RESEARCH ARTICLE

YIELD MAXIMIZATION OF HYV AND SCENTED VARIETIES OF RICE

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Abstract: The field experiment on "Yield maximization of HYV and scented varieties of rice" was conducted during *kharif* seasons of 2015 at the Research Farm, IGKV, RMD College of Agriculture & Research Station Ambikapur, Surguja (Chhattisgarh). In experiment first the main plot consisted two treatment of varieties *viz.* Chandrahasni (V_1) and Bamleshwari (C_2). While the sub- plot consisted of seven treatments of nutrient management *viz.* N_1- 20×10 cm with RDF(120:60:40 NPK kg/ha), N_2- 20×10 cm with 125% RDF(10% N at flowering)+5t FYM, N_3- 15×10 cm with 125% RDF(10% N at flowering)+5t FYM, N_4- 20×10 cm with 150% RDF(K in two splits + 10% N at flowering)+5t FYM/ha, N_5- 15×10 cm with 150% RDF(K in two splits +10% N at flowering)+5t FYM/ha, N_6- 20×10 cm with 150% RDF(K in two splits + 10% N at flowering)+10t FYM/ha and N_7- 15×10 cm with 150% RDF(K in two splits + 10% N at flowering)+10t FYM/ha. In experiment second the main plot consisted two treatment of varieties *viz.* Jeerafool (V_1) and Pusa Basmati (C_2). While the sub- plot consisted of seven treatments of nutrient management *viz.* N_1- 20×10 cm with RDF(60:50:50 NPK kg/ha), N_2- 20×15 cm RDF+5t FYM, N_3- 20×15 cm with RDF + 5t FYM + 5 t GM, N_4- 20×15 cm with 75% RDF+10t FYM/ha, N_5- 20×15 cm with 50% RDF+10t FYM/ha+ 10 t GM + mechanical weeding, N_6- 20×15 cm with 50% RDF+10t FYM/ha+ 10 t GM + mechanical weeding + silicon spray + ZnSo4 and N_7- 20×15 cm with 150% N + 10 t FYM +Staking. The both experiment was laid out in split plot design with three replication. In experiment first the rice variety Bamleshwari recorded significantly higher grain (7.93t/ha) and biological yield (16.82 t/ha) over Chandrahasni (6.97t/ha) and (14.74t/ha) which was 13.7 and 14.1% higher. In case of nutrient management practices the higher grain and biological yield was obtained with closer spacing and 150% RDF +10 t FYM (7.83 and 16.67 t/ha) followed by same geometry and dose of NPK + 5t FYM/ha (7.70 and 16.55 t/ha) the yields with these two treatments were at par, however wider spacing (20×10cm) 150% RDF+10t FYM gave marginally lower grain 2.2 and total yield 1.4% over closer spacing 15×10 cm. 150% RDF + 5t FYM/ha may be on account of higher plant population (33% higher hills/m^2) per unit area and the difference of only organic manure FYM 5t/ha. In experiment second the Local scented fine rice variety Jeerafool had significantly tallest plants while Pusa Basmati-1 had the shortest plants, number of total tillers, effective tillers (panicle/m2) and 1000-grain weight were significantly higher under Pusa Basmati -1 but panicle length number of grains/ panicle and panicle weight were significantly higher under jeerafool over Pusa Basmati -1. The data grain yield showed significant differences in the both rice cultivars. Jeerafool produced 11.4 % higher grain yield over Pusa Basmati-1. Application of 50% NPK of RDF with 10 t FYM + 10 t GLM+, mechanical weeding + silicon 3% spray+ 20 kg/ha ZnSo4 produced grain and biological yield of 4.3 and 9.16 t/ha, respectively while both the yields were almost equal in application of 150% N only with 10t FYM + staking and the yield were also at par with the treatment i.e, 50% NPK + 10t FYM + 10t GLM + mechanical weeding.

Keywords: Yield maximization, Rice, Fertilizer, Production

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