



Effect of weed management practices on yield attributes, yield and economics of rice var. MTU-1010 under system of rice intensification

DEVENDRA KUMAR DEWANGAN* AND GOURAV JATAV

Department of Agronomy, Indira Gandhi Krishi Vishwavidyalaya, RAIPUR (C.G.) INDIA
(Email : devendewangan@gmail.com)

Abstract : The present experiment was conducted at Research cum-Instructional Farm, Department of Agronomy, Indira Gandhi Krishi Vishwa Vidyalaya, Raipur (C.G.) during *Kharif* season of 2009 to find out the effect of weed management practices on plant height, no. of tillers, SPAD value, dry matter accumulation, grain yield and net return of rice var. MTU-1010 under system of rice intensification. The twelve different weed management practices were laid out in Randomized Block Design (RBD) with three replications. Rice variety “MTU-1010” was grown as a test crop. Rice was transplanted on 27th July, 2009 with a spacing of 20 x 20 cm. The crop was fertilized with 90, 60 and 40 kg N, P₂O₅ and K₂O ha⁻¹, respectively. The results of experiment indicated that growth character like plant height, number of total tillers, chlorophyll content, CGR, dry matter of rice, at initial period of crop growth responded significantly better under two ways mechanical weeding performed at 12, 25 and 35 DAT and this was followed by one way mechanical weeding. At later period of growth, significant higher number of effective tillers, total tillers, number of grains panicle⁻¹, panicle length, weed index, straw yield and grain yield were produced under fenoxaprop-p-ethyl 60 g ha⁻¹ + ethoxysulfuron 15 g ha⁻¹ at 20 and 35 DAT, which was at par with hand weeding, fenoxaprop-p-ethyl 60 g ha⁻¹ + ethoxysulfuron 15 g ha⁻¹ at 20 DAT + MW performed on two ways at 35 DAT. It was also observed that all the herbicides treatments were effective and significantly enhanced the grain yield over control. In the experimental field was dominated by mainly *Echinochloa colona*, *Alternanthera triandra*, *Cyperus iria*, *Fimbristylis miliacea* throughout the crop season.

Key Words : SRI, Yield, Weed management, SPAD value, Rice

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INTRODUCTION

Rice (*Oryza sativa* L.) is the most important and extensively grown premium food crop of the world and important staple food of more than 60 per cent of the world's population. The static and low productivity of rice in India suggests the yield maximization as the most promising route for achieving growth. In order to meet the requirement of growing population there is need to boost its productivity by generating the location specific effective agro techniques. Increase in productivity mainly depends upon the proper method of rice establishment and effective weed management strategies.

The system of rice intensification (SRI) is one such alternative, integrated and agroecologically sound approach and system that claims to boost yield with fewer plants and fewer inputs resulting lower cost to farmers (Thiyagarajan *et al.*, 2002). In Chhattisgarh state, farmers generally control weed manually. The physical methods are costly, labour consuming and the advantage of manual weeding could only be achieved when it is performed timely. Now a day's timely unavailability of labourers make weed management more difficult and costlier but with the application of mechanical weeding and new post emergence herbicides either alone or in combination, give effective alternative to labourers dependent of weed management. Thus, an effective and economic weed

* Author for correspondence