



Research Article

Effects of genotypes and methods of micronutrient application on tillering behaviour, growth and yield of aerobic rice

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Abstract : The field experiment on the effect of genotypes and method of micronutrient application on tillering behaviour, growth and yield of aerobic rice was conducted during *Kharif* 2004 and 2005 at College of Agriculture, Navile Farm, Shivamogga. The study consisted of five genotypes *viz.*, BI-43, Rasi, BI-27, KRH-2 and H-9 with four method of micronutrient application *viz.*, S₁: Enriched FYM with Zn and Fe, S₂: Seed soaking S₃: Direct seeding S₄: Soil application of Zn and Fe. The results revealed that among the genotypes, BI-43 recorded significantly higher grain yield (49.5 q ha⁻¹) and higher number of tillers (23.5 plant⁻¹) as compared to other genotypes. Among the method of micronutrient application, soil application of zinc and iron recorded significantly higher grain yield (49.5 q ha⁻¹) as compared to other methods.

Key Words : Genotypes, Micronutrient, Tillering behavior, Direct seeding, Seed treatment

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INTRODUCTION

Rice (*Oryza sativa* L.) is the most important staple food crop of India. In India, rice is grown in an area of 44.6 m.ha with a production of 109.5 mt and average productivity of 2.62 t per ha. projection of India's rice production target for 2025 AD is 140 mt, which can be achieved only by increasing the rice production by over 2 mt per year in the coming decade and their has to be done against back drop of diminishing natural resource, such as waster and land. Most of the Asian countries facing severe water scarcity, threatenup sustainability of rice production (Belder *et al.*, 2002). Aerobic rice is the best alternative method of rice production under water scared areas with high yielding,

good tillering and with better root traits. Rice cropping system has been experiencing decline in productivity (Bhandari *et al.*, 2003) due to high analysis fertilizer and reduced avrge of micro nutrient application which leads to zinc and iron deficiencies (Takkar, 1996). Zinc and iron are most important micronutrients required by the rice. Zinc is a major component and activated of several enzyme involved in metabolic activities such as auxim and protein synthey's, nucleic acid and carbohydrate metabolism (Janakiraman, 2005). Genotypes responds better with different micronutrient application under aerobic situations (Castaneda *et al.*, 2002). Developing good genotypes with good tillering behaviour under different source of micronutrient application is the key factor influencing on growth and yield of aerobic rice. Keeping this in view, the present study on effect of genotypes, micronutrient application, particularly zinc and iron on growth, tillering behaviour and yield of aerobic rice was carried out.

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EXPERIMENTAL METHODS

Field experiments were carried out for two years (2004