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Dual inoculation of salt tolerant Bradyrhizobium and Glomus mosseae for improvement of Vigna radiata L. cultivation in saline areas of West Bengal, India

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ABSTRACT

This study is aimed as to evaluate the interaction between salt tolerant Bradyrhizobium sp. and Glomus mosseae in the rhizosphere of legume crop Vigna radiata L. under pot culture and field conditions in different saline zones of West Bengal, India. Bradyrhizobium sp. when inoculated alone showed marked increase in number of nodules, root and shoot length, total plant biomass, arbuscular mycorrhizal fungal (AMF) colonization and population etc. when compared with plants inoculated only with AMF. However, when used in combination, the inoculants showed marked change in the above mentioned parameters over single inoculation of both salt tolerant AM fungi and Bradyrhizobium. These results suggest that AMF along with Bradyrhizobium can greatly help in establishment of V. radiata L. cultivation in the saline soils of West Bengal, India. The increased production of the legume crop could also lead to further benefit of the poor farmers by up lifting their socio-economic conditions with the net profit achieved by cultivating this crop in saline stress condition of West Bengal as a second crop during rabi season.

KEYWORDS

Vigna radiata L.; Arbuscular Mycorrhizal Fungi; Bradyrhizobium; Salinity; Glomus mosseae

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