ISOLATION OF THE PHOSPHATE SOLUBILIZING BACTERIA FOR THE PRODUCTION OF BIOFERTILIZER

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ABSTRACT

A study was conducted to isolate phosphate-solubilizing bacteria (PSB) from soil and root samples of sugarcane and different grasses. Pikovskaya's (PVK) agar media was used for the isolation of the phosphate solubilizing bacteria and the ninety six bacteria isolates were screened for isolation. There were both gram positive and gram negative bacteria isolates. Phosphorus solubilization ability was studied by determining the phosphate solubilizing index. The highest phosphate solubilizing index (4.5000 ± 1.5000) was found in UWUP-244 strain grown in PVK plate. UWUP-243, UWUP-214, UWUP-200, UWUP-203, UWUP-269, UWUP-207, and UWUP-204 showed relatively high solubilization index. Bacteria isolates grown in spent wash PVK medium and 78 bacteria isolates were able to grow on that medium. Selected twelve phosphate-solubilizing bacteria isolates were used to determine the survival of the bacteria in the different concentrations of spent wash solutions. The selected bacteria were survived in the 20% spent wash solutions for one week. Therefore spent wash has potential to utilize as a carrier material for the phosphate solubilizing biofertilizer

Key words; Phosphate-solubilizing bacteria, Phosphate solubilizing index, Spentwash, Biofertilizer