EFFECT OF OPTIMAL, SUB-OPTIMAL AND INTEGRATED NUTRIENT MANAGEMENT ON SOIL PROPERTIES AND NUTRIENT UPTAKE ON RICE (*ORYZA SATIVA*)

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Abstract: The present investigation entitled "Effect of optimal, sub optimal and integrated nutrient management on soil properties and nutrient uptake on rice (*Oryza sativa*)" was carried out at the Research Cum Instructional Farm IGKV., Raipur (C.G.) during *kharif* season of 2010. The soil of experimental field was '*Inceptisols*' locally known as *Matasi*. It was neutral in reaction, low in nitrogen, medium in available phosphorus and potassium. The experiment was laid out in randomized block design with 3 replications. The results revealed that amongst the different optimal, sub-optimal and integrated nutrient management practices using green manure, farmyard manure and chemical fertilizers, T_{10} consisting of 50% RDF + 50% N through green manuring recorded the highest growth , energy output (178.38 MJ x 10^3) and NPK content in soil. Application of 100% RDF (80:60:40 kg NPK ha^{-1}) also proved superior over other integrated nutrient management systems consisting farmyard manure and rice residues for energy output (176.75 MJ x 10^3). Sub-optimal doses of nutrients failed to provide considerable yield advantage and build-up of nutrients in soil as compared to optimal level or integrated nutrient management options.

Keywords: Nutrient management, Nutrient uptake, Soil properties, Energy

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