

## Impact of Frontline Demonstration (FLD) on the Yield of Rapeseed-Mustard in Gwalior District of M.P.

Raj Singh Kushwaha, Rupendra Kumar, Arvinder Kaur,  
V.S. Badauria and Naresh Gupta

Rajmata Vijayaraje Scindia Krishi Vishvavidhyalay, Krishi Vigyan Kendra, Gwalior (M.P.)

### Abstract

Frontline demonstration is an appropriate tool to demonstrate recommended technologies among the farmers. Krishi vigyan kendra gwalior conducted 72 frontline demonstrations during the years 2006-07, 2007-2008, 2008-09, 2009-10, 2010-11 and 2011-12 in the village of Nagar, Udaipur, Sundarpur, Banwar Nikodi, Himmatgarh, Kachhau, Araya, & Bhadroli. In frontline demonstration technologies the average highest yield was 18.97 q/ha, while it was 15.25 q/ha in farmers practices. The average yield during the years of the demonstration technologies was 17.57 g/ha, while it was 12.74 q/ha in farmers practices. The improved technology gave higher gross return and net return with higher benefit cost ratio as compared to farmer's practices

**Keyword-** Technology Gap, Extension Gap, B.C. Ratio Frontline Demonstration

### Introduction

Oil seeds form the second largest agriculture community in India after cereal sharing 19% of the gross cropped area and nearly 3 percent of gross national product and 10 % value of all agriculture product. Indian mustard is one of the important oilseed crops grown. India due to poor yield, oilseed production in the country does not meet the requirement of growing population. The productivity of mustard can be increased by

### Material and Methods

Methodology- the study was conducted by Krishi Vigyan Kendra Gwalior during the year 2006-07, 2007-08, 2008-09, 2009-2010, 2010-11, 2011-12 in adopted village of district during the period. 28.6 ha. Area has been covered with 72 demonstrations. The size of each front line demonstration was 0.4 ha. Before conducting frontline demonstration list of farmers was prepared from group meeting and specific skill training programme was imparted to the selected farmers regarding different aspects of cultivation<sup>[13]</sup>. The material used is given below :

1. Improved varieties Pusa jai kisan & Rohini

adoption of improved technologies with putting more area under irrigation. During 2005-06 and 2010-11, India's average share to world's production and area for rapeseed-mustard was 13.37 % and 21.67 percent, respectively. The yield (1119 kg / ha) of rape seed – mustard in India during preceding five years was about two third of the world's average (1700 kg / ha)<sup>[11]</sup>.

2. Seed treatment with carbendazime 3 gram/kg seed, Imidaclopride 5 ml/kg seed and PSB culture 5 gram/kg seed.
3. Fertilizer 80:40, 20:25 (NPKS) kg/ha.
4. Application of need based insecticides Rogar/dimethoate 30 ec 750 ml/ha. at 60-70 das.

In frontline demonstrations had take care off been use of improved varieties seeds. , seeds treatment need based application of pesticides proper plant population as well as balance dose of fertilizer with micronutrient sulphur. The necessary steps for selection of site and farmers, layout of the demonstration etc. were followed<sup>[2]</sup>. The data had been collected from both frontline demonstration plots as well as

control plots and finally the extension gap technology gap, technology index along with the benefit cost ratio were worked out as given below-  
 (Extension Gap) = Demonstration Yield- Farmers Practice Yield

$$(\text{Technology Gap}) = (\text{Potential Yield of Variety} - \text{Demonstration Yield})$$

$$(\text{Technology Index}) = \frac{\text{Technology Gap} \times 100}{\text{Potential Yield}}$$

**Results and Discussion**

The average yield of frontline demonstration was 1757 q/ha. as compared to farmers practices (i.e. 12.74 q/ha.) The average yield increased 44.19 percent over framers practices during the year (Table 1). The result indicated that the frontline demonstration has given a good impact over the farming community of the district about 20 g/ha. The average highest yield has been recorded during

2009-10 years, while the highest average yield was 15.20 q/ha.in framers practices during the year 2011-12. The farmers of the district have been motivated by the improved agriculture technologies applied in the frontline demonstration (table no. 1) these findings are in corroboration with the findings of many others<sup>[7, 10]</sup>.

