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Infectivity and efficacy of Glomus fasciculatum and Acaulospora leavis on the growth and nutritional factors of Vigna radiate

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Arbuscular Mycorrhizal fungi (AMF) are known to promote plant growth by providing nutrients to plants for carbon source in return forming a symbiosis association. The present experiment was carried out under green house conditions to investigate the effect of dual inoculation with two AMF, viz. Glomus fasciculatum and Acaulospora leavis, on the Phaseolus radiata (Green gram) in sterile (St) and unsterile (Ust) soil. The results revealed that, there was increase in plant growth parameters like root colonization, fresh weight and dry weight of shoot, nitrogen content, phosphorus content, total protein and seed soluble protein in Ust + A. leavis inoculated plants, when compared to the control and all other treatments. In unsterilized soil, both Glomus fasciculatum and Acaulospora leavis showed 99 % colonization. Whereas, in sterilized soil Glomus fasciculatum showed 92 % colonization, while Acaulospora leavis showed 95% colonization. This indicates that AMF have different colonization strategies apart from the root colonization and nitrogen content and phosphorus content. The result of seed storage proteins revealed that, in G. fasciculatum inoculated sterile soil, there is slightly increase in protein concentration (0.58 mg/ 100 mg) when compare to both the controls (0.425 mg and 0.566 mg/ 100 mg). The other treatments did not show any significant increase in total soluble seed protein. The present investigation suggested that A. leavis may be used as bioinculant in sustainable agriculture to increase the yield of Green gram.

Biography

Smitha.K.C completed her M.Sc and M.phil in Botany in University of Mysore, Mysore. Now she is doing her Research in the department of studies in botany under the guidance of Dr. Rajkumar H. Garampalli.

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