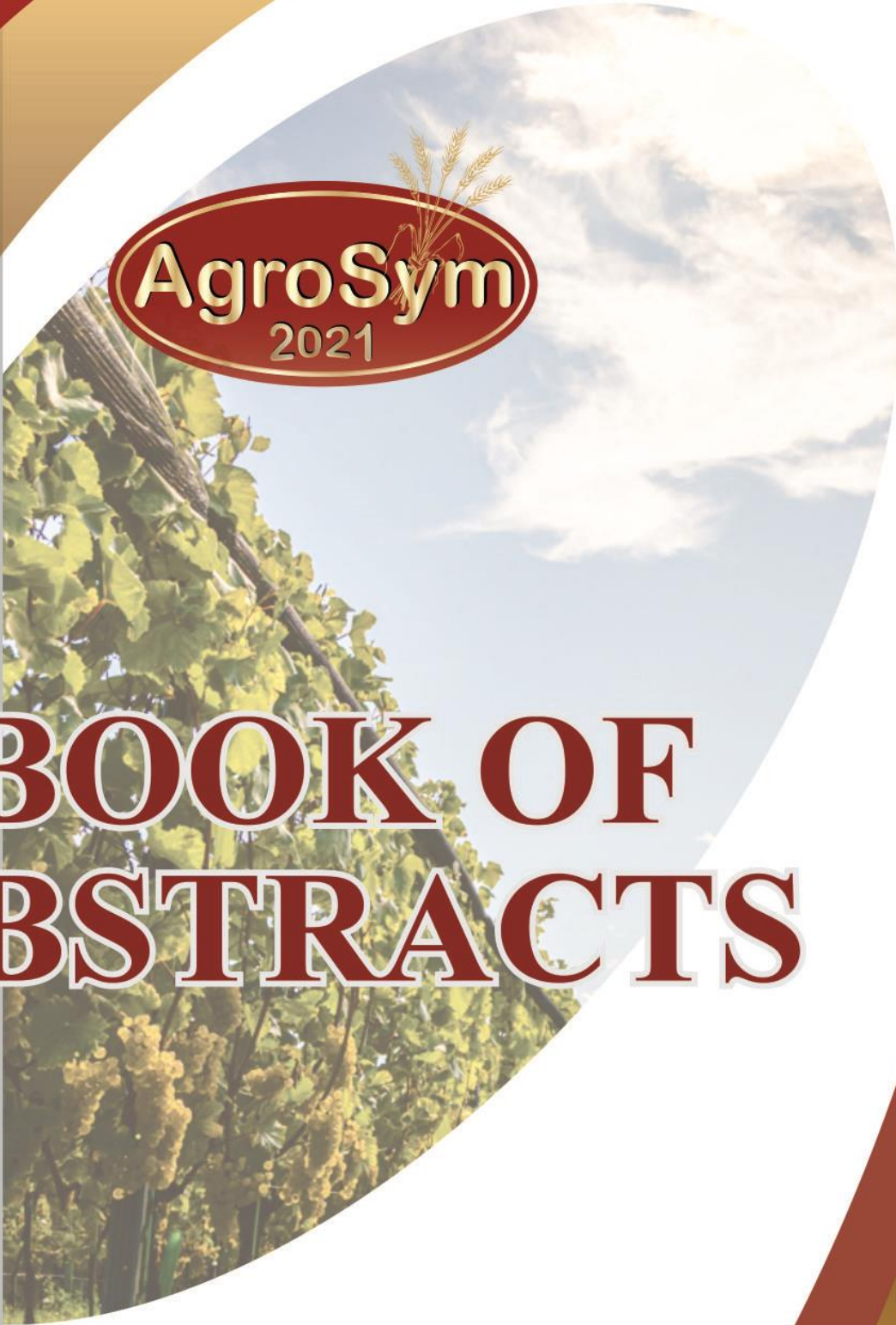




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BOOK OF ABSTRACTS

*XII International Scientific
Agriculture Symposium
"AGROSYM 2021"
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YIELD COMPONENTS OF BIOMASS AND GRAIN OF SOYBEAN IN RESPONSE TO THE USE OF BIOFERTILIZER

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Abstract

In recent years, biofertilizers have received more attention as eco-friendly and sustainable agricultural practice to boost crop production. This research included application of bio-fertilizer Coveron, containing mycorrhizal fungi, *Trichoderma atroviride* and rhizosphere bacteria, on the yield components of biomass (in reproductive growth stage) and grain (in full maturity stage) of soybean (*var.* Selena). The field experiment was set up in the Maize Research Institute „Zemun Polje“, during 2020. Treatments included application of biofertilizer Coveron prior to sowing, and control (without Coveron). Harvesting for biomass yield - BY, as well as morphological traits (plant height - PH, weight of underground plant - WP, number of nodes per plant - NN, number of pods per plant - NP) were measured in R4 growth stage. At full maturity, grain yield and its components were recorded, including: PH, WP, NN, NP again, as well as grain yield - GY, number of seeds per plant - NS, seed weight per plant - SW, and 1000-seed weight - TSW. Results showed that biofertilizer significantly influenced biomass yield (31.36 t ha⁻¹ and 26.22 t ha⁻¹, with and without Coveron, respectively), while results for GY were opposite (higher grain yield was obtained in no-treated soybean, but without statistically significant difference at $p=0.05$). In regard to other examined parameters for biomass, biofertilizer positively affected all of them, increasing PH, WP, NN and NP values. However, situation in phase of full maturity was a slightly different. While Coveron increased the values of PH and NN, other parameters were greater in control. Correlations among the investigated traits were also estimated, and significant positive correlation between GY and NP, NS and SW was determined. Accordingly, further research should be focused on the potential biofertilizer use to increase biomass and grain yield.

Keywords: *plant height, number of nodes, number of pods, number of seeds, seed weight.*