



Research Article

A comparative study between demonstrator and non-demonstrator farmers of relay cropping system

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SUMMARY : In the present study attempt was made to know the socio-economic and psychological characteristics of the demonstrator and non-demonstrator farmers of groundnut-pigeonpea relay cropping system. The study was conducted in saurashtra region of Gujarat state. The information about characteristic of farmer was collected through personal interview schedule. From this study it could be revealed that demonstrator respondents found superior than non-demonstrator respondent in case of social participation, extension participation, risk preference, irrigation potentiality, knowledge level, extent of adoption and yield level.

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KEY WORDS :

Relay cropping,
Impact, Knowledge,
Adoption, Yield,
Comparison

BACKGROUND AND OBJECTIVES

Relay cropping is most useful now a day because it insulates farmer's investment of land, labour and capital against advertisement of nature in order to sustain their living. Saurashtra region of Gujarat state has low and erratic rainfall so the crop production potential is also low. Under such condition groundnut-pigeonpea relay cropping system is best suited to this region. For increasing area under this system is necessary to disseminate this technology through highly perfect communication media. The aim of front line demonstration is to demonstrate under real farmer's field situation, the superior production potentials and benefits of the latest improved technologies in agriculture.

Relay cropping is a common practice in the low level equilibrium farmers to insulate their investment against advertises of nature, in order to sustain their livings. The groundnut-pigeonpea relay cropping system has been introduced through front line demonstration programme from 1991-92 in the main groundnut area *i.e.* Saurashtra. This system has proved that the relay pigeonpea does not reduce the yield of groundnut. This result has popularised this system among

the seven districts of saurashtra region where the main *Kharif* crop is groundnut. There are insufficient irrigation facilities for winter crop in saurashtra. The small quantity of well water, received during monsoon is not enough for wheat, onion and other winter crops. Only pigeonpea can be taken up by this small quantity of water hence, it become popular in saurashtra region. The other factors are, it gives an additional income, without reduction in production of groundnut, It also provides the cattle feed and fuel and improves the soil fertility.

RESOURCES AND METHODS

The present study was conducted in saurashtra region of Gujarat state. Out of seven district of saurashtra region, four districts were selected in front line demonstration on groundnut-pigeonpea relay cropping system. The selected four district were Jungadh, Rajkot, Porbandar and Jamnagar from the four selected district, 9 talukas were randomly selected in which front line demonstrations were organized. In 9 talukas the 21 villages conducted front line demonstration on groundnut-pigeonpea relay

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cropping system in last three years. The equal number of demonstrator and non-demonstrator respondents from the same village was randomly selected. Total 104 farmers were selected for this study (demonstrator 52 and non-demonstrator 52). The data were collected with the help of personal interview schedule. In order to test the significance of difference in average for different variables of both categories of the respondents under study, Z-test was used (Rao, 1983).

OBSERVATIONS AND ANALYSIS

The responses obtained from the respondents were

subjected to statistical test to find out the difference between two groups of respondents with respect to 11 selected characteristics. For this purpose Z-test was applied. The findings in these regards are presented in Table 1.

The data in Table 1 indicate that 'Z' value were not significant in case of age, education, annual income and size of land holding. Hence, it can be concluded that there was no significant difference in case of age, education, annual income and size of land holding in demonstrator and non-demonstrator respondents. While in case of social participation, extension participation, risk preferences, irrigation potentiality, knowledge level, extent of adoption

Table 1: Comparison between the selected characteristics of demonstrator and non-demonstrator respondents

Sr.No.	Variables	Unit	Mean values		Mean difference	'Z' values
			Demonstrator (n=52)	Non-demonstrator (n=52)		
1.	Age	Year	43.40	43.75	-0.35	0.29 ^{NS}
2.	Education	Std.	7.40	6.90	0.50	0.24 ^{NS}
3.	Annual income	Rank	2.21	2.13	0.80	0.72 ^{NS}
4.	Social participation	Score	3.13	2.46	0.67	2.68 ^{**}
5.	Extension participation	Score	41.42	21.44	19.98	44.4 ^{**}
6.	Size of land holding	Hectare	3.52	3.20	0.32	1.06 ^{NS}
7.	Risk preference	Score	11.71	8.58	3.13	7.83 ^{**}
8.	Irrigation potentiality	Per cent	58.94	49.29	9.65	4.80 ^{**}
9.	Knowledge level	Per cent	64.33	50.36	13.97	7.89 ^{**}
10.	Extent of adoption	Per cent	65.62	53.00	12.62	8.14 ^{**}
11.	Yield level	kg/ha	3070.63	1979.12	1991.51	13.17 ^{**}

