

Research Article

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Effect of integrated nutrient management on the growth and yield of senna in coastal sandy soil

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Summary

To increase the production of medicinal senna in sandy soils of coastal agro ecosystem, integrated nutrient management treatments involving inorganic fertilizers, organic manures namely FYM, vermicompost, humic acid and microbial consortium were evaluated. The initial soil was typical udipsamments and represented sandy texture and non-saline nature. In Completely Randomized Design, the following treatments were evaluated with three replications using senna as test crop. T₁ - Absolute control, T₂ - Recommended NPK, T₃ - FYM alone @ 12.5 t ha⁻¹, T₄ - Vermicompost alone @ 4.0 t ha⁻¹, T₅ - 75 % NPK + FYM @ 12.5 t ha⁻¹, T₆ - 50 % NPK + FYM @ 12.5 t ha⁻¹, T₇ - 75 % NPK + vermicompost @ 4.0 t ha⁻¹, T₈ - 50 % NPK + vermicompost @ 4.0 t ha⁻¹, T₉ - T₅ + ZnSO₄ @ 25 kg ha⁻¹ + humic acid foliar spray @ 0.3 %, T₁₀ - T₆ + ZnSO₄ @ 25 kg ha⁻¹ + humic acid foliar spray @ 0.3 %, T₁₁ - T₇ + ZnSO₄ @ 25 kg ha⁻¹ + Humic acid foliar spray @ 0.3 %, T₁₂ - T₈ + ZnSO₄ @ 25 kg ha⁻¹ + humic acid foliar spray @ 0.3 %. Bio inoculants, *Azospirillum* and phosphobacterium were applied to all the treatments excluding absolute control and recommended NPK. The results of the study indicated that the application of INM significantly improved the growth and yield of senna in coastal sandy soil. Among the treatments, application of 75 % NPK fertilizer + vermicompost @ 4.0 t ha⁻¹ + ZnSO₄ @ 25 kg ha⁻¹ with humic acid foliar spray ranked best in recording the higher growth character, leaf and pod yield of senna and available soil nutrients.

Key words : Senna, Integrated nutrient management, Sandy soil

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