**Table 1 Grain Yield And Gap Analysis Of Frontline Demonstration On Rapeseed Mustard**

Year	Area (Ha)	No. Of Demonstration	Yield (Av. G/Ha.)		Present Increased	Potential Yield G/ Ha	Technology Gap (G/Ha.)	Extension Gap (G/ Ha.)	Technology Index (%)
			Demonstration	Farmers Practices					
2006-07	5	13	17.0	11.50	48	25	8	5.5	32.0
2007-08	4	10	13.75	10.13	62.68	25	11.25	3.62	75.0
2008-09	4.8	12	18.97	12.65	49.96	25	6.03	6.32	24.12
2009-10	5.2	13	19.75	14.17	39.67	25	5.25	5.58	21.0
2011-12	9.6	24	18.40	15.26	20.65	25	6.60	3.14	26.40
<b>Total</b>	<b>28.6</b>	<b>72</b>	<b>17.57</b>	<b>12.74</b>	<b>44.19</b>	<b>25</b>	<b>7.43</b>	<b>4.83</b>	<b>29.70</b>

**Extension Gap**

The average extension gap 4.83 q/ha, has been found during this period while the average highest extension gap (6.32 g/ha.) was recorded during the year 2008-09 .This emphasized the need to educate the farmers through different means for the enhancement of adoption of improved technologies to reverse this trend of wide extension gap use of innovation production technologies with high yielding varieties will subsequently change this alarming trend of extension gap. The results of technologies will ultimate lead to the discussion of farmers to discontinue the old technology to adopt the new technology (table-1)<sup>[3,5,12]</sup>.

**Technology Gap**

The average technology gap was 7.43 q/ha. during the five years, while it was highest (11.25 q /ha.) during 2007-08.The minimum technology gap has been recorded 5.25 q /ha. During 2009-10 the technology gap may be attributed to the dissimilarly in the soil fertility status and weather conditions<sup>[10,11]</sup>.

**Technology Index**

The technology index shows the feasibility of the evolved technology at the farmers field and lower the value of technology index more is the feasibility of the technology (jeengar et al, 2006) the average technology index was 29.70 percent (table - 1)

this data shows that demonstration yield need to increase by adopting the improved technology with more carefully at farmers

field so this gap might be reduced for the benefit of farming community.

**Table 2 Economic Analysis of Demonstration Plots & Farmers Practices Rapeseed–Mustard.**

Year	Cost Of Cultivation (Rs. /Ha)		Average Gross Return (Rs. /Ha)		Average Net Return (Rs. /Ha)		B.C. Ratio		Av. Additional Cost In Demonstration Rs. /Ha.	Av. Additional Gross Return (Rs. /Ha.)	Av. Additional Net Return In (Rs. /Ha.)
	Demonstration	Farmers Practices	Demonstration	Farmers Practices	Demonstration	Farmers Practices	Demonstration	Farmers Practices			
2006-07	11390	10040	33742	26222	22402	16184	2.97	2.61	1350	7570	6268
2007-08	11390	10040	49440	30390	38050	20350	4.34	3.03	1350	19050	17700
2008-09	11390	10040	46200	30825	34810	20785	4.05	3.67	1350	15375	14025
2009-10	12521	10632	42446	30304	29925	19672	3.09	2.85	1889	12142	10253
2011-12	15490	16030	58880	48800	43390	32770	3.80	3.04	540	10080	10620
Total	19270	11356	46152	33308	33715	21952	3.65	2.92	1080.0	12843	11773

### Economics Analyzing

The inputs and outputs prices of communities prevailed during each year of demonstration were taken for calculation cost of cultivation net return & benefit cost ratio (table-2) this investment on production by adopting improved technologies ranged from Rs. 11390 to Rs. 15490 / ha. with a mean value of Rs. 19270 / ha. as compared to farmers practices where the variation in cost of production range from Rs.. 10040 to Rs. 16632 / ha. with an average of Rs. 11356 / ha. In frontline demonstration the average gross return was rs. 46152 / ha. While it was Rs. 33308 / ha. In farmers practices average net return (33715 q/ ha.) was also higher in frontline demonstration as compared to farmers practices (21952 / ha.) The highest net return in frontline demonstrated technology was Rs..43390 / ha. While it was Rs.. 32770 / ha. In farmers practices. During the year 2011-

12 the additional gross income ranged from Rs.. 7570 to Rs.. 15375 / ha. during the five years with an average Rs.. 12843 / ha. Demonstrated technology as compared to farmers practices in frontline demonstration technology an average additional net return was Rs..11773 / ha. While, it was varied from Rs.. 6268 / ha. to Rs. 17700 during the five years. The average benefit cost ratio of improved technologies was 2.97,4.34, 4.05, 3.09 & 3.80 during the years 2006-07, 2007-08, 2008-09, 2009-10, & 2011-12 respectively while it was 2.61, 3.03, 3.06, 2.85 & 3.04 corresponding category during the years, respectively. The average benefit cost ratio in demonstrated technology was 3.65, while it was 2.92 in farmers practices. The higher benefit cost ratio in demonstrated technology may be due to higher yield obtained to demonstrated technology<sup>[6, 8, 9]</sup>.

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