IDENTIFICATION AND CHARACTERIZING OF POTASSIUM SOLUBILIZING BACTERIA GROWN ON OLD MICA HEAPS.

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By

DASSANAYAKE LEKAMLAGE KALANA LANKA MAHESH DASSANAYAKE

Mineral Resources and Technology Degree Program
UvaWellassa University, Sri Lanka

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Abstract

Plants basically supplement nutrient requirements from soil. However, when cultivated in agricultural setup soil nutrient availability could be a limiting factor. In such situations it may be necessary to supplement nutrients additionally with agro fertilizers which incur large expenses to the farmer. Use of agro fertilizers in large amounts could results in environmental problems therefore to overcome this problem introduce bio fertilizers. NPK consider as macro nutrients these are highly affected for plant growth and production. Plants K requirement can be solved by use of mineral fertilizers specially mica and feldspar. Fresh mica is mainly used for export purposes disposed decayed micas. These can be used as bio fertilizers. The release of elements from the two micas phlogopite and biotite is slow, but the release of potassium can be accelerated through biologically induced activities. Mainly potassium solubilizing bacteria help for potassium leaching (*Bacillus* spp.). The objective of the present study is to obtain optimum potassium leaching bacteria and optimum potassium leaching time then increase fertilizer value of by grow them on mica. Bacterial strains were identified which growing on weathered mica samples. Dilution series pour plate and streak plate methods were used for separately identified bacterial strains. Then three gram positive bacterial strains were identified by using gram staining method. Two bacillus strains BSP1, BSP2 and one Coccus strain were obtained from cultures. Pikovskaya, Aleksandrov's and PDA were used as culture media. 250nm particle size grounded Fresh mica samples were used for bacterial inoculations. Potassium leached data were taken from AAS method. According to results BSP2 leached more potassium than other strains and also it leached maximum potassium after two days others leached after three days. All the bacterial strains leach higher potassium amount from biotite than phlogopite.

Key words: Mica, *Bacillus* spp., Potassium