



Research Article

## Impact evaluation of front line demonstrations on Indian mustard in Anand, Gujarat

■ GIRISH DESHMUKH, H.B. PATEL, G. NETRAVATHI AND KRUNAL D. GULKARI

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**SUMMARY :** Frontline demonstration (FLD) is one of the most powerful tools for transfer of technology. Keeping in view of an effective extension approach of FLDs for dissemination of mustard technology, an impact assessment of FLDs conducted by KrishiVigyan Kendra, located in Devataj, Anand district of Gujarat was assessed. The impact assessment was based on the comparison of beneficiary and non-beneficiary respondents with reference to distribution of respondents according to their knowledge, adoption and constraints faced by the respondents with regards to adoption of mustard production technologies. It was found that 88.34 % of beneficiary respondents had medium to high level of knowledge and 85% non-beneficiary respondents had low to medium level of knowledge towards recommended mustard production technology. The analysis of data showed that 85% non-beneficiary had low to medium and 76.67% beneficiary mustard growers adopted medium to high level of recommended mustard production technology. Some of the important constraints faced by the beneficiary and non-beneficiaries respondents were high cost of fertilizer, high labour wages, ruminative price for the produce and high cost of seed in adoption of mustard production technologies in the study area.

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**KEY WORDS :**

Front line demonstration, Impact, Knowledge, Adoption, Mustard

### BACKGROUND AND OBJECTIVES

Front line demonstration is an appropriate tool to demonstrate recommended technologies among the farmers. This new concept of field demonstration was evolved by the Indian Council of Agricultural Research with the inception of the Technology Mission on Oilseed crops during mid eighties. The technologies developed through All India Co-ordinated Research Project on Rapeseed-Mustard through research activities are demonstrated under actual field conditions of the farmers through front line demonstrations.

The demonstrations conducted under the close supervision of scientists is called front-line demonstration because the technologies are demonstrated for the first time by the scientists themselves before being fed into the main extension system of the State Department of Agriculture. Front line demonstration is one of the most powerful tools of extension because

farmers in general are driven by the perception that 'seeing is believing'. The main objective of front line demonstrations is to demonstrate newly released crop production and protection technologies and its management practices in the farmers' field under different agro-climatic regions and farming situations. While demonstrating the technologies in the farmers' field, the scientists are required to study the factors that are contributing to higher crop production and constraints faced by the respondents while adopting the new mustard production technologies.

Sharma *et al.* (2011) showed that the level of knowledge of beneficiary farmers and adoption of improved mustard production technology was higher than non-beneficiary farmers. The overall difference in knowledge level of beneficiary and non-beneficiary farmers was only 5.82 mean per cent score. Singh *et al.* (2007) indicated conducting the front line demonstrations of proven

Author for correspondence :

**KRUNAL D. GULKARI**  
B.A. College of  
Agriculture, Anand  
Agricultural University,  
ANAND (GUJARAT) INDIA  
Email: kdgulkari@gmail.  
com

See end of the article for  
authors' affiliations

technologies, yield potential of mustard can be increased to a great extent. This will substantially increase the income as well as the livelihood of the farming community.

The major oilseed crops in India are groundnut, sunflower and mustard. Among them, mustard is the one of the most important oilseed crops. Its oil is the important component of human diet and it has diversified domestic and industrial uses. These days rapeseed-mustard production in India had achieved three fold increase in the last two decades. Mustard has emerged as an important crop from the states like Gujarat, M.P., Rajasthan it is mainly because the technology development with regard to improved varieties and other inputs have played important role in raising the productivity (Singh 2003).

Realizing the importance of frontline demonstrations in transfer of mustard production technologies, Krishi Vigyan Kendra, Devataj, Bharatpur has regularly conducted front line demonstrations at adopted farmers' field from past four years on mustard field in different talukas of Anand district with the objective of convincing farmers and extension functionaries together about the production potentialities of the mustard technologies for further wide scale diffusion. Keeping in view of an effective extension approach of front line demonstrations for dissemination of mustard technology, it was thought that impact of front line demonstrations conducted by KVK, Devataj was to be assessed. Therefore, the present study was conducted in 2011-12 with the following specific objectives:

- To study the impact of front line demonstrations on the knowledge level of beneficiaries and non-beneficiaries farmers.
- To assess the impact of front line demonstrations on the adoption level of beneficiaries and non-beneficiaries mustard technology.
- To find out constraints faced by farmers in adoption of improved mustard production technologies.

## RESOURCES AND METHODS

The present investigation was carried in 10 villages of Petlad, Tarapur and Sojitra talukas of Anand district during 2011-2012. Purposely, KVK, Devataj was selected for the study because maximum number of FLDs was conducted on mustard crop. A sample of 120 respondents was taken comprising 60

beneficiary and 60 non-beneficiary farmers. For selection of beneficiary farmers, a list of farmers where FLDs were conducted during preceding four years was prepared and for taking the equal representation, six beneficiary farmers from each one of the selected 10 villages making 60 beneficiary respondents were selected randomly. For the other half of the sample (60 non-beneficiary farmers), 60 farmers were selected randomly from the locality adjacent to KVK, Devataj where FLDs were not conducted by any organizations. The data were collected through personal interview with the help of pre-tested schedule. Jha and Singh (1970) and Sengupta (1967) scales were used, respectively with appropriate modifications to measure knowledge and adoption levels of mustard growers. The collected data were processed, tabulated, classified and analysed in terms of mean, per cent scores, ranks, etc. in the light of objectives of the study.

