

YIELD ADVANTAGE OF OPTIMAL, SUB OPTIMAL AND INTEGRATED NUTRIENT MANAGEMENT ON YIELD POTENTIAL AND ECONOMICS OF RICE (*ORYZA SATIVA*) IN RICE-WHEAT (*TRITICUM AESTIVUM*) CROPPING SYSTEM

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Abstract : The present investigation was carried out at IGKV., Raipur (C.G.) during *kharif* season of 2010. The soil of experimental field was 'Inceptisols' locally known as *Matasi*. The experiment was laid out in randomized block design with 3 replications. The results revealed that T₁₀ consisting of 50% RDF + 50% N through green manuring recorded the highest growth and yield attributing characters and recorded maximum net return (Rs. 46,117 ha⁻¹) and NPK content in soil under investigation. Application of 100% RDF (80:60:40 kg NPK ha⁻¹) also proved superior over other integrated nutrient management systems consisting of farmyard manure and rice residues for yield (55.19 qha⁻¹), net return (Rs.44,962 ha⁻¹) and B:C ratio (2.52). Sub-optimal doses of nutrients failed to provide considerable yield advantage and nutrients build-up in soil as compared to optimal level or integrated nutrient management options.

Keywords : Economics, Integrated nutrient management, Nutrient uptake, Rice-wheat cropping system, Yield potential.

REFERENCES

Choudhary, S.K. and Thakur, R.B. (2007). Efficient farmyard manure management for sustained productivity of rice (*Oryza sativa*)-Wheat (*Triticum aestivum*) cropping system. *Indian Journal of Agricultural Sciences* **77** (7):443-444

Gill, M.S., Pal S.S. and Ahlawat I.P.S. (2008). Approaches for sustainability of rice rice (*Oryza sativa*)- wheat (*Triticum aestivum*) cropping system in Indo-Gangetic plains of india. *Indian J. Agron* **53** (2):81-96.

Gupta, V., Sharma, R.S. Sharma and Vishwakarma, S.K. (2006). Long-term effect of integrated nutrient management on yield sustainability and soil fertility of rice(*Oryza sativa*)-wheat (*Triticum aestivum*) cropping system. *Indian Journal of Agronomy* **51** (3):81-96.

Kumari, N., Singh, A.K., Pal, S.K. and Thakur, R. (2010). Effect of organic nutrient management on yield, nutrient uptake and nutrient balance sheet in sented rice (*Oryza sativa*). *Indian J. Agron.* **55** (3):220-223.

Paikray, R.L., Mahapatra, B.S. and Sharma, G.L. (2001). Integrated nitrogen management in rice (*Oryza sativa*)-wheat (*Triticum aestivum*) cropping system. *Indian Journal of Agronomy* **46** (4):592-600.

Pandey, N. and Verma, A.K., Anurag and Tripathi R.S. (2007). Integrated nutrient management in transplanted hybrid rice (*Oryza sativa*). *Indian J. Agron.* **52** (1):40-42.

Sharma, S.K. and Sharma, S.N. (2002). Balance sheet of nitrogen, phosphorus and potassium under different rice (*Oryza sativa*) – based cropping systems. *Indian J. Agron.* **47** (1):6-11.