

EFFECT OF METHOD OF PLANTING AND NUTRIENT MANAGEMENT ON YIELD OF SHORT GRAIN AROMATIC RICE (*ORYZA SATIVA* L.)

D.K. Gupta*

RMD College of Agriculture & Research Station, Ajirma,
Ambikapur, Surguja (Chhattisgarh) – 497001
Department of Agronomy,
Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.), 492 012 India
Email: gupta_dinesh11@yahoo.co.in

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Abstract: The field experiment on “Effect of method of planting and nutrient management on yield of short grain aromatic rice (*Oryza sativa* L.)” was conducted during *kharif* seasons of 2017 at the Research Farm, IGKV, RMD College of Agriculture & Research Station Ambikapur, Surguja (Chhattisgarh). Treatments comprised of two method of planting viz., SRI and normal transplanting as main plot treatments, two nutrient management practices viz. RDF- 100% inorganic, RDF-150% through 50% inorganic + 50% organic as sub-plot and 5 varieties in sub-sub plot during *kharif* seasons in split-split plot design with three replications. The scented rice yields are stagnating or declining in post green revolution era mainly due to imbalance in fertilizer, soil degradation, type of cropping system practiced, lack of suitable rice genotypes and other agro-techniques. Partial substitution of chemical fertilizer with organic sources of nutrients is useful in different rice-based cropping systems. The use of excessive chemical fertilizer & pesticide are causing environmental hazard. It is therefore necessary to develop a suitable production system in this context proper selection of varieties, optimum density (spacing) per unit area and appropriate nutrient management are important for achieving higher yields. The Planting method in SRI practices the number of tiller was significantly higher than normal planting and non- significantly higher with plant height, length of panicle and 1000-grain weight, grain yield and biological yield. SRI planting method recorded higher net return and B: C ratio (Rs. 57869 ha⁻¹ and 1.54) lowest in normal planting (Rs. 53349 ha⁻¹ and 1.35). In case of nutrient management practices the application of 150% NPK of RDF (50% inorganic + 50% organic) the plant height and no. of grain per panicle were significantly higher than 100% NPK of RDF (100% inorganic) and non- significantly higher with total no. of tiller, effective tiller, length of panicle and 1000-grain weight, grain yield and biological yield. 100% NPK of RDF recorded higher net return and B: C ratio (Rs. 57201 ha⁻¹ and 1.55) than 150% NPK of RDF (Rs. 54018 ha⁻¹ and 1.35). The five varieties, Badshahbhog selection-1, Vishnubhog selection-1, Dubraj selection-1, Tarun bhog selection-1 and CG Sugandhit bhog selection-1 exhibited differences in growth, yield attribution and finally grain & economics. Rice variety vishnubhog selection-1 had significantly tallest plants while CG. sugandhit selection-1 had the shortest plants. The number of total tillers per m² and effective tillers per plant in CG.sugandhit selection-1 were significantly higher and at par with badshahbhog selection-1 and vishnubhog selection-1 but 1000-grain weight, panicle length were significantly higher under vishnubhog selection-1. In case of number of grains per panicle was higher under CG.sugandhit selection-1 over other varieties. Rice variety CG sugandhit bhog selection-1 recorded significantly higher grain (42.74 q ha⁻¹) and biological yield (123.04q ha⁻¹) over dubraj selection-1 (grain 32.42 ha⁻¹) and biological yield 100.07 ha⁻¹) but at par with vishnubhog selection-1(42.47 q ha⁻¹ and 124.73 q ha⁻¹), tarun bhog selection-1(37.91 q ha⁻¹ and 122.13 q ha⁻¹) and badshahbhog selection-1(37.0 q ha⁻¹ and 109.0 q ha⁻¹). CG sugandhit bhog selection-1 recorded higher net return and B:C ratio (Rs. 65323 ha⁻¹ and 1.71) lowest in dubraj selection-1 (Rs. 40947 ha⁻¹ and 1.41).

Keywords: Nutrient management, Aromatic rice, Grain

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*Corresponding Author