

EVALUATION OF BIO-PHOS AS A MICROBIAL PHOSPHORUS SOLUBILIZER FOR ENHANCING WHEAT YIELD, P UPTAKE AND ITS MICROBES SURVIVAL IN THE RHIZOSPHERE

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ABSTRACT

A CRBD field experiment was conducted to study the survival of Bio-Phos microbes under field conditions and Bio-Phos efficiency to improve P uptake in plant and available P in soil treated with rock phosphate (RP) and farmyard manure (FYM). Population of Phosphorus Solubilizing Microorganisms (PSM) added to soil as Bio-Phos increased in the plant rhizosphere for the first 60 days in the Bio-Phos alone treatment and for 30 days where it was added along with FYM and RP. Count was higher in those treatments where soil was supplemented with FYM, indicating either presence of PSM in FYM or faster rate of multiplication of PSM in the presence of FYM. PSM+FYM+RP treatment out-yielded (3.32t ha⁻¹) all other treatments and showed highest total P uptake (267 kg ha⁻¹) indicating P availability from both organic and inorganic sources. A comparison of control with Bio-Phos and RP with Bio-Phos+RP treatments indicated that wheat grain yield increased 21% and 35% and grain P increased 93% and 100% respectively. Soil P was improved with Bio-Phos and FYM addition where as increase in soil P was negligible when RP was applied alone or inoculated with BP (without FYM).