RESIDUAL EFFECT OF ORGANIC AND INORGANIC NUTRIENT SOURCES ON NUTRIENT UPTAKE AND YIELD OF RAINFED LENTIL

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Abstract: On farm experimental data was recorded during *rabi* season of 2008 to 2011 at Banaras Hindu University, Varanasi, India in a long term nutrient management experiment in a rainfed rice based system under All India Coordinated Research Project on Dry land Agriculture. 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}) applied for *Kharif* direct seeded rainfed rice crop in an Inceptisol. The residual effect of these treatments on yield and nutrient uptake efficiency was studied on rainfed *rabi* lentil crop. The experimental findings indicated that crops grown under 100% N through FYM (T_3) treatment was significantly superior in increasing grain, stubble yield as well as protein yield of lentil. The conjunctive use of organic and inorganic source of fertilizer significantly induced to release higher concentration of N, P, K and S in the soil available pool thereby increased uptake by lentil plant at harvest. A significantly higher yield and economic return (B: C=0.72) was noted when the crop was grown under 100% N through FYM followed by T_5, 50% RDF + 50% N through FYM (B: C=0.62) and T_2, 100% RDF (B: C=0.54).

Keywords: Lentil, FYM, nutrient uptake, rainfed

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