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Impact of front line demonstrations on productivity of Okra cv. Gujarat Okra-2 in Panchmahals district of middle Gujarat

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Abstract

The present study was carried out at Panchmahals district of middle Gujarat during 2011-12. Okra is one of the most important vegetable crop of the country and India is the largest producer in the World. The development of the Agriculture is primarily depends on the application of the scientific technologies by making the best use of available resources. One of the major constraints of traditional okra farming is low productivity because of non-adoption of advanced technologies. To increase the production, productivity and quality of agricultural produce, Front Line Demonstrations is conducting at various farmers' field. All the recommended practices were provided to the selected farmers. The data related to cost of cultivation, production, productivity, gross return and net return were collected as per schedule and analyzed. Results of the present study revealed that the improved variety of Okra Gujarat Okra-2 recorded the higher yield (105.90 q/ ha) as compared to local check (87.60 q/ ha) traditionally grown by the farmers. The percentage increase in the yield over local check 20.89 was recorded. The technology gap in terms of productivity (9.1 q/ha) were computed. The technology index values 7.91 % was recorded. The results of study indicated the gap existed in the potential yield and demonstration yield is due to soil fertility and weather conditions. By conducting Front Line Demonstrations (FLDs) of proven technologies, yield potential of Okra can be increased upto great extent. This will substantially increase the income as well as the livelihood of the farming community.

Keywords: - *Front Line Demonstrations, local check, Okra, Technology, Yield*

Introduction

Okra (*Abelmoschus esculentus* L. Moench) is one of the most important annual vegetable in tropical and subtropical region of the World. It is a semi-woody, fibrous, herbaceous annual plant with an indeterminate growth habit (Balock, 1994). In India, okra is one of the most important vegetables in terms of consumption and area covered under cultivation (Iremiren and Okiy, 1986). India is the largest producer and exporter of okra in the World. It is used by people in different ways, the immature pods are consumed as boiled vegetables and they are also dried and used as soup thickeners or in stews (Yadev and Dhankhar, 2002). The green fruits are rich sources of vitamins, calcium, potassium and other minerals (Lee *et al.*, 1990). The area, production and productivity of Okra is 5.30 lakh ha, 62.88 lakh M.T and 11.8 M.T., respectively. In Gujarat, it is grown in area of 0.66 lakha ha with production of 7.23 lakh M.T and productivity 11.84 (Anonymous, 2012). In Panchmahals district of Gujarat, Okra is one of the most important vegetable crops. The area, production and productivity of okra of the district are 600 ha, 3000 M.T and 5 M.T (Anonymous, 2010) per ha, respectively.

The okra variety Gujarat Okra-2 suits to this region. A field trial was carried out at the ten farmer's field at Panchmahals district of Gujarat. The Panchmahals district of Gujarat is characterized as hot semi-arid climate. It can be grown throughout the year under assured irrigation facility, whereas, the large numbers of farmers are growing okra during kharif season.

The main objective of Front Line Demonstrations (FLD) to introduce suitable Agriculture practices like high yielding varieties, seed treatment, spacing, nutrient management, pest and disease management etc among the farmers accompanied with organizing extension programmes (field day) for horizontal dissemination of the technologies. FLD is playing a very important role for transfer of technologies and changing scientific temperament of the farmers by seeing and believing principle.

In order to have better impact of the demonstrated technologies for farmers and field level extension functionaries, Front Line Demonstrations was conducted in a cluster of one or two hectares land.

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Generally, the agricultural technology is not accepted by the farmers as such in all respects. There is always gap between the recommended technology by the scientist and its modified form at the farmer's level which is major absentee in the efforts of increasing agricultural production in the country. It is need of the hour to reduce this technological gap between the agricultural technology recommended by the scientists or researchers and its acceptance by the farmers on their field. In view of the above facts, frontline demonstrations were undertaken in a systematic manner on farmers' field to show the worth of a new technology and convince the farmers to adopt in their farming system.

