Research Article

Knowledge level of beneficiary and non- beneficiary farmers about improved groundnut production technology

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SUMMARY : The study was undertaken in Banaskantha district of Gujarat to know the knowledge level of farmers about groundnut production technologies under FLD on a sample of 70 beneficiary and 70 non-beneficiary farmers. It was observed that maximum number of beneficiary farmers (55.72%) and non-beneficiary farmers (62.86%) had medium level of knowledge about groundnut production technologies, where as 35.71 per cent beneficiary farmers and 4.28 per cent non-beneficiary farmers had high level of knowledge. Significant difference between beneficiary and non-beneficiary farmers with respect to knowledge level were found, it indicates beneficiary farmers had higher level of knowledge as compared to non-beneficiary farmers. Education, annual income, extension participation and scientific orientation had positive and significant association with the knowledge level of improved groundnut production technology.

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BACKGROUND AND OBJECTIVES

The front line demonstration is the concept evolved by Indian Council of Agricultural Research with the inception of the Technology Mission on Oilseed during mid-eighties. Under this programme the technologies are demonstrated for the first time by the scientists themselves before being fed to the main extension system of the state department of agriculture.

Groundnut is well known as the king of edible oilseeds and major source of edible oil. It is a major foreign exchange earning oilseed crop. But, India instead of being self sufficient has turned out to be a large importer of edible oil in last decade. It is due to more demand of edible oil and less production of groundnut in the country. Groundnut is mainly grown in Saurashtra region of Gujarat state and it is an important and newly introduced crop in Banaskantha district

among the oilseed crops. It has commendable area in the district and is largely grown under irrigated condition. It plays a vital role in improving the socio-economic condition of the farming community in the operational area of the Banaskantha district. It is largely used for oil and cake purpose which is marketed through out the country.

Balabhaskar (1991) stated that majority (60.66%) of the respondents had medium knowledge about recommended rainfed groundnut practices followed by high (20.68 %) and low (18.66%) knowledge. Rao (1991) reported that majority (52.40 %) of the beneficiaries of OPTP had medium knowledge on improved package of practices of groundnut followed by high (39.70 %) and low (7.9 %) knowledge. In case of non-beneficiaries majority (49.20%) had low knowledge followed by medium(47.60%) and high(3.20 %) knowledge. Veeraiah (1991) revealed that majority

(61.33 %) of the farmers had medium knowledge about recommended critical skills in rain fed groundnut cultivation followed by low (20.00 %) and high(18.67 %) knowledge. Angadi *et al.* (1992) revealed that majority of the farmers possessed medium knowledge of cultivation practices of groundnut. Only 13.00 per cent of the farmers had high knowledge. Nagabhushanam and Prasad (1994) concluded that majority of the respondents (53.68%) of the coconut growers had medium knowledge followed by low (29.30%) and high knowledge (17.02%).

Along with transfer of technology, the basic purpose of these demonstrations is to test research findings on farmer's field and to get direct feedback from the farmers, so that the scientists can reorient their research and training programmes. These demonstrations were conducted mainly on various oil and pulse crops to boost their production and productivity by using latest technologies.

The present study was planned with the following objectives:
– To measure the level of knowledge of beneficiary farmers and non-beneficiary farmers regarding groundnut production technology demonstrated under front line demonstration.
– To find out the relationship of personal, social, economics, situational, communicational and psychological attributes of beneficiary farmers and non-beneficiary farmers with their level of knowledge of improved demonstrated groundnut production technology under front line demonstration.

RESOURCES AND METHODS

The study was conducted in purposively selected four villages of Banaskantha district of Gujarat where FLDs on *Kharif* groundnut crop were conducted by Krishi Vigyan Kendra, Deesa.

A total of 70 beneficiary farmers were randomly selected from these four villages. In order to make comparison, 70 non-beneficiary farmers were also selected from the same villages randomly.

Level of knowledge:

Knowledge is the degree to which an individual is exposed to existence of innovation and gain some understanding necessary to use an innovation properly. Knowledge in the present study was operationalized as the body of understood information possessed by the respondents with respect to improved demonstrated *Kharif* groundnut production technology.

A battery of the questions concerning improved demonstrated *Kharif* groundnut production technology was prepared in consultation with experts and by referring literature. The questions were of objective type. The respondents were asked to reply each question. A score of 'One' and 'Zero' was assigned for correct and incorrect answer, respectively. The score on each question was then summed up and thereby total score obtained by each respondent was calculated. The respondents on the basis of mean and S.D. were classified as under:

Sr. No.	Level of knowledge	Limit
1.	Low level of knowledge	< Mean – S.D.
2.	Medium level of knowledge	Mean ± S.D.
3.	High level of knowledge	> Mean + S.D.

Further, the comparison of beneficiary and non-beneficiary farmers regarding practice-wise knowledge of improved demonstrated groundnut production technology was also made. Based on the responses from the respondents, frequency, percentage and Z test were worked out against the practice-wise knowledge.