* and ** Indicate significance of value at P=0.05 and 0.01, respectively, NS=Non-significant

Table 2 : Knowledge level about groundnut- pigeonpea relay cropping system of the respondents

Sr. No.	Knowledge level category	Demonstrator (n=52)		non-demonstrator (n=52)	
		Frequency	Per cent	Frequency	Per cent
1.	Low	7	13.46	7	13.46
2.	Medium	19	36.54	34	65.39
3.	High	26	50.00	11	21.15
	Mean	64.33		50.36	
	S.D.	14.058		11.39	

Table 3: Extent of adoption about groundnut-pigeonpea relay on cropping system by the respondents

Sr. No.	Extent of adoption category	Demonstrator (n=52)		non-demonstrator (n=52)	
		Frequency	Per cent	Frequency	Per cent
1.	Low	6	11.54	11	21.15
2.	Medium	8	15.38	31	59.62
3.	High	38	73.08	10	19.23
	Mean	65.62		53.00	
	S.D.	9.24		12.74	

Table 4 : Yield level of respondents about groundnut-pigeonpea relay cropping system

Sr. No.	Yield level category	Demonstrator (n=52)		non-demonstrator (n=52)	
		Frequency	Per cent	Frequency	Per cent
1.	Low	10	19.23	13	25.00
2.	Medium	12	23.08	30	57.69
3.	High	30	57.69	09	13.31
	Mean	3070.63 kg/ha		1979.12 kg/ha	
	S.D.	516.04		669.04	

and yield level, highly significant differences were observed at 0.01 level of significance.

The data of Table 2 clearly indicate that 50 per cent and 36.54 per cent demonstrator fell in the category of high and medium knowledge group, respectively. In case of non-demonstrator 65.39 per cent and 21.16 per cent respondents fell in medium and high knowledge group, respectively. The rest of 13.46 per cent respondents of both the groups fell in low knowledge group. It is quite clear from the data that the majority demonstrator respondents 50.00 per cent fell in high knowledge group. More over the mean knowledge score of demonstrator was 64.33 per cent against the mean score of non-demonstrators 50.36 per cent. Thus, demonstrators were found superior than non-demonstrators. The probable reason might be that demonstration of groundnut-pigeonpea relay cropping system had helped them to acquire more knowledge.

The data presented in Table 3 show that that majority (73.08 %) demonstrator respondents fell in high adoption category. While majority non-demonstrator respondents (59.62 %) fell in medium adoption category. Demonstrator 15.38 per cent and 11.54 per cent demonstrator respondents fell in medium and low adoption category, respectively. In case of non-demonstrator respondents 19.23 per cent and 21.15 per cent respondents fell in high and low adoption category, respectively.

The mean adoption of the demonstrator respondents was 65.62 per cent against the mean (53.00 %) of non-demonstrator respondents. The probable reason might be that demonstrator respondents were more benefited of different extension activities, input supply and acquire guidance of research scientists.

The data presented in Table 4 indicate that more than half (57.69 %) demonstrator respondents fell in high yield level category. While majority non-demonstrator respondents (57.69 %) fell in medium yield level category. The 23.08 per cent and 19.23 per cent demonstrator respondents fell in medium and low yield level category,

respectively. In case of non-demonstrator respondents 25.00 per cent and 13.31 per cent respondents fell in high and low yield level category, respectively.

The mean yield score of demonstrator respondent was 3070.63 kg/ha against the mean yield score (1979.12 kg/ha) of non-demonstrator respondents. Thus, the demonstrator respondents were found superior over non-demonstrator respondents in yield level.

Conclusion :

From the above discussion, it can be concluded that impact of front line demonstration on groundnut-pigeonpea relay cropping has beneficial effect on selected characteristics of demonstrator like social participation, extension participation, risk preference, irrigation potentiality, knowledge level, extent of adoption and yield level.

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