

Study on Yield Gap and Level of Demonstrated Crop Production Technology in Sagar District

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ABSTRACT

The study was conducted in the Sagar district of Madhya Pradesh with objective of Study on yield gap and level of demonstrated crop production technology in Sagar district. Training to the farmer's and participatory front line demonstrations is an efficient measure for reducing knowledge gap of farmers and enhancing productivity, generating production data and collection feed back for large adoption of the technology. Four villages adopted by KVK and total 111 demonstrations conducted on adopted farmers fields. The study concluded that, higher yields under demonstration over farmers practices was found in case of management of insect pest, organic farming, improve variety JA-4, use of zinc sulphate, followed by other demonstration.

Key words : Yield gap; Demonstration; Crop production technology

The objectives of front line demonstration on crops are to be demonstrated the superior productivity potentials of various location/ region specific technologies to practicing farmers and test there implement ability and viability and obtain feed back from the end users and bring about necessary corrections to improve there acceptability and suitability in real farm situations vis-à-vis prevailing traditional farmers practices. Front line demonstrations are also one of the methodologies to evaluate performance of technology under on farm conditions, technology adoption by the participating farmers and its diffusion to non participating farmers. Large variation in crop yield exists from place to place depending on the environment, soils type and use of cultivation practices. Training to the farmer's and participatory front line demonstrations is an efficient measure for reducing knowledge gap of farmers and enhancing productivity, generating production data and collection feed back for large adoption of the technology.

METHODOLOGY

The study was carried out in four villages namely Rajaua, Badouna, Rajakhedi and Bhapel of Sagar district of Madhya Pradesh. These all four villages adopted by KVK during four year (2000-01, 2001-02, 2002-03 and 2003-04) and total 111 demonstrations conducted on adopted farmers fields. Out of this 31 demonstration on each of technologies like, improved variety of soybean, pigeon pea and black gram and 30 demonstration on use of micronutrients (zinc sulphate) in soybean (16) and wheat (14), 6 demonstration on organic farming in

soybean, 25 demonstration on integrated nutrient management in soybean and 19 demonstration on management of insect pest in soybean were raised with recommended package of practices under supervision of KVK, scientists.

RESULTS AND DISCUSSION

The data presented in Table 1 that under demonstration plot the crop yield was found to be substantially more than that under local check during all the years. In the improved variety of soybean (J.S.-90-41), Pigeon pea (ICPL-87119) & JA-4 and black gram (PDU-1). Crop yield demonstration plots were noted to be 16.35, 8.67, 12.96 and 3.25 q/ha respectively which were 29.76, 28044, 47.44 and 31.57 percent higher over control. In case of use of micro nutrients (zinc sulphate) in soybean and wheat, organic farming, integrated nutrient management and management of insect pest the demonstration plots gave an average yield of 15.49, 27.32, 13.72, 14.69 and 14.44 q/a which accounted for 45.03, 23.17, 49.61, 44.30 and 57.29 percent increase over local check was regards to the average yield of improved variety in soybean (JS-90-41) pigeon pea (Asha) and black gram (PDU-1) under demonstration and local check was found to be 29.76, 28.44 and 31.57 percent. Higher yields under demonstration and local check was found to be 57.29, 49.61, 47.44, 45.03, and 44.30 percent management of insect pest, organic farming, improve variety JA-4, use of zinc sulphate in soybean and integrated nutrient management in soybean Respectively. Table also evident that, effect of zinc sulphate on wheat was 23.17 percent higher yield over to local check.