OBSERVATIONS AND ANALYSIS

The experimental findings obtained from the present study have been discussed in following heads:

Knowledge level of beneficiary farmers as compared to non-beneficiary farmers regarding improved demonstrated groundnut production technology under FLD:

Knowledge is the cognitive behaviour of an individual. The knowledge of an innovation is prerequisite for adoption. In the present study, it was operationalized as the totality of understood information possessed by the farmers about the improved demonstrated production technology for groundnut crop. The information in this regard is presented in Table 1.

The data given in Table 1 indicate that maximum number of the beneficiary farmers (55.72%) and non-beneficiary farmers

Table 1: Distribution of the respondents according to their knowledge level

Sr. No.	Category	Beneficiary farmers		Non-beneficiary farmers		'Z' value
		No.	Per cent	No.	Per cent	
1.	Low (Up to 11 score)	06	08.57	23	32.86	17.843**
2.	Medium (12 to 20 score)	39	55.72	44	62.86	
3.	High (Above 20 score)	25	35.71	03	04.28	
	Total	70	100.00	70	100.00	

Mean = 15.77   S.D. = 4.76   ** indicate significance of value at P=0.05

(62.86%) had medium level of knowledge about groundnut production technology. On the other hand, 35.71 per cent beneficiary and 4.28 per cent non-beneficiary farmers had high level of knowledge (Nagaraj *et al.,* 2001 and Rao, 1997).

Remaining 8.57 per cent beneficiary and 32.86 per cent non-beneficiary farmers were found having low level of knowledge about groundnut production technology.

The calculated 'Z' value (17.843**) was found to be significant indicating significant difference between

beneficiary and non-beneficiary farmers with respect to their knowledge level.

It can be concluded from the above distribution that beneficiary farmers had higher level of knowledge as compared to non-beneficiary farmers. The probable reason for might be that beneficiary farmers were having better participation in the programme. In depth training was also provided to participating farmers covering full package of practice. The beneficiary farmers were found having close

Table 2 : Distribution of beneficiary and non-beneficiary farmers regarding practice-wise knowledge of improved demonstrated groundnut production technology

Sr. No.	Name of practices	Beneficiary farmers (n = 70)	%	Non-beneficiary farmers (n = 70)	%
1.	Type of groundnut	68	97.14	46	65.71
2.	Improved variety	70	100.00	53	75.71
3.	Seed rate	49	70.00	37	52.85
4.	Seed treatment (DM-45)	35	50.00	12	17.14
5.	Time of sowing	68	97.14	44	62.85
6.	Sowing distance	61	87.14	40	57.14
7.	FYM	45	64.28	26	37.14
8.	Fertilizers	52	74.28	32	45.71
9.	Method of fertilizers application (Basal)	64	91.42	40	57.14
10.	Method of fertilizers application (Top dress)	49	70.00	26	37.14
11.	Use of sulphur	38	54.28	23	32.85
12.	Weeding	61	87.14	42	60.00
13.	Inter culturing	65	92.85	41	58.57
14.	Irrigation	45	64.28	33	47.14
15.	Seed treatment (For white grub)	55	78.57	35	50.00
16.	Dose of insecticide	51	72.85	39	55.71
17.	Disease control	44	62.85	24	34.28
18.	Pest control	56	80.00	39	55.71

Table 3: Relationship of selected personal attributes with level of knowledge of improved demonstrated agricultural technology

Sr. No.	Attributes	Co-rrelation co-efficient ('r' value)	
		Beneficiary farmers	Non-beneficiary farmers
1.	Age	-0.24469*	-0.24108*
2.	Education	0.38775**	0.24819*
3.	Size of family	0.03514[NS]	-0.26704*
4.	Social participation	0.04566[NS]	0.14390[NS]
5.	Farm size	-0.27506*	0.00141[NS]
6.	Annual income	0.33874**	0.06513[NS]
7.	Market orientation	0.12090[NS]	-0.07420[NS]
8.	Source of irrigation	-0.15536[NS]	0.09790[NS]
9.	Extension participation	0.31217**	0.05162[NS]
10.	Source of information	0.26188*	-0.08533[NS]
11.	Scientific orientation	0.32800**	-0.00462[NS]

*and ** indicate significance of values at P=0.05 and 0.01, respectively   NS = Non-significant

contact with KVK scientists and were using more number of sources of information hence, they had more knowledge about improved demonstrated groundnut production technology. Similar results were reported by Lakhera (2000), Chhodavadia (2001) and Singh *et al.* (2005).

Practice-wise knowledge of beneficiary and non-beneficiary farmers regarding improved demonstrated groundnut production technology is depicted in Table 2.

Table 2 reveals that the knowledge about improved variety had 100.00 per cent in beneficiary farmers, followed by type of groundnut (97.14%) and time of sowing (97.14 %). Other major practices like, interculturing (92.85%), method of fertilizers application (basal) (91.42%), sowing distance (87.14%), weeding (87.14%) and pest control (80.0%) had good knowledge about groundnut crop in beneficiary farmers. Similar work on the same crop was done by Patil and Bhonde (2009) and Badhala and Lal (2012).

