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INVESTIGATION OF THE EFFECTS OF A PLANT GROWTH REGULATORY BACTERIUM, *Pseudomonas putida* KT2440 STRAIN, ON THE GERMINATION OF BLACK PINE AND SCOTCH PINE SEEDS IN DIFFERENT SOIL MIXTURES

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Abstract

The black pine and Scotch pine are considered highly significant for Turkey's forestry. Increased germination rates are directly proportional to expanding the country's forest wealth through low-cost solutions. The rhizosphere bacterium *Pseudomonas putida* KT2440 interacts with plant roots on a variety of levels, assisting the plant to cope with stress. The purpose of this study was to investigate whether bacterial inoculation boosted the germination rates of black pine and Scotch pine seeds. Simultaneously, the impact of bacterial inoculation on the link between soil organic matter content and germination was examined. The results revealed that the use of pseudomonas in seeds that germinated in control soil and 30% impoverished soil resulted in lower germination numbers. On the other hand, treatment with *Pseudomonas* improved germination in the Scotch pine in soil that was 50% impoverished. Moreover, similar outcomes were obtained in seedling development. In conclusion, treatment with *Pseudomonas* considerably increases germination in impoverished soils.

Key words: bacteria, germination plant growth, *Pinus nigra*, *Pinus sylvestris*

Received: February, 2023; *Revised final:* October, 2023; *Accepted:* December, 2023; *Published in final edited form:* January, 2024
