# LONG TERM NUTRIENT MANAGEMENT INFLUENCES NUTRIENT USE EFFICIENCY, AGRONOMIC EFFICIENCY AND TRANSLOCATION OF NUTRIENTS IN RAINFED RICE

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**Abstract:** On firm experimental data was generated from a long term experimental trial on conjunctive use of organic and inorganic nutrients on productivity and soil health of rice –lentil crop in a rainfed ecosystem under All India Coordinated Research Project on Dry land Agriculture. The present experiment was carried out during *kharif season* of 2008 to 2011 at Banaras Hindu University, Varanasi, India. The experiment was laid out with six treatments namely, control (no nutrient supplemented), 100% RDF (80-40-30 kg $ha^{-1}$ N:P:K), 100% N through FYM, 50% N through FYM, 50% RDF + 50% N through FYM and farmer's practice (only 20 kg N $ha^{-1}$) in an *udic ustochrept* of transect 4 of the IGP (Indo Gangetic Plain) region. The experiment indicated that combined application of 50% RDF + 50% N through FYM was a superior treatment for increasing grain as well as straw yield. The nutrient use efficiency, apparent recovery of nutrients, soil nutrient balance sheet and yield were also found higher in conjunctive use of organic and inorganic nutrient sources. The results further demonstrated that the conjunctive use of organic and inorganic source of fertilizer significantly increased uptakes of P and K but higher N uptake found with 100% RDF under rainfed condition.

**Keywords:** Inceptisol, fertilizer use efficiency, nutrient uptake/ translocation, rainfed, rice yield

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