

PERFORMANCE AND WATER USE EFFICIENCY OF TRANSPLANTED RICE (*ORYZA SATIVA* L.) AS AFFECTED BY MOISTURE REGIMES & INTEGRATED NUTRIENT SUPPLY SYSTEMS

Vimal Pratap Pandey^{*#}, R.A. Singh^{*}, G.R. Singh^{*} and Pradeep Sherawat^{**}

^{*} Narendra Deva University of Agriculture & Technology, Kumarganj, Faizabad-224229 (U.P.)

^{**} S.V.B.P.U.A. & T. Meerut

[#] E-mail : vimal2724@gmail.com

Abstract : A field experiment was conducted at the Agronomy Research Farm, Narendra Deva University of Agriculture & Technology, Narendra Nagar (Kumarganj) Faizabad (U.P.) during *Kharif* season 2007-08. The experiment was laid out in split plot design with 4 replications comprising (3) three levels of moisture regime (7 cm irrigation 1, 3 and 5 DADPW) and 4 nutrient supply system (100 % NPK, 75 % NPK + 25 % N through FYM, 75% NPK + 25% N through biocompost and green manuring + 75% NPK). The soil of experimental plots was silty loam in texture with low available N, P and high K. The results indicated that 7 cm irrigation 1 DADPW was found significantly superior over 7 cm irrigation at 3 and 5 DADPW in respect to growth characters, viz., plant height, dry matter, LAI, number of shoots per hill, yield and its attributes. Nutrient management practices had also significant effect on growth parameters as well as yield and yield attributing characters. Application of recommended dose of NPK (120:60:40 kg ha⁻¹) through chemical fertilizers found superior over rest of the nutrient management practices, which was closely followed by green manuring supplemented with 75% recommended NPK, but significantly superior over rest of the integrated nutrient supply systems. Highest grain and straw yield was obtained under 100% NPK through chemical fertilizers which was significantly superior over FYM and biocompost + 75 % recommended NPK. The maximum water use efficiency was computed with 7 cm irrigation 1 DADPW, F₄ (green manuring + 75% NPK) nutrient supply system.

Keywords : Transplanted rice, Organic manure, IPNS, Integrated nutrient supply system, Nutrient removal, Nutrient uptake, Moisture regime, WUE, Yield

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