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ISOLATION, CHARACTERIZATION AND IDENTIFICATION OF NITROGEN AND PHOSPHORUS MOBILIZING BACTERIA

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Abstract

The main aim of our study is the development of bacterial biopreparates based on organic nitrogen and phosphorus mobilizing microorganisms. In this study we analyzed the nutrient mobilizing ability (cellulase, phytase, lecithinase, alkaline phosphatase and alkaline protease enzyme activities) from organic material of the soil bacteria isolated from high mountain region in Romania. Based on the ARDRA analysis and the nucleotide sequence of 16S rDNA 10 bacterial strains were identified, as follows: *Pseudomonas* sp., *Delftia lacustris*, *Serratia plymuthica*, *Acinetobacter lwoffii*, *Bacillus cereus*, *B. fordii*, *Erwinia cypripedii*, *Pseudomonas jessenii*, *P. fluorescens* PC17 and *P. fluorescens* Rs-198. In order to formulate a new nitrogen and phosphorus mobilizing biopreparate, six strains from the 37 isolated ones with high specific enzyme activities were selected. These strains were identified as *Pseudomonas* sp. 12BS, respectively 19BS, *Delftia lacustris* 6BS, respectively 17BS, *Serratia plymuthica* 9BS and *Acinetobacter lwoffii* 4CZR.

Key words: bacterial biopreparate, decomposition of organic matter, plant growth promoting bacteria

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