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Impact of sorghum demonstrations on the beneficiary farmers

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Abstract

The study entitled “Impact of sorghum demonstrations on the beneficiary farmers” was purposively implemented in Akola and Amravati district of Vidarbha region. The study conducted in Chandurbazar tahsil of Amravati district and Telhara and Patur tahsils of Akola district. The impact of sorghum demonstrations has been studied in terms of change in Knowledge, Adoption, Productivity and Annual income. It was also found that there was change in knowledge, adoption, productivity and annual income to the tune of 33.45, 37.20, 18.02 and 36.68 per cent, respectively of beneficiary farmers over non-beneficiary farmers as a result of sorghum demonstrations. Thus, it could be stated that sorghum demonstrations had created positive impact on beneficiary farmers.

The cent per cent (100.00%) farmers adopted PKV-Kranti variety during *Rabi* season 2018-2019. More than half of the beneficiaries (53.33%) farmers provide seed of PKV- Kranti variety to other farmers. Out of that 45.00 per cent beneficiary farmers distributed seed in their own village and 08.33 per cent farmers distributed outside the village. In year 2017-18 area under PKV-Kranti variety demonstrations was about 10 ha in Akola and Amravati district which increase up to 90 ha in year 2018-2019. During the year 2018-19 adoption of *Rabi* sorghum PKV-Kranti was adopted in 69.23 per cent area in Vidarbha and 10.76 per cent in Maharashtra.

Keywords: Impact, *Rabi* sorghum, PKV-Kranti, frontline demonstrations, beneficiary farmers, non-beneficiary farmers, knowledge, adoption, productivity, annual income

Introduction

Sorghum (*Sorghum bicolor* L. Moench) is the fourth largest crop after wheat, rice and maize which is being cultivated by resource poor, small and marginal farmers in semi-arid region of the country. Sorghum, popularly known as jowar is the most important food and fodder crop of dryland agriculture. In India, Maharashtra and Vidarbha the area under sorghum is showing declining trend. The decline in area is mainly because soybean, maize and cotton are the high valued crops which are replaced the sorghum.

Sorghum is rich in a variety of nutrients, including B vitamins, which play an essential role in metabolism, neural development, and skin and hair health. It's also a rich source of magnesium, a mineral that's important for bone formation, heart health, and over 600 biochemical reactions in your body, such as energy production and protein metabolism. In addition, sorghum is high in antioxidants like flavonoids, phenolic acids, and tannins. Eating a diet rich in these antioxidants can lower oxidative stress and inflammation in your body. Frontline Demonstration is one of the important extension programme conducted by Dr. Panjabrao Deshmukh Krushi Vidyapeeth, Akola to evaluate and demonstrate the production potential of newly released varieties. PKV-Kranti is one of the *Rabi* sorghum variety developed by university in year 2004. For wide spread of the PKV-Kranti variety of sorghum in Maharashtra and particularly in Vidharbha Region University conducted more than 600 demonstrations. Out of these, 200 demonstrations were given through FLDs and 400 demonstrations were given through TSP (Tribal sub plan) in year 2018-2019. Amongst these 200 FLDs, 100 demonstrations were conducted in part of Akola, Amravati, Washim and Buldana district. Whereas 25 demonstrations were conducted in saline track of Amravati, 25 demonstrations of organic sorghum cultivation in Washim district, 25 demonstrations in Jalgaon Jamod, 25 demonstrations in Ghatkhed by KVK in the year 2018-2019. As well as in the year 2017-2018, 25 demonstrations were conducted in part of Akola, Amravati and Buldana district.

In this context, to study the impact of sorghum demonstrations on the beneficiary farmers, the present study was framed and conducted in Akola and Amravati district.

Materials and Methods

In present study, ex-post-facto design of social research was used. In the ex-post-facto design

two groups were selected one beneficiary and another non-beneficiary group of Frontline Demonstrations of sorghum farmers. The respondents were identified from the selected villages on the basis of number of sorghum demonstrations conducted in last 2 years; three villages viz. Tadvel, Warud Vadner and Patur were selected from these three tahsils, respectively. Total 25 beneficiary farmers and 25 non-beneficiary farmers were selected from each Tadvel, Warud Vadner villages while 10 beneficiary and 10 non-beneficiary farmers from Patur village. Thus, data were collected with the help of structured and pretested interview schedule from 120 farmers i.e. 60 beneficiary and 60 non-beneficiary farmers those who were conducted FLD of *Rabi* sorghum PKV-Kranti variety since last two year of Sorghum Research Unit, Dr. PDKV, Akola. Here, beneficiaries were those farmers who cultivated PKV-Kranti variety in *Rabi* season through FLD and non-beneficiary farmers who cultivated local variety in same season from same villages.

Result and Discussion

The data with regards to the level of knowledge possessed by the beneficiary and non-beneficiary sorghum farmers have been furnished in Table 1. It is indicated that, 95.00 per cent of beneficiary farmers had high knowledge level. In case of non-beneficiary farmers, 76.67 per cent of them had medium level of knowledge about recommended sorghum cultivation practices.

The data with regards to the level of adoption about recommended cultivation practices of sorghum of beneficiary and non-beneficiary farmers have been furnished in Table 2. It is indicated that, 86.67 per cent of beneficiary farmers found to have high adoption level. In case of non-beneficiary farmers, 63.34 per cent of them were found in medium level of adoption about recommended cultivation practices.