## OBSERVATIONS AND ANALYSIS

The results of the present study as well as relevant discussion have been summarized under following heads:

### Level of knowledge of mustard production technologies by beneficiary and non beneficiary farmers:

Table 1 shows that majority (56.67 %) of beneficiary mustard growers had medium level of knowledge about recommended mustard production technology, followed by 31.67 per cent and 11.67 per cent of them had high and low level of knowledge about recommended mustard production technology, respectively. In case of non-beneficiary mustard growers, majority (53.33 %) of them had medium level of knowledge about recommended mustard production technology, followed by 31.67 per cent and 15.00 per cent of them had low and high level of knowledge about recommended mustard production technology, respectively.

The analysis of data showed that great majority of beneficiary (88.34 %) of mustard growers had medium to high and non-beneficiary (85.00 %) of mustard growers had low to medium level of knowledge about recommended mustard production technology. The finding is in accordance with the results of Asiwal *et al.* (2008) and Kumawat (2008) who also reported that the average knowledge of beneficiary respondents was found to be higher than the non-beneficiary

**Table 1 : Distribution of respondents according to their knowledge regarding recommended mustard production technology (n = 60)**

Sr. No.	Level of knowledge	Category of mustard growers			
		Beneficiaries		Non- beneficiaries	
		Number	Per cent	Number	Per cent
1.	Low (below 17.41 score)	07	11.67	19	31.67
2.	Medium (between 17.41 to 22.34 score)	34	56.67	32	53.33
3.	High (above 22.34 score)	19	31.67	09	15.00
Total		60	100.00	60	100.00

respondents. It indicates that beneficiary mustard growers had significantly higher knowledge than non-beneficiary mustard growers. From the above findings, an inference can be drawn that FLD had influenced in increasing the knowledge of the beneficiary mustard growers regarding mustard production technology.

#### Level of adaptation of mustard production technologies by beneficiary and non beneficiary farmers:

Data presented in Table 2 indicate that half (50.00 %) of beneficiary mustard growers had medium level of adoption about recommended mustard production technology, followed by 26.67 per cent and 23.33 per cent of them had high and low level of adoption about recommended mustard production technology, respectively. In case of non-beneficiary mustard growers, majority (46.67 %) of them had low level of adoption about recommended mustard production technology, followed by 38.33 per cent and 15.00 per cent of them had medium and high level of adoption about recommended mustard production technology, respectively.

The analysis of data showed that great majority of non-beneficiary (85.00 %) of mustard growers had low to medium and beneficiary (76.67 %) mustard growers had medium to

high level of adoption about recommended mustard production technology. The finding is in conformity with those reported by Kumawat (2008) who found the higher adoption level among demonstrator than the non-demonstrator farmers. Lakhera and Sharma (2002) also reported that extent of adoption of improved mustard production technology was higher among participatory farmers than non-participatory farmers. Similar kind of finding was also reported by Patel *et al.* (2009) that adoption of improved mustard production technologies under real farm conditions through front line demonstrations had resulted in significant improvement in the extent of adoption, productivity and profitability of mustard growers in Banaskantha district of Gujarat. The study revealed that there was significant difference in the adoption about recommended mustard production technology between the beneficiary and non-beneficiary mustard growers. It means that the beneficiary mustard growers had better adoption than non-beneficiary mustard growers in recommended mustard production technology. From the above findings, an inference could be drawn that FLD conducted by KVK, Devataj had played an important role in increasing the rate of adoption of the recommended crop production technology of mustard crop.

**Table 2 : Distribution of respondents according to their adoption regarding mustard production technology (n = 60)**

Sr. No.	Level of adoption	Category of mustard growers			
		Beneficiaries		Non-beneficiaries	
		Number	Per cent	Number	Per cent
1.	Low (below 8.72 score)	14	23.33	28	46.67
2.	Medium (between 8.72 to 11.33 score)	30	50.00	23	38.33
3.	High (above 11.33 score)	16	26.67	09	15.00
	Total	60	100.00	60	100.00

**Table 3 : Constraints faced by the mustard growers in adoption of mustard production technology (n=60)**

Sr. No.	Constraints	Category of mustard growers			
		Beneficiaries		Non-beneficiaries	
		Mean	Rank	Mean	Rank
1.	Inadequate finance.	1.800	V	1.717	VI
2.	Lack of technical guidance.	1.700	VII	1.783	IV
3.	Unavailability of certified seed.	1.067	XIII	1.383	X
4.	High cost of fertilizer.	2.000	I	1.933	I
5.	Lack of irrigation water (irregular rainfall).	1.733	VI	1.733	V
6.	Irregular supply of electricity.	0.917	XIV	1.183	XII
7.	High rate of electricity.	1.217	XI	1.267	XI
8.	Shortage and high wages of labor.	1.983	II	1.833	III
9.	Attack of pests and diseases.	1.617	VIII	1.633	VII
10.	Crop is susceptible to wilt.	1.167	XII	1.483	IX
11.	Don't get remunerative price of production.	1.917	III	1.567	VIII
12.	High cost of seed	1.850	IV	1.900	II
13.	Lack of local market facility	1.300	X	0.867	XIV
14.	High production cost.	1.417	IX	1.050	XIII

