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Impact Assessment of Front Line Demonstration on Mustard

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Abstract

The study impact assessment of front line demonstration technology of mustard on farmers field in Agra district conducted during 2016-17 in rabi season was carried out at Krishi Vigyan Kendra Bichpuri , Agra (U.P) . This was consisting technology of front line demonstration under balanced dose of ferlilizer (80 kg nitrogen, 60 kg phosphorus, 40 kg potash, 40kg sulphur, 12.5 kg zinc (33%), 8kg borex, 400 kg city compost per hectare). The results showed that demonstration performed the significantly yield of mustard and yield under demonstration fields was 21.51 q /ha as compared to 13.2 q /ha in traditional farmer practices fields . This additional yield of 8.31 q /ha and 62.96% increase average mustard production. The benefit cost ratio (B:C ratio) of front line demonstration and farmer practices were 1:2.82 and 1:2.15 respectively. front line demonstration technology was more profitability compared to farmer practices.

Key words: Mustard, Front Line Demonstration, Yield

Introduction

Indian mustard is most important oil seed crops of Agra region in western Utter Pradesh, Mustard crop is grown in the rabi season from September – October to February- March. In India, rape seed mustard is an important source of edible oil followed by ground nut (Panday et al.,1999). Production and also to bridge the productivity gaps by enhancing the production in national basket. India is an important rape seed mustard growing country in the world.

The front line demonstration (FLD) is an applied approach to accelerate the dissemination of proven technologies at farmers fields in a participatory mode with an objective to explore the maximum available resources of crop production and also to bridge the productivity gaps by enhancing the production in national basket. India is an important rape seed mustard growing country in the world, occupying largest area and has second position in production after China.

Important crop management can play effective dual role both in increasing the productivity and enhancing production stability. Major emphasis in the adoption of new technology was high yielding varieties, assured irrigation, balanced fertilizer management and use of chemical (Kikar et al., 2005). Organization of front line demonstration is most effective tool for transfer of cost effective technologies among the farmers

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(Srinivas et al., 2015 and Jeendar et al., 2006). Therefore, front line demonstration were conducted during rabi seasons of the year 2016-17 on selected farmer field of the operation area of Krishi Vigyan Kendra Bichpuri, Agra with the objective of exhibiting the performance of balanced fertilizer application of mustard crop.

Materials and Methods

Krishi Vigyan Kendra (KVK), R. B. S. College Bichpuri, Agra conducted 78 front line demonstrations on oilseed crop of mustard on farmer's field in different villege adopted Nagla hera Singh number of demonstration 12, Nagala Vishnu number of demonstration 13 and Nagala dule Kha number of demonstration 36 in year 2016-17 in Agra district. These village soil are medium phosphorus, low organic carbon and nitrogen , For conducting FLDs, farmers were identified/ selected following the survey suggested by Choudhary (1999).The required inputs were supplied and regular visits to the demonstration fields by the Krishi vigayan Kendra subject matter specialist and training assistant ensured proper guidance to the farmers. non monetary in put like timely sowing, seed rate, plant spacing, weeding, thinning, harvesting, threshing, chemical use, etc practices were taken cane through farmers training, field visit, etc. The sowing was done during month of October under assured irrigated conditions and harvested during month of of March. Seeds were sown in rows 45 cm by drill or placed at 3 cm depth. However, the practices followed by farmers in general use local verities , seed rate @ 4 - 5 kg/ha, no seed treatment, sowing from last week of October to last week of November, in broadcasting manner, no use of fertilizer pattern to under dose application that's to use of urea and DAP, no weed, water and plant protection measures followed. Production data of Mustard were observation separate farmer after threshing.

The data output were collected from both front line demonstration plots as well as control plots and cost of cultivation, net income, and benefit cost ratio were also worked out (Samui et al., 2000).

The treatments of traditional farming and demonstration under dose of fertilizers are as follow:

farmer practices : 64 kg per hectare nitrogen, 46 kg/ha phosphorus and no use of potash

Front Line Demonstration (FLD): 80 kg nitrogen, 60 kg phosphorus, 40 kg potash, 40kg sulphur, 12.5 kg zinc (33%), 8kg borex, 400 kg city compost per hectare

The technology gap, extension gap and technological index were calculated by using following formula as given below:

Technology gap = Potential yield -Demonstrated yield

Extension gap = Demonstrated yield -Yield under existing Practice

$$\text{Technology index} = \frac{\text{Potential yield - Demonstrated yield}}{\text{Potential yield}} \times 100$$

The BCR formula was calculated in given below:

$$\text{BCR} = \frac{\text{Gross return}}{\text{Gross cost}}$$

Table 1: Average yield on demonstration and farmer practices q/ha

Treatments	mean
Farmer Practices	13.20
Front Line Demonstration Technology	21.51
C.D. at 5%	1.134
S.Em+	0.402
C.V. (%)	20.443

Table 2: Economics and B:C ratio of demonstration and farmer practices q/ha

Treatments	Average cost of cultivation (Rs/ha)	Average gross return (Rs/ha)	Average net profit (Rs/ha)	Benefit cost ratio(Rs/ha)
Farmer Practices	21510	46200	24690	2.15:1
Front Line Demonstration Technology	26669	75285	48616	2.82:1

Table.3: Yield gap of mustard crop during investigation

Years	Variety	Technology gap(q/ha)	Extension gap(q/ha)	Technology index (%)	Potential yield (q/ha)
2016-17	RH-749	6.49	8.31	23.17	28.00

Result and Discussion

The table.1 clear shows the positive effect of front line demonstrations over the existing practices and significantly enhancing the yield of mustard in the study area due to use of high yielding variety, timely sowing, balance does of fertilizers along with sulphur, zinc, borex, city compost , proper irrigation, need based plant protection etc. Substantially mustard yield is more than our expectation compared to farming practices during the year 2016-17. The average yield of mustard grain under demonstration was 21.51 quintal per/ha and the higher yield production of mustard under Demonstration in comparison to 13.2 quintal per/ha yield of farmer's local practices could be ascribed mainly to the use of dose of fertilizer and RH -749 varieties of mustard.

Yield of the front line demonstration and potential yield of the crop was compared to estimate the yield gaps which were further categorized into technology and extension gap.The data of Table 3 depicted the technology gap in the demonstration yield that was 6.49 against potential yield was during the year and reflects the farmer's cooperation in carrying out

such demonstrations with encouraging results in subsequent year. The technology gap observed may be attributed to the dissimilarity in soil fertility status, timely sowing and weather conditions. Similar finding were recorded by Mitra and Samajdar (2010). Further, the higher extension gap was observed. The extension gap was 8.31q /ha during the year of study that emphasizes the need to educate the farmers through various means for adoption of improved production technologies to mitigate the extension gap.

The data of Table 2 reveals that as far as economics of mustard is concerned; gross return, net profit and benefit cost ratio were Rs. 75285/ha, Rs. 48616/ha and 2.82, respectively during 2016-17 under demonstration plot. However, Rs.46200/ha gross return Rs.24690/ha, net profit with 2.15 benefit cost ratio during 2016-17 under farmer's practices. The superiority of recommended package of practices under frontline demonstration over farmers' practice was also reported by Mitra and Samajdar (2010) and Balai et al.,(2012).From the findings of present study, it can be concluded that use of latest technologies of mustard cultivation can reduce the technology gap to a considerable extent resulting in to increased productivity of mustard in the district. It requires collaborative extension efforts to enhance adoption level of location and crop specific technologies among of the farmers for bridging these gaps. Therefore, extension agencies in the district need to provide.

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