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Research Article

IMPACT OF FL DS OF SOYBEAN PRODUCTION TECHNOLOGY IN NARMADA DISTRICT

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ABSTRACT

A study was undertaken to assess the performance of the frontline demonstrations by krishi vigyan kendra on soybean crop in adoptive village of Narmada district. Soybean is an important oilseed crop that is widely grown as a valuable source of protein and oil for human nutrition in the world. However, its productivity is very low, due to non-adoption of improved technologies. Front line demonstrations on soybean were conducted on an area of 0.24 ha. Each from kharif season 2012-13 to 2015-16 at various farmer's fields. The mean of five years in demonstration plots of improved technologies gave higher yields (20.00 Q /h) over farmer's practice. Highest net returns of Rs. 36951 ha-1 with B:C ratio of 3.80 were obtained in demonstration plots as compared to farmer's practice Rs. 28917 ha-1 and 3.40,respectively. There was a larger impact of the technology over the farmer's practice. By conducting front line demonstrations of proven technologies yield, water use efficiency and net income of soybean can be enhanced to a great extent.

INTRODUCTION

MATERIALS AND METHODS

This study was conducted in the adoptive village of Narmada district in during the year 2012 to 2015-16 The farmers selected are mainly of irrigated situation. The FLD's improved package of practices for productions technologies under irrigated conditions on soybean were conducted on an area of 0.24 ha each from kharif season 2012 to 2016 at various farmer's fields. The improved packages viz, new varieties (JS-335) recommended dose of fertilizer(50:75:00 N:P:K kg/ ha), irrigation scheduling as per critical growth stages, i.e. branching, flowering and pod filling stage with new agronomic practices.

RESULTS AND DISCUSSION

The findings in respect of the yield performance of soybean are depicted in Table-1. Results of 82 front line demonstrations conducted during 2012, 2013, 2014. 2015 and 2016 in 24 ha area on farmers fields of 33 villages of Narmada district indicated that the cultivation practices comprised under FLD *viz.,* use of improved varieties produced on an average 20.0 per cent more yield of soybean compared to local check (1362 kg/ha).The results indicated that the front line demonstrations have given a good impact over the farming community of Narmada district as they were motivated by the new agricultural technologies applied in the FLD plots. Data further showed that the yield of soybean in the following years increased successively indicating clearly the positive impact of FLD over existing practices of soybean cultivation (Table 1). The technology gap observed may be attributed to the dissimilarity in the soil fertility status and weather conditions. Hence, variety wise location specific recommendation appears to be necessary to minimize the technology gap for yield level in different situations (Mukharjee, 2003). The highest extension gap ranged from 247 kg/ha to 300 kg/ha during the period of study emphasizing the need to educate the farmers through various means for the adoption of improved agricultural production technologies to reverse this trend of wide extension gap. More and more use of latest production technologies with high yielding variety will subsequently change this alarming trend of galloping extension gap. The new technologies will eventually lead to the farmers to discontinue the old varieties and to adopt new variety. This finding is in corroboration with the findings of Hiremath and Nagaraju (2010). The technology index showed the feasibility of the evolved technology at the farmer's fields. The lower the value of technology index more is the feasibility of the technology. As such, reduction of technology index from 6.1 (2012) to 12.2 per cent (2016) exhibited the feasibility of technology demonstrated (Table 1).

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Table 1 Productivity, technology gap, and technology index of soybean under FDs

Year	Area (ha.)	No. of farmers	Yield (Kg/ha.)			% increase over control	Technology gap (Kg/ha.)	Extension gap (Kg/ha.)	Technology Index (%)
			Potential	Demonstration	Control				
2012	5.0	11	1800	1691	1436	17.8	109	255	6.1
2013	5.0	16	1800	1641	1394	17.8	159	247	8.8
2014	3.4	16	1800	1590	1340	18.7	210	250	11.7
2015	5.6	24	1800	1660	1360	22.5	140	300	7.8
2016	5.0	15	1800	1580	1280	23.4	220	300	12.2
Mean	24.0	82	1800	1632	1362	20.0	168	270	9.3

Table 2 Gross realization (Rs/ha.), cost of cultivation (Rs/ha.), net return (Rs/ha.) and B:C ratio as affected by improved and local practices

Year	Gross realization (Rs/ha.)		Cost of cultivation (Rs/ha.)		Net return (Rs/ha.)		B:C ratio	
	IT	LC	IT	LC	IT	LC	IT	LC
2012	50727	43091	11955	11955	38772	31136	4.2	3.6
2013	52500	44600	12500	12500	40000	32100	4.2	3.6
2014	51000	42500	11955	10755	39045	31745	4.3	4.0
2015	59700	48765	12800	11800	46900	36965	4.7	4.1
2016	44240	35840	24200	23200	20040	12640	1.8	1.5
Mean	51633	42959	14682	14042	36951	28917	3.8	3.4

These results are in conformity with the findings of Jeengar *et al.* (2006). The comparative profitability of soybean cultivation with adoption of improved technology and farmers practices has been presented in Table 2. With the adoption of improved technology under FLDs recorded higher gross returns (Rs.51633/ha), net returns (Rs.36951/ha) and B: C ratio (3.8) compared to farmers practice. These results are in conformity with the findings of Raj *et al*. (2013).

Hence, by conducting front line demonstrations of proven technologies, yield potential of soybean can be increased to great extent. This will subsequently increase the income as well as the livelihood of the farming community. Similar work related to the present work was also done by Kumar *et al.* (2010); Dhaka *et al*. (2010); Mishra *et al.* (2009); Tiwari *et al.* (2003) and Haque (2000).

Economics of Frontline Demonstrations

A critical look at the figures presented in Table-2 indicates good sign of economic probability of the demonstrations than the farmer's practice. Economic analysis of yield performance of kharif demonstrations revealed that on an average for five years under study, gross returns Rs. 51633 ha-1 and Rs. 42959 ha-1recorded in demonstration and farmer's practice respectively. Further, an average for the period under study, net returns of Rs. 36951 ha-1andRs. 28917 ha-1were recorded with relatively higher benefit cost ratio of 3.80 and 3.40 in demonstration and farmer's practice respectively.

CONCLUSION

Over all previews of data signified satisfaction of farmer's about the services given by scientists through frontline demonstrations. Ultimately by conducting frontline demonstrations of proven technologies lead to increase the yield potentials. This will substantially increase the income as well as livelihood of the farming community. Therefore, it can be concluded that frontline demonstrations conducted under the close supervision of scientists is one of the most important tools of extension to demonstrate newly released crop production technologies and its management practices in farmer's field.

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