

BACTERIAL TREATMENT PROMOTES THE GROWTH OF TWO-YEAR-OLD SESSILE OAK (*Q. PETRAEA* (MATT.) LIEBL) SEEDLINGS PRODUCED FROM DAMAGED ACORNS

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Plant growth-promoting bacteria (PGPB) are a diverse group of microorganisms that support plant growth and development by hormone production, nutrient sequestration, and biocontrol activity. Nowadays they are used as an ecologically acceptable alternative to chemical fertilizers and pesticides, and their significance is especially emphasized during seed germination and plant survival in unfavorable environmental conditions. Oak acorns are seeds that are very rich with nutrients and are food for many animals, whereby their germination is endangered, and the growth of such seedlings stagnates. In this study, two-year-old sessile oak seedlings produced from acorns damaged with drillings from pest attack were treated with bacteria for which it was demonstrated in vitro plant growth-promoting potential, with the aim to investigate their effect on the quality of the seedlings that originate from damaged acorns. For treatment preparation, two bacteria were used, from *Bacillus* and *Pseudomonas* genera. At the end of the growing season, seedling height and root collar diameter were measured by a ruler and vernier caliper, and based on the obtained data seedling growth and root collar diameter increment were calculated. For data statistical analysis in SPSS 27 software package ANOVA or GLM were used, depending on the fulfillment of the conditions for their application. Results indicate a statistically significant difference between bacterial treatments and the control group for seedling height and root collar diameter values, where seedlings treated with bacterial inoculum were more successful. The mean values of seedling height increment were higher for both bacterial treatments compared to the control group, although differences were not statistically significant. Differences in seedling root collar diameter increment between bacterial treatments and control group were not statistically significant as well, although *Bacillus* treatment group had higher mean values in comparison to the control group. The obtained results confirm beneficial effect of *Bacillus* and *Pseudomonas* bacterial genera on seedling growth and development, which can be used as an auxiliary measure in seedling production from damaged acorns.

