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Augmenting income through front line demonstrations in district Ramban

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Abstract

The present research study was conducted in selected villages of district Ramban to find out the increase in yield and income of the farming community as a result of FLDs on French bean and Maize laid out in farmers fields with the high yielding, Hybrid and Composite varieties provided by KVK-Ramban. The result of 60 FLDs on French bean reveal that the b:c ratio was much higher 2.38 as compared to the local varieties having a b:c ratio of 1.97. Similarly the results of 100 FLDs on Maize reveal that average yield of demo plots were 26.5 qtls/ha as compared to 18.2 qtls/ha of check i. e local varieties used by the farmers. The increase in the yield by the varieties provided under FLDs was about 45.60 percent over local ones. Accordingly the benefit cost ratio calculated was much higher for FLDs (1.9) as compared to check (1.6).

Keywords: Maize, french bean, yield, net return

Introduction

The Front Line Demonstrations involving new seed varieties in the farmers' fields aim at awareness of farmers regarding their production potential. Farmer comes to know the difference between the varieties traditionally grown by them and the varieties provided to them under FLDs on different crops. When they themselves see the difference in yield, there is a positive effect on the adoption rates. Krishi Vigyan Kendras (KVKs) as district level bodies have been entrusted with the mandate of proving FLDs to the farming community. Since the establishment of first KVK in Puducherry in 1974, these institutes have been continuously engaged in front line demonstrations (FLDs) to establish production potential of technologies on farmers' fields; to conduct training programmes for farmer, youths, farm women for their skill development, to act as a resource and knowledge centre of agricultural technologies with the ultimate aim of improving the agricultural economy of the country in general and the state in particular in which they are located. Presently there are 731 KVKs all across the country (ICAR, 2023).

One of the important mandates of KVKs has been the lying of On Farm Trials OFTs and Front Line Demonstrations (FLDs). While 'On-Farm Testing' (OFT) is done for identifying technologies in terms of their location specificity, Front Line Demonstrations (FLDs) on various crops aim to establish the production potential of new technologies in the farmer fields and to generate production data and feedback information.

Objectives

KVK-Ramban under the jurisdiction of Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu has laid out FLDs on various crops in different villages of this district. To know about the impact of these FLDs on income of the farming community, it is necessary to quantify the data obtained from fields in clear and concise way so that inferences can be drawn and generalizations can be made. The present study was thus conducted with the objective of:

1. To know the percentage increase in yield of FLDs over the local varieties grown by the farmers.
2. To calculate the economics of the varieties sown under FLDs and find out the net returns in both the cases.

Area of the study

The present study was conducted in district Ramban. With different type of climate found at different altitudes of this district, the district is largely a rural one. Agriculture is the main source of livelihood in the district along with Horticulture and Livestock also as other important sectors contributing to the livelihood security of the population of the region. As far as size of landholdings is concerned, the average size of landholdings is 0.30 ha. Of the total farm operating families, 83% are marginal one having less than 1 ha of land. About 15% of them are small having 2 ha of land, 1.67% fall in semi medium category having land up to 4 hectares and less than 1% falling in the medium category with land up to 10 hectares.

Research Methodology:

In the *Kharif* (2023), 100 Front Line Demonstrations (FLDs) on Maize covering 100 farmers and 60 FLDs on French bean were laid out on farmer fields. These demonstrations were on Hybrid Maize varieties viz Star Gagan Gold, Maize 4794 and High yielding Contender French bean variety that covered an area of 20 and 0.6 hectares respectively in different villages of this district. The data regarding yield was collected from individual farmers. The yield data were analyzed to arrive at the productivity of the different varieties and overall productivity of

the variety given. The cost of cultivation was also calculated based on the inputs given by the farming community both for the demo. Variety as well as the local check which the farmers; have been cultivating for so many years. Based on the cost of cultivation and the overall productivity the gross income, net income and benefit; cost ratio was worked out. The overall economics was arrived at by:

% yield change=avg. yield of demo plots-avg. yield of check plots/avg. yield of demo. plots

Net Income=Gross Income-Cost of Cultivation

Benefit: Cost (b: c) ratio= Gross Income/Cost of Cultivation

Results and Discussions

The data in table 1 depicts the no. of farmers' the area covered the average yield of demo. Plots and check plots and the percentage increase in yields. From the table it is clear that the average yield of demo plots was 26.5 qtls/ha as compared to 18.2 qtls/ha of check i. e local varieties used by the farmers. The increase in the yield by the varieties provided under FLDs was about 45.60 percent over local varieties used by the farmers. In case of French beans the yield with contender was 21.4 qtls per hectare which was 31% more than the local varieties (16.3 qtls/ha) used by the farmers.

