

Original Research Article

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Impact of Front Line Demonstration on Yield Enhancement of Transplanted Rice in Seoni District of Madhya Pradesh

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ABSTRACT

Keywords

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The study was carried out by Krishi Vigyan Kendra, Seoni during Kharif from 2013-14 to 2016-17. Total 40 demonstrations were conducted on rice in 16 ha. by the active participation of the farmers with objective of improved technologies of rice production. The improved technologies consist improved high yielding variety, Soil test value based nutrient application and integrated diseases and pest management etc. The average four year data observed that an average yield of demonstrated plot was 3763 kg. over control (3413 kg/ha.) with an additional yield of 350 kg/ha. and the increase average rice productivity by 10.25 percent. The average extension gap technology gap, extension gap and technology index were 350 kg/ha., 236 kg/ha. and 5.9% respectively.

Introduction

Many agricultural technologies have been developed by researchers worldwide, but these technologies have not been adopted by farmers in many instances. Many reasons, including poor communication of results along with high costs and other socio-economic constraints have been put forward for poor uptake resulting in a yield gap at local, regional and global levels. One way that has been shown to improve adoption of technologies in the involvement at farmers throughout the development process, from the initial inclusion and testing of treatments through to experimentation by farmers

themselves. Technology transfer refers to the spread at new ideas from originating sources to ultimate users (Prasad *et al.*, 1987). Front line demonstration is one of the most powerful tools for transfer of technology.

Rice is the important staple foods which cover 65 percent of the population in india. It is the largest consumed calorie source among the food grains. India is the second largest producer of rice in the world next to China. In M.P. rice is grown in the area of about 27.94 Lakh ha. with production of 78.58 lakh tonnes and productivity 2813 kg/ha. In seoni district 167043 ha. area under rice cultivation in 2018-19 with 368049 Mt. Production and

productivity of 2204 kg/ha (Agricultural statistics, 2018-19).

It indicates that the productivity of rice in seoni district is comparatively low, primarily due to lack knowledge of improved production technologies. The productivity of rice could be increased by adopting recommended scientific and sustainable management production practices (Singh et al 2017). Front line demonstration is the new concept at field demonstration with main objective to demonstrate newly released variety with improved practices technologies and its management practices at farmers field under different agro climatic regions of the country with varying farming situations. Productivity of rice per unit area can be increased by adopting feasible, scientific and sustainable management practices by selecting a suitable variety. With this in view front line demonstration held at farmers field, in a systemic manner to convince them to about the potential of improved production technologies to enhance yield of rice.

Materials and Methods

The study was carried out by Krishi Vigyan Kendra Seoni Jawaharlal Nehru Krishi Vishwavidhyalaya, during Kharif season from 2013-14 to 2016-17 four consecutive years in the farmers field of five adopted villages of seoni district. During this four year of study in area of 16 ha. was covered with plot size 0.4 ha. under front line demonstration with active participation of 40 farmers. Before conducting frontline demonstration a list of farmers were prepared from group meeting and specific skill training was given to the selected farmers regarding package of paractices of rice.

The soils of demonstration sites were loamy in texture with pH range between 5.9 and 6.8. The available nitrogen, phosphorus and

potassium varied between 180-260, 15-24, 280-330 kg/ha. respectively, However the soils were deficient in available zinc. In demonstration plots use of quality seeds of improved variety, timely weeding, STV based plant nutrient application, need based IPM and IDM were emphasized and comparison has been made with the farmers practice (local check). The necessary steps for the selection of sites and farmers, layout of demonstration etc., were followed as suggest by choudhary (1999). The tradition practices were maintained in case of local check. The data output were collected from both FLD plots as well as local check and finally the extension gap, technological gap, technological index along with the benefit cost ratio were calculated using the formula as suggested buy samui *et al.*, (2020).

Extension gap = Demonstration Yield - Farmers Yield

Technology gap= Potential Yield - Demonstration Yield

Technology Index (%) = [Technology gap/ Potential yield] x 100

Results and Discussion

A comparison of the productivity level between front line demonstrations and local checks is shown in table-1. It is evident from results that under the demonstration plot, performance of rice yield was sustainable higher than that in local check in all the years of the study (2013 -14 to 2016-17).

Average four year data observed that an average yield of demonstrated plots was 3763 kg/ha. over control (3413 kg/ha.) with an additional yield at 350 kg/ha and the increase average rice productivity by 10.25 per cent. Small fluctuations in yield observed over the years were mainly on account of variation in

rainfall, transplanting time and pest and disease attack. Mukharjee (2003) had reported that the innovative intervention may have superior implications in enhancing productivity. Similar results were also reported by others namely mishra *et al.*, (2009), Tiwari *et al.*, (2003), Tiwari and

Saxena (2001) in different crops. The data indicated that the positive effect of front line demonstration over the existing practices towards increasing the yield of rice in seoni district of Madhya Pradesh. B:C ratio was recorded to be higher under demonstration than the local check during all the four years.

Table.1 Performance of front line demonstrations on yield and per cent increase of rice

Year	Area	No. of Farmers	Seed Yield (q/ha)			% Increase over control
			Potential	Demonstration	Control	
2013-14	4.8	12	40	37.8	34.40	11.17
2014-15	4.0	10	40	38.50	34.80	10.63
2015-16	4.0	10	40	35.85	32.25	11.16
2016-17	4.0	10	40	38.0	35.50	8.16
Average				37.63	34.13	10.28

Table.2 Performance of front line demonstrations on Technology gap, Extension gap Technology index and B: C ratio of rice

Year	Technology gap (q/ha.)	Extension gap (q/ha.)	Technology index %	B:C Ratio	
				Demonstration	Local check
2013-14	2.2	3.80	5.5	2.05	1.92
2014-15	1.50	3.70	3.75	2.41	2.20
2015-16	4.15	3.60	10.37	2.32	2.19
2016-17	1.60	2.90	4.0	2.47	2.25
Average	2.36	3.5	5.90	2.31	2.10

Yield in frontline demonstration and potential yield was compared for estimating yield gaps. These gaps were further categorized as technology and extension gaps. Technology gap indicates a gap in demonstration yield over the potential yield and average technology gap was 236 kg. The technology gap observed may be attributed to dissimilarities in soil fertility, rainfall and other vagarics of weather in the demonstration areas.

The extension gap ranging between 290 to 380 kg/ ha. (Table 2) During the period of study emphasis the need to educate the farmers through various technologies for

adoption of improved agricultural production reverse the trend of wide extension gap.

The technological index revealed that the feasibility of the demonstration technology. As such variation in technology index (3.75 to 10.37) during the study period in certain area may be attributed to dissimilarity in the soil fertility gradient, pest-disease infestation and poor weather conditions. This finding corroborates results at Lal *et al.*, 2016, Meena *et al.*, 2016 and Poonia *et al.*, 2017.

The results obtained in present study it can be concluded that use of improved method of rice cultivation can reduced the technology

gap to a considerable extent thus leading to increase productivity at rice in the district. Extension gap ranged between 290 to 380 kg/ha. which emphasis the need to educate the farmers through various means like farmers training, method demonstrations, frontline demonstrations etc. Technology index which shows that feasibility of the technology demonstrated has depicted good performance of the intervention.

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