It is evident from Table 3 that, majority (71.67%) of beneficiary farmer had high productivity of sorghum crop i.e. above 24 qtl/ha. In case of non-beneficiary, cent per cent farmers had medium level of productivity i.e. between 13 to 24 qtl/ha.

It is evident from Table 4 that, majority (71.67%) of the beneficiary farmers had annual income between Rs. 50001 to 100000/-, followed by 26.66 per cent had annual income up to Rs. 50000/- and only 01.67 per cent farmer had annual income above Rs. 100000/-. In case of non-beneficiary farmers, majority (96.67%) of farmers had annual income up to Rs. 50000/-, followed by 03.33 per cent had annual income between Rs. 50001/- to Rs. 100000/- and none of the farmers had annual income above Rs. 100000/-.

A cursory look at Table 5 revealed that, mean score of knowledge (75.20), adoption (66.07), productivity (24.82) and annual income (Rs.33267.58/-) of the beneficiary farmers were found to be higher than mean score of knowledge (56.35), adoption (48.15), productivity (21.03) and annual income (Rs. 24339.53/-) of the non-beneficiary farmers. It was also found that there was change in knowledge, adoption, productivity and annual income to the tune of 33.45, 37.20, 18.02 and 36.68 per cent, respectively of beneficiary farmers over non-beneficiary farmers as a result of sorghum demonstrations.

Spread up area of sorghum variety PKV-Kranti

Table 6 revealed that, cent per cent beneficiary farmers adopted PKV-Kranti variety during *Rabi* season 2018-2019. More than half of the beneficiary farmers (53.33%) provide

seed of PKV- Kranti variety to the other farmers. Out of these 45.00 per cent of them distributed seeds to others farmers within their own villages and remaining 08.33 per cent distributed seeds outside the village. As per the available agricultural statistics, PKV-Kranti variety of sorghum was sown on 2,80,000 ha area out of 26,00,000 ha in Maharashtra and in Vidarbha it was sown on about 18,000 ha out of 26000 ha during *Rabi* season in the year 2018-19.

Table 1: Distribution of beneficiary and non-beneficiary farmers according to the Knowledge level about recommended cultivation practices of sorghum

S. No.	Knowledge	Beneficiary farmers (n=60)		Non-beneficiary farmers (n=60)	
		Frequency	Per cent	Frequency	Per cent
1.	Low	00	00.00	00	00.00
2.	Medium	03	05.00	46	76.67
3.	High	57	95.00	14	23.33
	Total	60	100.00	60	100.00

Table 2: Distribution of beneficiary and non-beneficiary farmers according to the Adoption level about recommended cultivation practices of sorghum

S. No.	Adoption	Beneficiary farmers (n=60)		Non-beneficiary farmers (n=60)	
		Frequency	Per cent	Frequency	Per cent
	Low	00	00.00	12	20.00
	Medium	08	13.33	38	63.34
	High	52	86.67	10	16.66
	Total	60	100.00	60	100.00

Table 3: Distribution of the beneficiary and non-beneficiary farmers according to the Productivity of sorghum

S. No.	Productivity (Qt/ha)	Beneficiary farmers (n=60)		Non-beneficiary farmers (n=60)	
		Frequency	Per cent	Frequency	Per cent
	Low	00	00.00	00	00.00
	Medium	17	28.33	60	100.00
	High	43	71.67	00	00.00
	Total	60	100.00	60	100.00

Table 4: Distribution of the beneficiary and non-beneficiary farmers according to their Annual income

S. No.	Annual income (Rs.)	Beneficiary farmers (n=60)		Non-beneficiary farmers (n=60)	
		Frequency	Per cent	Frequency	Per cent
	Up to 50000/-	16	26.66	58	96.67
	50001 to 100000/-	43	71.67	02	03.33
	above 100000/-	01	01.67	00	00.00
	Total	60	100.00	60	100.00

Table 5: Impact of sorghum demonstrations on the beneficiary farmers over non-beneficiary farmers

S. No.	Impact dimension	Mean score		Per cent Change
		Beneficiary farmers	Non-Beneficiary farmers	
1.	Knowledge	75.20	56.35	33.45
2.	Adoption	66.07	48.15	37.20
3.	Productivity	24.82	21.03	18.02
4.	Annual Income	33267.58	24339.53	36.68
	Mean Impact			31.34

Table 6: Spread up area of sorghum variety PKV-Kranti

S. No.	Statements	Beneficiary farmer (n=60)	
		Frequency	Per cent
1	Adopted sorghum variety PKV-Kranti during <i>Rabi</i> season 2018-19	60	100.00
2	Beneficiary farmers gave seeds of sorghum PKV-Kranti to other farmers	32	53.33
3	Supplied seeds within their village to other farmers	27	45.00
4	Supplied seeds outside their village to other farmers	05	08.33

Table 7: Area under PKV-Kranti variety in year 2018-19

S. No.	Location	Area of Sorghum (ha)	Area under PKV-Kranti variety (ha)	Adoption of PKV-Kranti variety (%)
1	Maharashtra	26,00,000	280000	69.23
2	Vidarbha	26000	18000	10.76

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