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# Book of Abstracts

# Zbornik sažetaka

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9	Fitomedicina Plant Protection	Prof.dr.sc. Edyta Đermić
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# Increasing the potential for improving morphological characteristics of soybean seeds (*Glycine max* L.) through an ecological approach

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## Summary

Soybean is one of the most important oil and protein crops in the world. Soybean accounts for 30% of the world's edible oil production. A major problem affecting soybean production is low seed viability. One treatment that promotes uniform and rapid seed germination and increases resistance to adverse environmental conditions is seed hydropriming. The objective of this study was to determine the importance of hydropriming treatment on seed morphological and physiological characteristics. Three soybean varieties: Lela, Selena and Laura were used for the experiment. After a period of immersion in water (T0-control, T1-2h, T2-4h, and T3-6h), the length, and weight of the roots, stems, and seed germination were measured in a laboratory setting. Compared to untreated seed, germination was not significantly altered by seed treatment. This characteristic was primarily variety dependent, with seed of the cultivar Laura having the highest germination rate (98%) when treated with T0 and T1. The morphological characteristics of the seedlings differed significantly after hydropriming. After T1 treatment, the variety Laura had the longest root with 15.822 cm. In the T1 treatment, the variety Lela had the longest stems (9.033 cm). Seed treatment did not significantly increase root and stem weight. The results of the study show that seed treatment increases the ability of seeds to withstand stressful conditions, especially during prolonged droughts.

**Keywords:** eco-friendly priming, phenotype, seeds, soybean