



Impact of front line demonstration on adoption of berseem fodder production technology by the farmers

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ABSTRACT : In this study researchers focused on the extent of adoption of berseem fodder production technology by the farmers. The investigation was concern with Krishi Vigyan Kendra Chittorgarh. The sample included 120 beneficiaries and 120 non-beneficiaries of front line demonstrations on berseem fodder cultivation. The results show that majority of beneficiary and non-beneficiary respondents belonged to age group (27- 41 years), herd size (4-10 animals), moderate participation in extension activities (4-7 extension activities), literate upto primary education and possessed small size of land holdings. Majority of the beneficiaries and non-beneficiaries were found to have medium extent of adoption of berseem fodder production technology. Beneficiary respondents possessed maximum adoption regarding “Soil treatment and field preparation” with 83.30 MPS. While, non-beneficiary respondents indicated highest adoption regarding “irrigation management”, of berseem fodder production technology with 38.98 MPS. Similarly, they possessed least adoption regarding the “insect and disease management” (1.69 and 2.69 MPS) aspect of barseem fodder cultivation. There was a significant difference in extent adoption of beneficiary and non-beneficiary farmers with regards to berseem fodder production technology.

KEY WORDS : Front line demonstration, Adoption, Berseem fodder production technology, Beneficiary, Non-beneficiary

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INTRODUCTION

Animal Husbandry is not only a subsidiary occupation to agriculture but it is a major economic activity, especially in the arid and semi-arid regions of the Rajasthan. The nutritive value of feed and fodder has a significant bearing on productivity of livestock. Due to increasing pressure on land for growing food grains, oil seeds and pulses adequate attention has not been given to the production of fodder crops. Farmers in Rajasthan are facing difficult times because of unaffordable fodder prices as a result

of a ‘dry spell’ in the state. “It is a very difficult period for the farmer. In such a situation, he is in a dilemma whether to look after the kids or the animals first. A rich farmer would still somehow manage but for a poor farmer it would be a helpless situation,” said Abdul Sabab, a farmer (Meena *et al.*, 2011). Farmers have poor knowledge in fodder production systems/ practices and feeding technologies. Demonstration would involve measures for encouraging action including essential steps leading to adoption of better technologies for fodder production, utilization and improved livestock rearing practices by farm women (Pandey *et al.*, 2013).

Krishi Vigyan Kendra has a mandatory work to conduct front line demonstrations. The main objective of FLDs is to demonstrate newly released fodder crop production and protection technologies and its management practices in the farmers’ fields under

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different agro-climatic regions farming situations. The purpose is to convince extension functionaries and farmers together about the potentialities of the technologies for further wide scale diffusion and Front Line Demonstration are used as a source of generating data on factors contributing higher fodder crop yield and constraints of production under various farming situations. Therefore, the study entitled “Impact of Front Line Demonstrations on Adoption of Berseem Fodder Production Technology by the Farmers” was conducted. The specific objectives of the study are as follows:

Objective :

- To find out the extent of adoption of beneficiary and non-beneficiary farmers about berseem production technology.
- To compare the adoption among beneficiary and non-beneficiary respondents about berseem production practices.

MATERIAL AND METHODS

The present study was conducted in purposively selected Chittorgarh district of Rajasthan. Chittorgarh district comprises 11 Panchayat Samities out of these one Panchayat Samiti Chittorgarh was selected purposely for the present investigation due to the maximum number of FLDs on berseem fodder were conducted in this Panchayat Samiti by KVK, Chittorgarh during 2007-2012. As per record available at the KVK, Chittorgarh 200 FLDs on berseem fodder were conducted in the five adopted villages. All these five villages were included in the present study. Out of 200 beneficiary farmers, 120 beneficiaries were selected randomly. Likewise, a sample of 120 non-beneficiary respondents on whose farm FLDs were not conducted was also selected randomly. These 120 respondents were selected randomly from 5 other villages. Thus, the total study sample comprised of 240 respondents.

To measure the extent of adoption of berseem production technology by the respondents, an adoption test was developed. Nine major practices of berseem production technology were included in the test. Each selected practice was further divided into several sub sections. The response under each sub-item was taken on a three point continuum *viz.*, “always”, “sometime” and “never” which were assigned 2, 1 and 0 score, respectively. The minimum and maximum scores which

a respondent could obtain on this scale were 0 and 52, respectively. Data were collected through the personal interview technique.

The total score of an individual farmer for all the items was calculated. The mean was computed to see the level of adoption among beneficiary and non-beneficiary farmers. The adoption index for each respondent was calculated. In order to find out whether or not there was any difference in the adoption among the two categories of respondents regarding berseem production technology ‘Z’ test was used.