Table 1. Increase of yield, technology and extension index of components demonstration

S. No.	Components of Demonstration	Demonstrated crop	Demonstrated technology	No. of Demonstrated	Mean yield q/ha		Increase % over F.P.
					I.P.	F.P.	
1	J.S. 90-41	Soybean	Improved variety	9	16.35	12.60	29.76
2	ICPL-	Pigeon pea	Improved variety	10	8.67	6.75	28.44
3	87119 (Asha)	Pigeon pea	Improved variety	6	12.96	8.79	47.44
4	JA-4	Black gram	Improved variety	6	3.25	2.47	31.57
5	PUD-I	Soybean	Use of micro nutrients	16	15.49	10.68	45.03
6	Zinc sulphate	Wheat	-do-	14	27.32	22.18	23.17
7	Zinc sulphate	Soybean	PSB+Rhizobium + FYM	6	13.72	19.17	49.61
8	Organic farming	Soybean	25% Less use of NPK (75%NPK+25%FYM+FYM+Cult)	25	14.69	10.18	44.30
9	Integrated nutrient management of insect pest	Soybean	Neem gold	19	14.44	9.18	57.29

Table 2. Adoption level technology intervention of front line demonstrations

S. No.	Problem	Technological Intervention	Adoption level				Change in adoption %
			Before		After		
			f	%	f	%	
1.	Lack of knowledge and unavailability of improver variety	Variety-Soybean JS 90-41 Peagionpea ICPL 87119 JA 4	6	5.45	52	47.25	41.82
			5	4.55	38	34.44	29.99
			3	2.73	49	44.55	41.42
			3	2.73	34	30.91	28.18
2.	Lack of knowledge and no use of micro nutrients	Black gram PDU-1 Zinc sulphate in soybean 64 kg/ha & Wheat 40 kg/ha	2	1.82	35	31.82	30.00
3.	Lack of knowledge about PSB & Rhizobium Culture	Use of PSB & Rhizobium @ 2.5 kg/ha with FYM	7	6.36	32	29.09	22.73
4.	Lack of knowledge and no use of balance fertilizer	Balance use of NPK @ 100:75:25 kg/ha	4	3.64	26	23.64	20.00
5.	Lack of knowledge and Unavailability of pesticide	Neem gold @ 1 liter/ha	1	0.91	18	16.36	15.45

The Table 2 should that the assessment of adoption of technology interventions showed that the improved variety of Soybean JS 90-41, pigeon pea ICPL 87119 & JA-4 and black gram (PDU-1) were maximum popularized and adopted by, 41.82, 29.99, 41.82 and 28.14 percent farmers. Other interventions points i.e. Use of zinc sulphate in soybean (30.00%), Use of PSB & Rhizobium culture (22.73%) Use of balance dose of NPK fertilizer (20.00%) and Use of Neem gold (15.45%) were also adopted by a large number of farmers in view of their impact on crop yield. The knowledge gap about the technology and the availability was reduced by means of training and the impact was visualized by the farmers in the demonstration. Thus, it become quite effective in achieving higher production and economic returns from the investment and monetary returns can be increase substantially by training of farmers regarding important intervention points like improved variety, use of zinc

sulphate in soybean, use of PSB & Rhizobium culture, balance use of NPK and neem gold in soybean through front line demonstrations.

CONCLUSION

It can be concluded from the discussion that, higher yields under demonstration over to local check was found in case of management of insect pest, organic farming, improve variety JA-4, use of zinc sulphate, followed by wheat under demonstrations. The assessment of adoption of technological interventions showed that the improved variety i.e. Soybean JS-90-41. pigeon pea ICPL 87119 & JA-4 and black gram (PDU-1) were maximum popularized and adopted by farmers. As well as the other interventions points i.e. Use of zinc sulphate in soybean, Use of PSB & Rhizobium culture, Use of balance dose of NPK fertilizer and use of Neem gold were also adopted by a large number of farmers.

REFERENCES

1. Singh, Navab and Sharma, F.L. (2004). Impact of front line demonstration on gain in knowledge about mustard production technology among farmers. *2nd National Ext. Edu. Congress*, May 22-24, 2004. Society of Extension Education, Agra & MPUAT, Udaipur : 56.
2. Singh, D.P., Prakash, H.G. & Singh Shanker (2004) Gap in adoption of potato production technology in potato export zone of U.P. *2nd National Extension Congress*, May 22-24, 2004. Society of Extension Education, Agra & MPUAT, Udaipur : 132.