Table 1: Crop, Varieties, Total area and No. of farmers

Crop	Variety	HYV/Hybrid	Area (ha)	No. of farmers'	Yield		% age increase
Maize	a. SGG	Hybrid	20	100	26.5	18.2	45.6
	b. Maize-4794						
French bean	Contender	High yielding	0.6	60	21.4	16.3	31.0

*Star Gagan Gold (SGG)

If we see the intra-varietal variation in the yields of maize varieties under demo plots (Table 2 & Fig.1)' we can infer that SGG gave the maximum yield of 27.2 qtls per hectare and Maize 4794 with an average yield of 25.8 qtls per hectare. The yield per ha of SGG and Maize 4794 showed 49.45 and 41.75 percent increase over the local varieties grown by the farmers of the region.

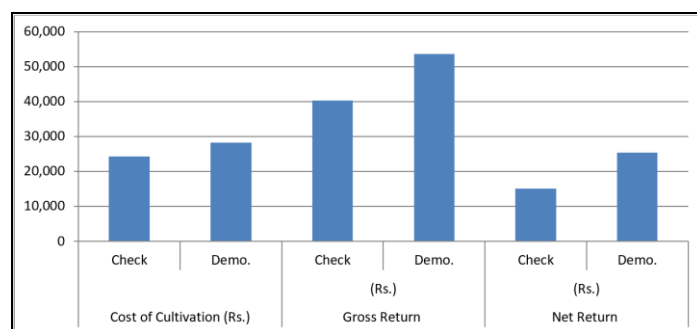
Table 2: Yield of different Maize varieties under FLDs

Variety	No. of farmers covered	Yield (qtls./ha)	%increase over check
SGG	25	27.2	49.45
Maize-4794	75	25.8	41.75

Table 3: Economics of Maize and French bean production

Crop	Cost of Cultivation (Rs.)		Gross Return (Rs.)		Net Return (Rs.)		b:c ratio (Rs.)	
	Check	Demo.	Check	Demo.	Check	Demo.	Check	Demo.
Maize	24,200	28,160	40,300	53,570	15,150	25,410	1.6	1.90
French bean	30300	34700	59800	82600	29500	47900	2.38	1.97

Table 3 depicts the economics of Maize and French bean cultivation under FLDs as well as under local varieties grown by farmers. It reveals that net income from the FLDs under Maize was rupees 25,410 per hectare where as from the check varieties it was much lower at rupees 15,150 only. Accordingly the benefit cost ratio calculated was much higher for FLDs (1.9) as compared to check (1.6). It is thus clear that profitability from the demo variety was much higher than the local varieties. In case of French bean the cost of cultivation of check variety was rupees 30,300 per hectare and that of Demo plot was rupees 34,700 per hectare with a gross return of rupees 82,600 for demo variety and 59800 for check variety. The b: c ratio for demo and check varieties stood at 2.38 and 1.97 respectively.



CoC: Cost of Cultivation, NR: Net Returns, b: c benefit cost ratio

Fig 1: Graphical representation of the economics of maize production

The data in Fig. 2 shows graphically how the benefit cost ratio has increased with the use of varieties provided under FLDs on Maize and French beans. The benefit cost ratio has gone up from 1.97 to 2.38 in case of French beans and from 1.6 to 1.9 in case of Maize.

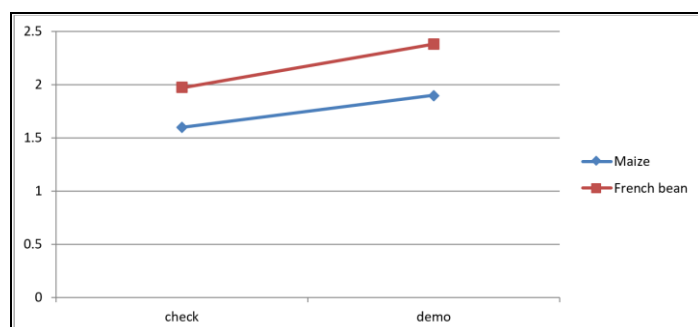


Fig 2: Graphical representation of b: c ratios of Maize and French bean

Conclusion

From the present study it can be concluded that Front line Demonstrations have been an important instrument in doubling the farmers' income. Various other research studies done in different regions of the world have also proved that FLDs have in the real sense resulted in increase in yields of the farming communities. The increase in yield under FLDs of different crops has also been reported by Haque (2000) ^[1], Naberia *et.al*, (2015) ^[4] and Raj Kumar *et.al* (2024) ^[3]. The increased yields have also augmented the income of farming communities leading to their socio-economic empowerment.

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