RESULTS AND DISCUSSION

The results of the present study as well as relevant discussions have been presented under following sub heads:

Personal attributes of respondents :

Prior to in depth assessment of the different aspects included under the study, it is important to know the personal profile of the sampled respondents. Therefore, background information with respect to their age, education, herd size, land holding, income level and some other relevant information has been collected and presented in the Table 1 given in this section.

Age :

Perusal of Table 1 clearly reveals that majority of total respondents (60.00%) were in the age group of 27 to 41 years. The respondents below 27 years and above 41 years of age were 18.33 and 21.67 per cent, respectively. Further, it was observed that 75 (62.5%) beneficiary and 69 (57.5%) non-beneficiary farmers belonged to middle age group. Likewise, 20.83 per cent beneficiary and 15.83 per cent non-beneficiary farmers were young in age. The number of member and non-member respondent in higher age group were found to be 20 and 32, respectively.

Herd size :

Herd size plays a vital role in requirement of fodder for an individual farmer. The figures reported in Table 1 indicate that majority (73.33%) of total respondents possessed medium herd size (4 to 10 animals). While, 17.5 per cent and 9.16 per cent of total respondents were from large (more than 10 animals) and small (less than 4 animals) herd size, respectively. A close observation of

the data in the table visualizes that 75.83 per cent beneficiary and 70.83 per cent non-beneficiary farmers were present in medium herd size category. Further, 10.83 and 13.33 per cent beneficiaries were found in small and large herd size category, respectively. Whereas, 7.5 and 21.67 per cent non-beneficiary farmers were possessed small and large size of herd, respectively.

Participation in extension activities :

It could be visualized from Table 1 that out of 240 respondents, 56.25 per cent were found to have medium level of participation in extension activities, 9.16 per cent respondents were found to have less participation while, 34.59 per cent respondents were having high level of participation in extension activities. A close observation of data clearly show that non-beneficiaries of fodder demonstrations had less participation in extension activities than the beneficiaries as 58.33, 31.67 and 10.00 per cent beneficiary respondents had medium, high and less participation, respectively. Whereas, non-beneficiary respondents were having 54.17, 8.33 and 37.50 per cent medium, high and low level of participation, respectively

in extension activities.

Education :

Data presented in Table 1 show that 58.75 per cent of the respondents were educated upto primary class, 24.17 per cent respondents were educated upto middle class and above level and illiterate were observed to be 17.08 per cent in the study area. It could also be noted that 58.33 per cent beneficiaries and 59.17 per cent non-beneficiaries were educated upto primary class. While, 26.67 per cent beneficiary and 21.67 per cent non-beneficiary farmers were educated upto middle class and above. Further, 15.00 per cent beneficiary and 19.17 per cent non-beneficiary respondents were illiterate.

Land holding :

The data presented in Table 1 reveal that out of 240 fodder demonstration beneficiaries and non-beneficiaries, 55.83 per cent were small, 28.75 per cent were marginal and 15.41 per cent were big farmers. It was further observed that majority of beneficiaries (57.5%) and non-beneficiaries (54.16%) possessed small land holding.

Attributes	Beneficiaries (n=120)		Non-beneficiaries (n=120)		Overall (n=240)	
	f	%	f	%	f	%
Age						
Low (< 27)	25	20.83	19	15.83	44	18.33
Medium (27- 41)	75	62.5	69	57.5	144	60.00
High (>41)	20	16.67	32	26.67	52	21.67
Herd size						
Small (< 4 animals)	13	10.83	9	7.5	22	9.16
Medium (4-10 animals)	91	75.83	85	70.83	176	73.33
Big (> 10 animals)	16	13.33	26	21.67	42	17.5
Participation in extension activities						
Low (< 4)	12	10.00	45	37.50	22	9.16
Medium (4- 7)	70	58.33	65	54.17	135	56.25
High (> 7)	38	31.67	10	8.33	83	34.59
Education						
Illiterate	18	15.00	23	19.17	41	17.08
Primary	70	58.33	71	59.17	141	58.75
Middle and above	32	26.67	26	21.67	58	24.17
Land holding						
Marginal	39	32.5	30	25.00	69	28.75
Small	69	57.5	65	54.16	134	55.83
Big	12	10.00	25	20.83	37	15.41

f-frequency, %- percentage

While, 32.5 per cent and 10.00 per cent beneficiary respondents were observed marginal and big size land holders. In case of non- beneficiary respondents, 25.00 per cent and 20.83 per cent were categorized as marginal and big land holders, respectively.

Distribution of respondents according to their level of adoption :

The adoption of the respondents about improved practices of barseem cultivation was assessed. For this the respondents were divided into three adoption groups on the basis of adoption scores obtained by them. The data related to the adoption of both categories of respondents *i.e.* beneficiary and non-beneficiary indicate that the farmers' adoption of improved practices of barseem cultivation have wide dispersion. In order to place the respondents into appropriate category adoption scores were categorized as reported in Table 2.

