International Journal of ChemTech Research
CODEN (USA): IJCRGG ISSN: 0974-4290
Vol.9, No.3 pp 50-59, 2016

Influence of treated phosphate rock on growth parameters of Banana seedlings (Grand Naine)

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Abstract: Phosphate rock is a cheap source of P, but cannot be used directly as a soil amendment because of its poor water solubility. However, the bioavailability of PR can be enhanced composting and/or through use of specific bio inoculants. So, greenhouse experiment was conducted to study the effectiveness of bio available phosphorus on growth of Banana seedlings (Grand nane) which was taken as an indicator plant to represent fruit type. Results indicated that, the application of compost treated with Al-Oroba phosphate rock at a rate of 10 and 20% increased the shoot fresh weight to 35.90 and 45.28 g/plant as compared with single superphosphate which gave 17.90 g/plant fresh weight after 75 days of growth. Generally, mixing of different phosphocompost with *mycorrhizae* in sandy soil significantly increased the shoot dry weight of banana seedlings than phosphocompost without *mycorrhizae* in most growth periods of plant. The results revealed that using different phosphocomposts with *mycorrhizae* significantly increased number of leaves than phosphocompost without mycorrhizae in most growth periods of plant. In addition, the use of different phosphocomposts with mycorrhizae (AM) significantly increased plant height compared to phosphocompost free of AM in different growth periods of plant. Results concluded that, phosphocompost 20% El-Sebaiya with bacteria followed by phosphocompost 20% Al-Oroba with bacteria and inoculated with mycorrhizae was the best in promoting growth of Banana seedlings.

Keywords: rock phosphate, compost, mycorrhizae, Banana seedlings

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