

# BOOK OF ABSTRACTS



CONGRESS

OF THE SERBIAN GENETIC SOCIETY

2019 | October  
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VRNJAČKA BANJA • SERBIA





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Abstracts of the 6th CONGRESS OF THE SERBIAN GENETIC SOCIETY



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**WELCOME TO VI CONGRESS OF THE SERBIAN GENETIC SOCIETY!**

Dear colleagues,

Welcome to the 6th Congress of the Serbian Genetic Society. The Serbian Genetic Society (SGS) has been founded in 1968 and the first Congress organized by the SGS was held in 1994 in Vrnjacka Banja. Since then, the Congress of Serbian Genetic Society is held every five years. Over the past years, the Congress has grown from a national to an international meeting.

The experience of the past meetings motivated our efforts to continue with this series with a clear tendency to strengthen the scientific connections among researchers from different European countries.

The Congress will focus on the most recent advances in genetics and on wide range of topics organized in 9 sessions and two workshops. Many of the presentations will be in lecture-like settings, but we hope that there will also be ample opportunities for informal interaction outside the scheduled sessions.

The successful organization of the Congress has required the talents, dedication and time of many members of the Scientific and Organizing committees and strong support from our sponsors. I hope that you will find the Congress both pleasant and valuable, and also enjoy the cultural and natural beauty of Vrnjacka Banja.

Yours sincerely,



**Branka Vasiljevic**  
President of the Serbian Genetic Society



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**VARIABILITY OF MACRONUTRIENTS IN MAIZE INBRED LINES  
CAUSED BY APPLICATION OF ORGANIC PEROXIDES**

Milena Milenković<sup>1</sup>, Milena Simić<sup>1</sup>, Dejan Opsenica<sup>2</sup>, Milan Brankov<sup>1</sup>,  
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Exogenous application of chemical elicitors can be used to reduce damage of plants caused by abiotic stresses and consequently to enhance productivity. Different organic peroxides (mixed with DMSO) were used in this study with the aim to examine variations in grain yield and macronutrient status, i.e. protein, starch and oil contents, of four maize inbred lines. Peroxides in combination with DMSO were applied foliarly. Results showed that two genotypes reacted positively on applied treatments, achieving higher grain yields than control group, with difference up to 2-3 t ha<sup>-1</sup>. In total, one of the applied substances expressed the highest impact on yield enhance. In terms of nutritive quality, the same treatment mostly increased the starch content. In regard to protein content, higher value was achieved by the genotype which also had higher grain yield, and for oil content, variations in results among treatments were insignificant and irregular. This indicates that various elicitors, such as organic peroxides, could be used not only for increase in grain yield, but also in modification of grain nutritional quality in regard to genotype variability.

MAIZE INBRED LINES, ORGANIC PEROXIDES, GRAIN, YIELD, NUTRITIONAL QUALITY

06 – 36 Poster

**RESPONSE OF TEN MAIZE INBRED LINES TO SEED PRIMING TREATMENTS  
ANALYZED USING GT BILOT METHODOLOGY**

Petar Čanak, Miroslav Zorić, Milan Mirosavljević, Mihajlo Čirić, Bojana Vujošević,  
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Early emergence and seedling growth is considered as one of the most important yield-contributing factors in maize. Seed priming has been successfully used for improving these traits in different crops. The objective of this study was to determine the effect of seed priming treatments (hydropriming and KNO<sub>3</sub>) on emergence and seedling growth traits, inbred line's response to seed priming treatments as well as to evaluate the application of GT biplot methodology in this type of analysis. Observation was made on 10 maize inbred lines. Testing was conducted in sterile moistened sand at suboptimal (15° C) and optimal temperature (25°C) for early maize growth traits. Results showed that seedling emergence and growth of maize lines under both temperatures could be improved with seed priming. In most of lines, seed priming improved certain emergence and seedling growth traits; however, in some lines it had adverse effect on seedling emergence traits. Some lines responded better to hydropriming and other to KNO<sub>3</sub> priming. There is also the possibility for one genotype to benefit from specific seed priming at one temperature and show adverse effects at another. Generally, seed priming showed greater improvement in studied traits at suboptimal temperature than at optimal one. The highest percentage of variation, in all studied traits, was explained by line main effect, suggesting the existence of high genetic diversity in used maize inbred lines. Observed diversity represents useful information for selection of appropriate maize inbred line and adjusted seed priming treatment for sowing in different temperature conditions. This research also showed that biplot analysis could be used as a quick visual method for identifying the effect of seed treatments such as priming on different germination, emergence and seedling growth traits and evaluation of genotypes response to these treatments.

MULTIVARIATE ANALYSIS, SEEDLING EMERGENCE, SEED TREATMENT, ZEA MAYS