The range of score obtained by total respondents was divided into three groups and frequencies as well as percentage of the respondents falling in each group were calculated (Fig. 1). Table 2 indicates that fifty per cent of FLD beneficiary and 58.33 per cent of non- beneficiary farmers were in the medium category of adoption of barseem cultivation technology. It was observed that 20.00 per cent beneficiary farmers adopted the cultivation

technology to a high level. It was also noted that only 6.67 per cent non-beneficiary respondents claimed his adoption to the extent as high in the study area. A wide disparity existed between members and non-members with regard to adoption of improved barseem cultivation practices. It may be because of the reason that beneficiary respondents possessed more knowledge about barseem cultivation practices and have direct contact with scientists of Krishi Vigyan Kendra than non-beneficiary respondents.

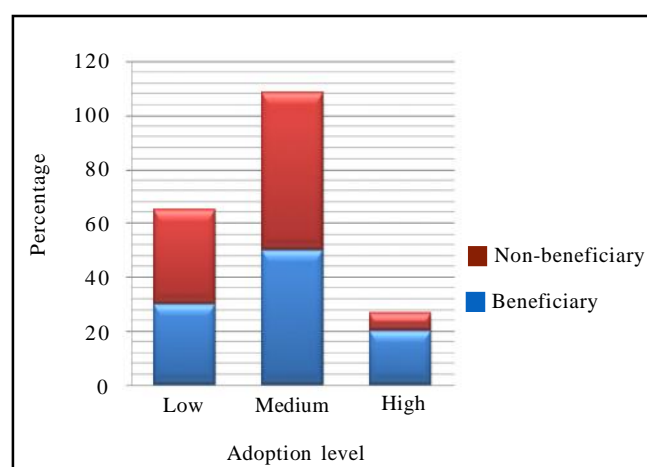


Fig. 1 : Distribution of respondents according to their level of adoption

Table 2 : Distribution of respondents according to their level of adoption

(n=240)

Sr. No.	Level of adoption	Beneficiaries (n = 120)		Non- beneficiaries (n = 120)		Total	
		f	%	f	%	f	%
1.	Low (<13.6)	36	30.00	42	35	78	32.5
2.	Medium (13.6-31.8)	60	50.00	70	58.33	130	54.17
3.	High (>31.8)	24	20.00	8	6.67	32	13.33

f-frequency, %- percentage

Table 3 : Level of adoption of barseem cultivation technology among beneficiary and non – beneficiary respondents

(n=240)

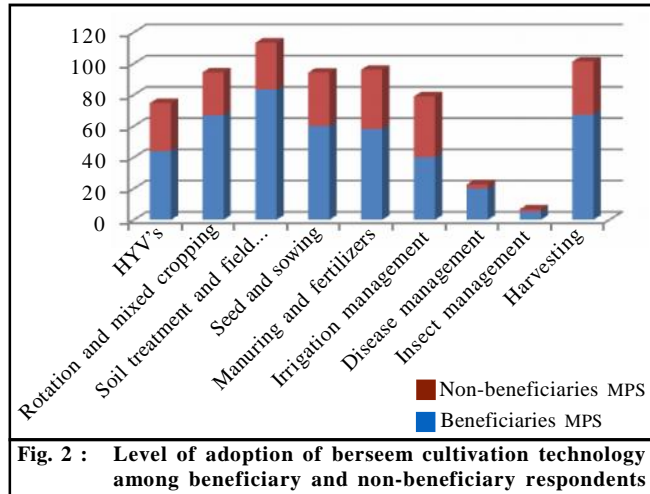
Sr. No.	Package of practice	Beneficiaries (n=120)		Non- beneficiaries (n=120)	
		MPS	Rank	MPS	Rank
1.	HYV's	44.00	6	30.69	5
2.	Rotation and mixed cropping	66.70	3	27.66	7
3.	Soil treatment and field preparation	83.30	1	30.08	6
4.	Seed and sowing	60.00	4	34.21	3
5.	Manuring and fertilizers	58.00	5	38.00	2
6.	Irrigation management	40.00	7	38.98	1
7.	Disease management	20.00	8	2.69	8
8.	Insect management	5.00	9	1.69	9
9.	Harvesting	67.14	2	34.11	4

MPS- Mean per cent score

Extent of adoption :

Level of adoption of berseem cultivation technology among beneficiary and non-beneficiary respondents:

A study of Table 3 shows that beneficiary respondents scored highest in adoption of “soil treatment and field preparation” with MPS 83.30. While, non-beneficiary respondents possessed maximum adoption regarding “irrigation management” with 38.98 MPS (Fig. 2).