On the other hand, the non-beneficiary farmers had major knowledge about improved variety (75.71%), type of groundnut (65.71%), time of sowing (62.85%), weeding (60.00%), inter-culturing (58.57%), sowing distance (57.14%) and method of fertilizers application (basal) (57.14%).

It can be concluded from the above distribution that beneficiary farmers had higher level of knowledge in all practices of groundnut production technology as compared to non-beneficiary farmers.

Relationship between personal attributes of farmers with their level of knowledge of improved demonstrated groundnut production technology under FLD:

Relationship between selected personal attributes of the beneficiary and non-beneficiary farmers, such as personal, social, economics, situational, communicational and psychological variables with their level of knowledge on improved demonstrated groundnut production technology were worked out by calculating co-efficient of correlation. The result with regard to relationship between independent variables and knowledge level of respondents is presented in Table 3.

The data presented in Table 3 show that the independent variables *viz.,* education (0.38775), annual income (0.33874), extension participation (0.31217) and scientific orientation (0.32800) were positively and significantly related with knowledge level of improved demonstrated groundnut production technology by the beneficiary farmers at 0.01 level of significance. Whereas, source of information (0.26188) was positively and significantly related with knowledge level of improved demonstrated groundnut production technology by the beneficiary farmers at 0.05 level of significance. Remaining age (-0.24469) and farm size (-0.27506) were negatively and significantly related with knowledge level of improved demonstrated groundnut production technology by the

beneficiary farmers at 0.05 level of significance. It can be concluded that education, annual income, extension participation, source of information and scientific orientation of the beneficiary farmers were positively related with their level of knowledge of improved demonstrated groundnut production technology. On the other hand age and farm size were negatively and significantly related with their level of knowledge of improved demonstrated groundnut production technology. Remaining four variables; size of family, social participation, market orientation and source of irrigation were failed to establish any significant relationship with knowledge level of improved demonstrated groundnut production technology by the beneficiary farmers. It was indicating no significant relationship between size of family, social participation, market orientation and source of irrigation with their level of knowledge of improved demonstrated groundnut production technology. Similarly Badhala (2012) and Saroj Choudhary (2011) worked on the impect of front line demonstrations on adoption of groundnut production technology by the farmers of Rajasthan and mungbean, respectively.

Among non-beneficiary farmers, the calculated correlation co-efficient value in case of education (0.24819) was positively significant and age (-0.24108) and size of family (-0.26704) were negatively significant at 0.05 level of significance. It can be concluded that education was positively and age and size of family of the non-beneficiary farmers were negatively related with their level of knowledge of improved demonstrated groundnut production technology. Remaining variables *viz.,* social participation, farm size, annual income, market orientation, source of irrigation, extension participation, source of information and scientific orientation were not established any significant relationship with the knowledge level of improved demonstrated groundnut production technology. It indicated no significant relationship between social participation, farm size, annual income, market orientation, source of irrigation, extension participation, source of information and scientific orientation with their level of knowledge of improved demonstrated groundnut production technology.

Thus, it can be concluded that education of both categories of farmers had positively significant relationship with their level of knowledge. On the other hand social participation, market orientation and source of irrigation of both categories of farmers could not establish any significant relationship with the knowledge level of improved demonstrated groundnut production technology. Some of the similar results have identified by Lakhera (2000), Chhodavadia (2001) and Prajapati (2006).

Conclusion:
Majority of the respondents from beneficiary (91.43%)

and non-beneficiary (67.14%) farmers were had medium to high level of knowledge about improved groundnut production technology.

The beneficiary farmers had good knowledge regarding major groundnut production practices *viz.,* improved variety, type of groundnut, time of sowing, interculturing, method of fertilizers application (basal), sowing distance, weeding and pest control. In case of non-beneficiary farmers had good knowledge about practices *viz.,* improved variety, type of groundnut, time of sowing, weeding, interculturing, sowing distance and method of fertilizers application (basal).

It was found that the independent variables *viz.,* education, annual income, extension participation and scientific orientation had positive and significant association with the knowledge level of improved demonstrated groundnut production technology of the beneficiary farmers at 0.01 level of significance. Whereas, source of information had positive significant association with the knowledge level of beneficiary farmers at 0.05 level of significance. On the other hand, age and farm size were negatively and significantly association with the knowledge level of beneficiary farmers at 0.05 level of significance. Remaining four variables; size of family, social participation, market orientation and source of irrigation were failed to establish any significant association with the knowledge level of improved demonstrated groundnut production technology by the beneficiary farmers.

Among non-beneficiary farmers, the calculated correlation co-efficient value in case of education was positively significant with the knowledge level of improved demonstrated groundnut production technology at 0.05 level of significance. Whereas, age and size of family were negatively significant at 0.05 level of significance with the knowledge level of improved demonstrated groundnut production technology by the non-beneficiary farmers. Remaining variables *viz.,* social participation, farm size, annual income, market orientation, source of irrigation, extension participation, source of information and scientific orientation had not established any significant association with the knowledge level of improved demonstrated groundnut production technology.

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