



Nutritional and biochemical response of neem to seed applied bioinoculants under nursery conditions

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Abstract

The present investigation was conducted with an aim to decipher the effect of seed applied bioinoculants on nutritional status of neem seedlings and biological properties of growing media under nursery conditions. Healthy neem seeds were collected from trees growing in university campus and given five treatments viz., *Azotobacter* (nitrogen fixer; T₁), *Pantoea agglomerans* (plant growth promoting rhizobacteria; T₂), *Pseudomonas fluorescens* (phosphorus solubilizing bacteria; T₃), consortium 1 (PAU recommended; T₄), consortium 2 (T₁+T₂+T₃; T₅) and control to record their effect on survival percentage and nutrient content viz., N, P and K after 3 and 6 months. Soil attributes of the growing media along with chlorophyll and total soluble sugars from leaves were estimated after 3 and 6 months. Application of consortium 2 increased survival percentage of neem seedlings along with nutrient content of root, shoot and leaf portions of neem seedlings. Available P, K, organic carbon, alkaline phosphatase and dehydrogenase activity were also found higher in soils treated with microbial consortium 2. Among all treatments, consortium 2 reflected maximum nutrient content accumulation in all parts of seedlings. Soil analysis also revealed better rhizospheric conditions in terms of available phosphorus, potassium content and enzymatic activity. This study endorsed the positive impact of bioinoculants application on better performance of neem seedlings.

Keywords: Bioinoculants, Chlorophyll, Nitrogen, Phosphorus, Potassium, Total sugars