

Research Article

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Effect of nutrient management approaches on maximizing productivity, nutrient uptake, soil fertility and economics of maize (*Zea mays* L.)-chickpea (*Cicer arietinum* L.) cropping sequence

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Summary

Present investigation was conducted during *Kharif* and *Rabi* seasons of 2013-14 and 2014-15 at ARS, Raddewadagi, dist. Kalaburagi, UAS, Raichur, Karnataka to study the effect of nutrient management approaches on maximizing productivity, nutrient uptake, soil fertility and economics of maize-chickpea cropping sequence. Application of nutrients through SSNM for targeted yield of 7.0 or 8.0 t ha⁻¹ recorded significantly higher growth attributes, yield and yield attributes and uptake of N, P₂O₅ and K₂O in maize-chickpea cropping system as compared to farmers practice, RDF and STL method. However, it was at par with STCR approach targeted yield of 7 or 8.0 t ha⁻¹. Organic carbon content was non-significant in maize-chickpea sequence cropping system. However, significantly higher available N, P₂O₅ and K₂O (301.05, 62.93 and 439.38 kg ha⁻¹, respectively) were noticed with nutrients applied through 125 per cent SSNM approach for targeted yield of 8.0 t ha⁻¹ as compared to absolute control, farmers practice, state recommendation, STL method and 125 per cent SSNM approach for targeted yield of 7.0 t ha⁻¹ after harvest of second crop in maize-chickpea sequence cropping system and it was on par with SSNM or STCR approach for targeted yield of 7.0 or 8.0 t ha⁻¹. The cost of cultivation of maize-chickpea sequence was higher (Rs. 50,542 ha⁻¹) with nutrients applied through 125 per cent SSNM approach for targeted yield of 8.0 t ha⁻¹. However, the higher maize-equivalent yield, gross returns, net returns and BC ratio (19083 kg ha⁻¹, Rs.2,53,985, Rs. 2,04,279 ha⁻¹ and 5.11, respectively) could be achieved in SSNM approach targeted yield of 8.0 t ha⁻¹ followed by STCR approach targeted yield of 8.0 t ha⁻¹ (18751 kg ha⁻¹, Rs. 2,49,360, Rs. 1,99,828 ha⁻¹ and 5.03, respectively) in maize-chickpea sequence cropping system.

Key words : Targeted yield, Productivity, Nutrient uptake, Soil fertility, Economics

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