The Table 3 indicated that adoption of beneficiary farmers regarding other aspects like “harvesting”, “rotation and mixed cropping”, “seed and sowing”, “manuring and fertilizers”, “high yielding varieties”, “irrigation management” and least adoption in disease management” and “insect management” were found to be 67.14, 66.70, 66.00, 58.00, 44.00, 40.00, 20.00 and 5.00 MPS, respectively.

Whereas non-beneficiary farmers 38.00, 34.21, 34.11, 30.69, 30.08, 27.66, 2.69 and 1.69 MPS of adoption were reported with regard to “manuring and fertilizers”, “seed and sowing”, “harvesting”, “high yielding varieties”, “soil treatment and field preparation”, “rotation and mixed cropping” and least in “disease management” and “insect management”.

The present findings are in line with the findings of Manju (2002) reported that fertilizer application and irrigation methodology practices were partially adopted by the farmers. Waman *et al.* (2003) reported that bajara growers adopted recommended varieties, tillage operations, time of sowing, intercropping practices, seed rate. Meena *et al.* (2011) who revealed that farmers had very poor adoption of disease and insect pest control practices of cluster production technology.

Comparison of level of adoption between beneficiary and non-beneficiary farmers with regards to different practices of berseem cultivation technology :

- H₀: There is no significant difference in the adoption of beneficiary and non-beneficiary farmers about barseem production technology.
- H₁: There is significant difference in the adoption of beneficiary and non-beneficiary farmers about barseem production technology.

The data related to level of adoption of both beneficiary and non-beneficiary respondents incorporated in Table 4 shows that calculated ‘Z’ value (1.96 and 2.58 at 1% and 5% level of significance) was higher than the tabulated value at 5 per cent level of significance in all the nine package of practices of barseem production technology.

Table 4 : Comparison of level of adoption between beneficiary and non- beneficiary farmers with regards to different practices of berseem cultivation technology

Sr. No.	Package of practice	Beneficiaries (n=120)		Non- beneficiaries (n=120)		‘Z’ value
		Mean	±SD	Mean	±SD	
1.	HYV's	2.2	0.98	1.72	0.88	3.99**
2.	Rotation and mixed cropping	2.0	0.77	1.7	0.78	3.01**
3.	Soil treatment and field preparation	2.5	1.63	1.98	1.34	2.71**
4.	Seed and sowing	4.1	2.43	2.41	1.8	6.12**
5.	Manuring and fertilizers	2.9	1.37	2.21	1.27	2.25**
6.	Irrigation management	3.0	1.55	2.24	1.55	3.8**
7.	Disease management	0.8	1.25	0.55	0.76	2.68**
8.	Insect management	0.5	0.67	0.39	0.58	4.37**
9.	Harvesting	4.7	1.1	3.68	1.62	5.73**

** indicate significance of value at P=0.01

This calls for rejection of Null hypothesis and acceptance of alternative hypothesis leading to conclusion that there is significant difference in adoption level with regard to all nine practices of cultivation in beneficiary and non-beneficiary respondents. In other words, there is no similarity between the extent of adoption of beneficiary and non-beneficiary farmers regarding barseem production technology.

The higher level of adoption of improved barseem production technology among the beneficiary in comparison to non-beneficiary respondents, may be because of the reason that the FLDs were conducted on the field of beneficiary farmers only by the KVK, Chittorgarh and they have also been provided necessary guidance, literature, demonstration and training by the KVK scientists. Whereas, the FLDs were not conducted on field on non-beneficiary farmers and they might not have been provided any type of guidance and training by the SMSs. This might have resulted in higher level of adoption of beneficiary farmers than that of non-beneficiary farmers about improved barseem fodder production technology. Similar findings were also reported by Singh and Sharma (2005) and Singh *et al.* (2011).

Conclusion :

It could be concluded that majority of the beneficiary and non-beneficiary respondents were found to have medium extent of adoption of berseem production technology. Beneficiary respondents possessed maximum adoption regarding "Soil treatment and field preparation", "harvesting" and "Rotation and mixed cropping" with 83.30, 67.14 and 66.70 MPS, respectively. While, non-beneficiary respondents indicated highest adoption regarding "irrigation management", "manuring and fertilizer application" and "seed and sowing technology" of berseem with 38.98, 38.00 and 34.21 MPS, respectively. Similarly, they possessed least adoption regarding the "insect and disease management" (1.69 and 2.69 MPS) aspect of barseem cultivation. There was a significant difference in extent adoption of

beneficiary and non-beneficiary farmers with regards to berseem production technology. The impact of front line demonstrations on adoption of berseem fodder production technology by the farmers was significant and positive, but still there is an urgent need to improve the adoption level of both the categories of berseem fodder growers.

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