differ depending on the plant species. Plants belonging to the gourd family (*Cucurbitaceae*) have the root system which is very sensitive to mechanical injuries and which has weak regeneration abilities. Therefore, the volume of the substrate in which their seedlings will be grown is very significant in the seedling production. Finding the optimal substrate volume has an impact on the seedling quality and later on the production itself, but it is also very significant from the economic point of view. Therefore, studies were conducted at the Faculty of Agriculture, University of Belgrade with the aim to define the optimal substrate volume which would provide the seedlings of the highest quality in the shortest time possible. The cucumber seedlings (Darina F<sub>1</sub>) were grown in grow chambers at day/night intervals of 14/10h and air temperature of 25/18°C. The seedlings were grown in pots of different volumes: 100, 200, 300, 500 and 1000 cm<sup>3</sup>. The pots were filled with the substrate TKS 1 (Floragard). The seedling period lasted for 22 days (after sprouting), after which the seedling quality was determined by measuring the plant height and stem height, stem diameter, leaf number, leaf surface per plant, as well as plant fresh weight. It was determined that the increase in the substrate volume led to the linear increase in the values of all measured seedling quality parameters. The differences between smaller substrate volumes (100-300 cm<sup>3</sup>), as well as between the larger volumes (500 and 1000 cm<sup>3</sup>) were not statistically significant. From the production and economic points of view, the most optimal substrate volume for the cucumber seedling production is in the range from 200 to 300 cm<sup>3</sup>.

**Key words:** *cucumber, pots, substrate volume, seedling quality.*