Integrated nutrient management in sorghum (*Sorghum bicolor*) – chickpea (*Cicer arietinum*) cropping sequence under irrigated conditions

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ABSTRACT
A field experiment was conducted during 2001-02 and 2002-03 at Cropping System Research Project, Rahuri, Maharashtra, to study the effect of integrated nutrient management in sorghum [*Sorghum bicolor* (L.) Moench]-chickpea (*Cicer arietinum* L.) cropping sequence under irrigation. Application of 75 % recommended dose of fertilizer (RDF) + farm yard manure (FYM) + biofertilizer [*Azospirillum* and phosphate-solubilizing bacteria (PSB)] gave significantly higher plant height, dry matter, yield attributes and grain and fodder yields of sorghum and was at par with application of 100 % RDF through inorganics alone showing 25 % saving of nutrients. The residual effect of application of 5 tonnes FYM/ha to preceding sorghum resulted in significantly higher growth, yield attributes and yield of chickpea owing to 100 % RDF to chickpea and at par with that of 50 % RDF showing 50 % saving of nutrients. The net monetary returns and benefit : cost (B:C) ratio of a sequence were significantly higher owing to 100 % RDF which were at par with that of 75 % RDF + FYM + biofertilizer. The fertilizer levels to chickpea showed the highest net monetary return owing to 100 % RDF and highest B:C ratio owing to 50 % RDF. Significantly higher nutrient balance was recorded because of 75 % RDF + FYM + biofertilizers applied to sorghum and 100 % RDF applied to chickpea.

Key words: INM, Sorghum-chickpea sequence, Growth, Yield, Economics, Nutrient Balance.