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THE MANAGEMENT OF N AND P NUTRITION OF PLANTS USING NITROGEN FIXING AND PHOSPHORUS SOLUBILIZING BACTERIA

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Abstract

The nitrogen and phosphorus management in agricultural systems leads to an increased input of plant nutrients and sustains the soil fertility. Microbes contribute through different mechanisms to nutrient cycles, transforming it available for plants. Isolation of 18 Azospirillum and 18 Azotobacter bacterial isolates was effectuated from the rizosphere and interior roots of the following plants: *Carex fusca* All., *Carex rostrata* Stokes., *Eriogonum latifolium* Sm., *Carex elata* All., and from *Equisetum sylvaticum* L. originated from the Borsáros raised bog natural reserve. Three rhizobial isolates were isolated from soil where *Phaseolus vulgaris* L. was cultivated. The bacterial isolates were characterized using biochemical tests. We also performed the molecular grouping of the Azospirillum and Azotobacter isolates due to the restriction fragment length polymorphism (RFLP) of the 16S rDNA sequences. We determined the nitrogen fixing capacity. The ability of isolates to solubilize phosphates was detected using Pikovskaya's agar plates containing calcium-phosphate, whereas the siderophores producing ability was detected on Chrom Azurol S agar plates.

Key words: nitrogen fixation, nutrient, phosphate mobilization

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