### Constraints faced by the mustard growers in adoption of mustard production technology:

A glance of the Table 3 shows that high cost of fertilizers, shortage and high wages of labour, remunerative price of production, high cost of seed, inadequate finance, lack of irrigation water (irregular rainfall), lack of technical guidance, attack of pests and diseases, high production cost, lack of local market facility, high rate of electricity, susceptibility of crop to wilt, unavailability of certified seed and irregular supply of electricity were the main problems faced by beneficiary mustard growers in adoption of mustard production technology.

In case of non-beneficiary mustard growers, high cost of fertilizers, high cost of seed, shortage and high wages of labour, lack of technical guidance, lack of irrigation water (irregular rainfall), inadequate financial, attack of pests and diseases, do not get remunerative price of product, crop is susceptible to wilt, unavailability of certified seed, high rate of electricity, irregular supply of electricity, high production cost and lack of local market facility were the major problems faced by them in adoption of mustard production technology.

### Conclusion:

Study showed that majority of beneficiary (88.34 %) mustard growers had medium to high and non-beneficiary (85.00 %) mustard growers had low to medium level of knowledge about recommended mustard production technology. In case of adoption non-beneficiary (85.00 %) mustard growers had low to medium and beneficiary (76.67 %) mustard growers had medium to high level of adoption about recommended mustard production technology. It was found the significant difference in knowledge and adoption level between beneficiary and non-beneficiary mustard growing farmers. It can be interpreted that there was positive impact of front line demonstrations conducted by KVK, Devatajon knowledge and adoption of the mustard production technologies. Therefore, it can be concluded that frontline demonstration conducted under the close supervision of scientists is one of the most important tools of extension to demonstrate newly released crop production and protection technologies and its management practices in the farmers' field under different agro-climatic regions and farming situations. front line demonstrations are playing important role in motivating the farmers for adoption of improved agriculture technology resulting in increasing their yield and profits. Keeping in view of importance in transfer of technology,

FLDs should be designed and conducted carefully and effectively and provisions should be made for other supportive extension activities such as field days, interaction meeting, etc. for speedy dissemination of demonstrated technology among farming community.

Authors' affiliations :

**GIRISH DESHMUKH**, College of Agriculture, Junagadh Agricultural University, JUNAGADH (GUJARAT) INDIA

**H.B. PATEL**, Department of Extension Education, D.E.E., Anand Agricultural University, ANAND (GUJARAT) INDIA

**G. NETRAVATHI**, B.A. College of Agriculture, Anand Agricultural University, ANAND (GUJARAT) INDIA

### REFERENCES

- Asiwal, B.L., Singh, S. and Khan, I.M.** (2008). Knowledge level of beneficiary and non-beneficiary farmers of FLDs regarding improved mustard production technology in Sikar district of Rajasthan. *Rajasthan J. Extn. Edu.*, **16**:119-123.
- Jha, P.N. and Singh, K.N.** (1970). A test to measure farmers' knowledge about high yielding variety programme, *Inter Discipline*, **7**(1):65-67.
- Kumawat, S.R.** (2008). Impact of frontline demonstration on adoption of improved castor production technology. *Rajasthan J. Extn. Edu.*, **16**:143-147.
- Lakhera, J.P. and Sharma, B.M.** (2002). Impact of frontline demonstration on adoption of improved mustard production technology. *Rajasthan J. Extn. Edu.*, **14**: 43-47.
- Patel, B.I., Patel, D.B., Patel, A.J. and Vihol, K.H.** (2009). Performance of mustard in Banaskantha district of Gujarat. *J. Oilseed Rese.*, **26** (Special issue): 556-557.
- Sengupta, T.** (1967). A simple adoption scale used for farmers for high yielding programme of rice, *Indian J. Extn. Edu.*, **3**:107-115.
- Sharma, Ashok Kumar, Vinod Kumar, Jha, S.K. and Sachan, R.C.** (2011). Front line demonstrations on Indian mustard: An Impact Assessment. *Indian Res. J. Extn. Edu.*, **11** (3): 25-31.
- Singh, N.B.** (2003). Accomplishment and challenges in rapeseed and mustard research in India. In : Salimath et al. (Eds) Abstracts, National Seminar on advances in Genetics and Plant Breeding- impact of DNA revolution October 30-31, 2003 at UAS, Dharwad, Karnataka.
- Singh, S.N., Singh, V.K., Singh, R.K. and Singh, Rakesh K.** (2007). Evaluation of on-farm front line demonstrations on the yield of mustard in Central Plains Zone of Uttar Pradesh. *Indian Res. J. Extn. Edu.*, **7** (2&3):79-81