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ČLÁNEK V ODBORNÉM ČASOPISE NEBO KONFERENČNÍ PŘÍSPĚVEK – VÝSLEDEK TYPU O (O- OSTATNÍ VÝSLEDKY)

Abstrakt

ENDOPHYTIC MICROORGANISMS AND THEIR POTENTIAL USE IN AGRICULTURE AS BIOFERTILIZERS

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Endophytic microorganisms are almost ubiquitous in nature. They can occur near or within other organisms including plants, animals and also humans. It is known that endophytic microorganisms are able to synthesize many compounds, for example indole-3-acetic acid (IAA), that are mainly used by plants for their growth. This is the so-called plant growth promoting activity. It has been found, and this is the main goal of this project, that microorganisms, especially bacteria, are able to release ammonia ions when they are cultured in non-sugar media such as LB (lysogeny broth) or similar media containing amino acids or soluble peptides. Ammonia ions are essential for bacterial metabolism, but in small amounts, most of the ions are released into the medium or soil where they are absorbed by the plants to be used for their better growth. According to experiments, the tested bacteria *Pantoea agglomerans* DBM 3697 (KK1), *Pantoea agglomerans* (KK2), *Bacillus mycoides* and *Paenibacillus amylolyticus* are known to be able to release hundreds of milligrams of ammonia ions per liter of medium due to their degradation activity of amino acid-based compounds. This knowledge on secondary metabolites and ammonia ions release could be exploited for further preparation and production of biofertilizers.

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