

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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VRNJAČKA BANJA • SERBIA

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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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**IMPROVING WATERMELON DROUGHT TOLERANCE BY GRAFTING:
THE IMPLICATIONS FOR QUALITY AND YIELD**

Milka Brdar-Jokanović, Jelica Gvozdanović-Varga, Biljana Kiprovska, Anamarija Koren,
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Drought is a common abiotic constraint affecting world agricultural production. This study was aimed to investigate grafting as a means to improve watermelon response to drought, as well as to assess the effects of different rootstocks on watermelon agronomic and quality traits. The popular vegetable is among species with a rather large water demand. Five scions (*Citrullus lanatus* breeding lines, experimental hybrids and cultivar) were grafted on nine rootstocks (*Citrullus lanatus* var. *citroides*, *Lagenaria siceraria*, *Cucurbita moschata* and *Cucurbita maxima*) in all combinations, without previous knowledge on their compatibility. Plant material originates from the Institute of Field and Vegetable Crops, Novi Sad, Serbia, where the experiments took place. Three quarters of the total number of the scion-rootstock combinations were successfully acclimatized in a growth chamber, whereas in the open field only a half of previously acclimatized combinations completed life cycle. To various extent, irrigation improved yield in non-grafted watermelons, by increasing both fruit number and weight. Total sugars were generally lower, and β -carotene and lycopene were higher in irrigation. The performance of the grafted watermelons depended on scion-rootstock combination and could not be generalized for both irrigated and rainfed plants, as well as for agronomic and quality traits. The scion-rootstock combinations with enhanced yield and/or quality in limited water supply were identified, and were mainly with *Citrullus lanatus* var. *citroides* or *Lagenaria siceraria* rootstocks. The results imply grafting as a promising approach for mitigating the effects of drought in watermelon production.

DROUGHT, GRAFTING, WATERMELON

06 – 40 Poster

**THE ANALYSIS OF COMBINING ABILITIES OF MAIZE INBRED LINES OF DIFFERENT CYCLES
OF RECURRENT SELECTION FOR THE EAR LENGTH**

Mile Sečanski¹, Goran Todorović¹, Jelena Srdić¹, Zoran Čamdžija¹, Marijenka Tabaković¹,
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The evaluation of combining abilities is an inevitable step in the development of highly productive maize hybrids. The mean values, heterosis, and general (GCA) and specific (SCA) combining abilities of maize inbreds and their hybrids were observed in this study. Inbreds of different cycles of recurrent selection of two maize synthetic populations BSSS and BSCB1 were selected for the study. Hybrids showed higher values of the ear length than inbreds, since inbreeding depression occurs in inbreds as a result of the inbreeding process. The analysis of variance of combining abilities indicates significant positive values of GCA and SCA over both locations and both years of investigation. Since GCA to SCA ratio for inbreds of the BSSS population and parents of an elite hybrid was lower than unit, it can be concluded that a non-additive gene effect might be more important in controlling the expression of this trait. On the other hand, the additive gene effect was the most important for inbreds and hybrids originating from the BSCB1 population. The highest GCA values were recorded in inbreds ZPL1 and ZPL2. Hybrids derived from these two inbreds showed high SCA values in both years of investigation.

MAIZE, COMBINING ABILITY, HYBRIDS, INBREDS, EAR LENGTH