Materials and Methods

The present study was conducted in Panchmahals district of middle Gujarat during 2011-12. The genuine seed of Okra cv. Gujarat Okra-2 was procured and distributed to ten selected farmers. All the participating farmers were trained on various aspects of Okra production technologies. The field was prepared by deep ploughing during May and harrowing before sowing. The seeds were sown in well prepared field during monsoon season. A one fifth area was also devoted to grow local check. All the recommended practices *i.e.* seed treatment, spacing, recommended dose of manure and fertilizers, weed management, insect pest management were provided to the farmers in both treatments (local check and Gujarat Okra-2.) The data related to cost of cultivation, production, productivity, total return and net return were collected in both treatments as per schedule from all selected farmers. An average of cost of cultivation yield, net returns of different farmers was analyzed by the formula.

Average = [F1+F2+F3.....Fn]/N

F1 = Farmer
N=No. of farmers (10)
In the present study, technology index was operationally defined as the technical feasibility obtained due to implementation of Front Line Demonstrations in Okra. To estimate the technology gap, extension gap and technology index following formula used by Samui *et al.* (2000) have been used:

Technology gap = Pi (Potential yield) - Di (Demonstration yield)
Extension gap = Di (Demonstration Yield) - Fi (Farmers yield)

Technology Index = [(Potential yield - Demonstration yield) x 100]/Potential yield

Result and Discussion

Performance of FLD

A comparison of productivity levels between demonstrated variety and local check is shown in table-1. During the period of study, it was recorded that in front line demonstrations, the improved okra variety Gujrat Okra-2 recorded the higher pod yield (105.90 q/ ha) than local check (87.60 q/ ha). The percentage increase in the yield (20.89) over local check was recorded. Similarly, yield enhancement in different crops in front line demonstration had apply been documented by Hiremath *et al*. (2007), Mishra *et al*. (2009), Kumar *et al*. (2010), Suryawanshi and Prakash (1993) and Dhaka (2010). From these results it is evident that the performance of improved variety was found to be better than the local check under same environment conditions. The farmers were motivated by seeing the results in term of productivity and they are adopting the technologies. The yield of the front line demonstrations and potential yield of the crop was compared to estimate the yield gaps which were further categorized into technology index.

Technology gap

The technology gap shows the difference between potential yields over demonstration yield of the technology. The potential yield of the technology (variety Gujarat Okra-2) is 115 q. ha. The technology gap 9.10 q/ ha was recorded. The Front Line Demonstration was laid down under the supervision of KVK Specialist at the farmer's field; there exist a gap between the potential yield and demonstration yield. This may be due to the soil fertility and weather conditions. Hence location specific recommendations are necessary to bridge the gap. These findings are similar to the findings of Sharma and Sharma (2004) in oilseeds at Baran district of Rajasthan.

Technology index

Technology index shows the feasibility of the variety at the farmer's field. The lower the value of technology index more is the feasibility of the particular technology. The result of study depicted in Table- 1 revealed that the technology index value was 7.91. It means the technology okra cv. Gujarat okra-2 is suitable for the Panchmahals district of middle Gujarat. The results of the present study are in consonance with the findings of Singh *et*

Table 1. Yield, technology gap and technology index of demonstration

Variables	Yield (q/ h)	Increase (%) over Local check	Technology gap- (q/ h)	Technology index (%)
Local check	87.60	-	-	-
Demonstration (Gujarat Okra.-2)	105.90	20.89	9.1	7.91

al. (2007) and Hiremath and Nagaraju (2009) in onion.

Economics of frontline demonstrations

The economics of okra production under front line demonstration was recorded and the results of the study have been presented in Table- 2.The Results of economic analysis of okra production revealed that front line demonstration recorded higher gross returns (Rs. 90015 / ha) and net return (Rs. 74460 /ha) with higher benefit ratio (2.89) as compared to local check. These results are in accordance with the findings of Hiremath *et al*. (2007) and Hiremath and Nagaraju (2009). Further, additional cost of Rs.1400 per hectare in demonstration has increased additional net returns Rs. 15555 per hectare with incremental benefit cost ratio 10.11 suggesting its higher profitability and economic viability of the demonstration. More and less similar results were also reported by Hiremath and Nagaraju (2009), and Dhaka et *al* (2010).

Table 2. Economics of frontline demonstrations

Variables	Cost of cultivation (Rs/ ha)	Gross return (Rs/ ha)	Net return (Rs ha)	Benefit: cost ratio
Local check	30800	74460	43660	2.41
Demonstration	32200	90015	57815	2.89
Additional in demonstration	1400	15555	14155	10.11*

* Incremental benefit cost ratio

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