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PERFORMANCE OF SYSTEM OF RICE INTENSIFICATION (SRI) METHOD

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Abstract

A total of 18 farmers were selected for frontline demonstrations on SRI method in Rice (cv. Samleshwari & Karmamasuri) in 8 ha area from different villages. Based on mean of two cultivars of rice, yield of rice under demonstration recorded was 46.0 q ha^{-1}, whereas yield of farmers practice was 36.9 q ha^{-1}. The yield enhancement due to technological intervention was 24.7 per cent over farmers' practice. Mean value of both the cultivars of average net returns from recommended practice were observed to be Rs. 31605 in comparison to farmers practice i.e. Rs. 20275. The Benefit-cost ratio of improved practice and farmers practice were 2.92 & 2.0 and 3.46 & 2.43 for Samleshwari & Karmamasuri, respectively. Whereas mean values of Benefit-cost ratio were found to be 3.2 & 2.2, respectively.

Key words : SRI method, rice, benefit-cost ratio.

Introduction

In India, rice is the most important staple food for over two thirds of the population. It is a means of livelihood for millions of rural households and it plays a vital role in our national food security, hence the slogan "Rice is Life' is most appropriate. The system of rice intensification (SRI) is gaining steady acceptance by the farmers due to advantages like less seed requirement, higher water use efficiency and ability to withstand higher degree of moisture stress than traditional process of rice cultivation. With SRI, Satyanarayana and Babu (2004) reported average *Kharif* yield of 8.25 t ha^{-1} from 167 farmers' field against state average of 3.87 t ha^{-1} for conventional cultivation of Andhra Pradesh. System of Rice Intensification (SRI) is another emerging water saving technology, with increase in crop yield.

During *Kharif* 2009, area sown under rice in Chhattisgarh was 3519.29 thousand hectares and average yield of 1408 kg ha^{-1}. As for as Raipur District is concerned area covered under rice crop was 529.9 thousand ha with an average yield of 1800 kg ha^{-1} during the year 2009 (Krishi Diary- 2011, IGKV, Raipur, C.G.). Productivity of rice in Chhattisgarh is low because of inadequate knowledge about its cultivation and high-yielding varieties. Keeping the above points in view, the FLD on SRI method in Rice (cv. Samleshwari & Karmamasuri) was started with the objectives of showing the productive potentials of the new production technology (SRI) under real farm situation over the locally cultivated rice crop.

Methodology

The present study was carried out in the farmers' fields of different villages of Raipur District by the Krishi Vigyan Kendra, Bhatapara (Raipur) under IGKV, Raipur during *kharif* 2009. A total of 18 farmers were selected for frontline demonstrations on SRI method in Rice (cv. Samleshwari & Karmamasuri) in 8 ha area from different villages. In demonstration trails, quality seed was provided and all the cultural operations were performed under the close supervision of KVK scientists. The purpose of this FLD's was to know the yield gap between improved practice & farmers practice . The data on yield attributing characters as panicles at harvest (no. m^{-2}), Grains per panicle at harvest (no.) and 1000-seed weight (g) was colleted randomly from different villages. The information on output data and inputs used per hectare was collected from the frontline demonstration trails and local practices commonly adopted by the farmers of this region.

Formulas used are :

*Percent increase in yield (Yield gap) = 100 × (Yield of IP – Yield of FP) /Yield of FP.

IP: Improved Practice(SRI) , FP: Farmers Practice

*Benefit- Cost Ratio = Gross Return / Gross Cost

Table 1 : Technological Impact of SRI method on yield attributing characters and yield of rice in *Kharif* 2009.

Rice variety	No. of FLD	Area (ha)	Panicles at harvest (No. m^{-2})			Grains per panicle at harvest (No.)			1000 -seed wt (g)			Yield (q ha^{-1})		
			IP	FP	% increase	IP	FP	% increase	IP	FP	% increase	IP	FP	% increase
Samleshwari	11	5	254	190	33.7	130	115	13.0	20	16	25.0	41.5	33.5	23.88
Karmamasuri	7	3	235	198	18.7	138	130	6.2	22	18	22.2	50.5	40.25	25.47
Mean			245	194	26.2	134	123	9.6	21	17	23.6	46.0	36.9	24.7

Table 2 : Economic performance of improved practice over farmers practice of rice in *Kharif* 2009.

Rice variety	Average cost of cultivation (Rs. ha^{-1})		Average gross return (Rs. ha^{-1})		Average net return (Rs. ha^{-1})		Benefit-Cost ratio	
	IP	FP	IP	FP	IP	FP	IP	FP
Samleshwari	14200	16700	41500	33500	27300	16800	2.92	2.00
Karmamasuri	14590	16500	50500	40250	35910	23750	3.46	2.43
Mean	14395	16600	46000	36875	31605	20275	3.2	2.2

Results and Discussion

The technological impact of SRI method in two cultivars of rice (cv. Samleshwari & Karmamasuri) is presented in table 1. The data reveals that in SRI method the panicles at harvest (no. m^{-2}), Grains per panicle at harvest (no.) and 1000-seed weight (g) of improved practice was about 26.2, 9.6 and 23.6 per cent higher than the farmers practice , respectively. The data reveal that under improved practice (SRI method), the performance of rice yield was found to be substantially higher than that under farmers practice. Based on mean of two cultivars of rice, yield of rice under demonstration recorded was 46.0 q ha^{-1}, whereas yield of farmers practice was 36.9 q ha^{-1}. The yield enhancement due to technological intervention was 24.7 per cent over farmers' practice. Overall, it can be concluded that planting younger seedlings singly quickly after removing from nursery might not have suffered from transplanting shock much and recovered rapidly to result in increased root growth to support for increased tillering and shoot dry matter production. The increase in shoot dry matter production might have supported improvement in yield attributing characters, which ultimately lead to increased yields. Stoop *et al*. (2002) reported increased yield under SRI method because of use of young seedlings at the two-leaf stage with one seedling per hill, wide plant spacing and intermittent drainage and soil drying for soil aeration during the vegetative stage. System of rice intensification (SRI) has attracted attention because of its apparent success in increasing rice yields.

Economic performance of improved practice over farmers practice *i.e.* gross expenditure, gross returns, net returns and B:C ratio are presented in table 2. The data clearly indicated that the net returns from the improved practice (SRI method) were substantially higher than the farmers practice for both the cultivars. Mean value of both the cultivars of average net returns from improved practice (SRI method) was observed to be Rs. 31605 in comparison to farmers practice *i.e.* Rs. 20275. The Benefit-cost ratio of improved practice and farmers practice were 2.92 & 2.0 and 3.46 & 2.43 for Samleshwari & Karmamasuri, respectively. Whereas mean values of Benefit-cost ratio were found to be 3.2 & 2.2, respectively. The earlier studies on economics of SRI cultivation also indicated higher profit with this method of cultivation (Prasad *et al*., 2001).

It is concluded that front line demonstration can be used as a most beneficial tools for enhancing adoption level of farmers about improved cultivation practices of rice. The front line demonstration (FLDs) plays a very important role to disseminate recommended technologies because it shows the potential of technologies resulting in an increase in yield at farmers' level. This will substantially increase the income as well as the livelihood of the farming community.

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