IJ International Journal of Home Science Extension And Communication Management
Volume 1 | Issue 2 | July, 2014 | 80-86
DOI : 10.15740/IJHSECM/1.2/80-86
Visit us : *www.researchjournal.co.in*

RESEARCH ARTICLE

Study on personal, socio-economic, communication, situational characteristics and constraints of adopting recommended practices of *Kharif* groundnut growers in Saurashtra zone of Gujarat

BHARAT HADIYA[1] AND GIRISH DESHMUKH*
College of Agriculture, Junagadh Agricultural University, JUNAGADH (GUJARAT) INDIA
(Email : 251girish@gmail.com)

ABSTRACT : Groundnut is considered as the world's fourth largest source of edible oil and third most important source of vegetable protein. It is also a major oilseed legume crop in India and meets about 30 per cent of the edible oil requirements in the country. Groundnut is a principal crop of the Saurashtra region of Gujarat State. It is grown so extensively since 1910. There is a wide gap exists between average yield of common farmers and actual potential yield. The study was conducted in the South Saurashtra Agro-Climatic Zone of Gujarat State. The study was conducted under ex-post facto research design. 4 talukas were randomly selected, from each selected taluka three villages were selected randomly. Thus, 12 villages were selected. Total 120 respondents, 10 respondents from each selected village were selected by using multistage random sampling technique with a condition that the farmers have cultivated *Kharif* groundnut at least since last two years. Important constraints faced by farmers are High price of chemical fertilizers, Less supply of electricity, High price of improved and hybrid seeds, High cost of threshing and harvesting as well as high cost and lack of skilled labours. And important remedies to overcome it are Remunerative price of the product should be made available; the projects for increasing availability of irrigation water should be implemented.

KEY WORDS : Adoption, Groundnut, Characteristics, Constraints, Suggestions

View Point Article : Hadiya, Bharat and Deshmukh, Girish (2014). Study on personal, socio-economic, communication, situational characteristics and constraints of adopting recommended practices of *Kharif* groundnut growers in Saurashtra zone of Gujarat. *Internat. J. Home Sci. Extn. & Comm. Manage.*, **1** (2): 80-86

Article History : Received : 01.05.2014**; Revised :** 15.05.2014**; Accepted :** 30.05.2014

INTRODUCTION

In India groundnut is major edible oilseed crop grown, more or less in 12 states. In comparison to other crop it occupied fifth rank in term of production and sixth rank in area. Gujarat, Andhra Pradesh, Tamil Nadu, Karnataka, Maharashtra are chief groundnut growing states and together they contributed more than 80 per cent of the country's production. Rest of production comes from states *viz.*, Rajasthan, Madhya Pradesh, Uttar Pradesh, Punjab and Orissa. Among these states, Gujarat stands first in term of both area and production. Gujarat is leading state in groundnut

*** Author for correspondence**
[1]Krishi Vigyan Kendra, RANDHEJA (GUJARAT) INDIA

cultivation in both area and production with 1.8 million hectares and 1.91 million tonnes, respectively. Gujarat accounts for 1/3rd of the total area under groundnut in the country. In term of production Gujarat contributes around 30 per cent to the country's groundnut production. Groundnut cultivation in Gujarat predominantly concentrated Saurashtra region. Saurashtra is an oil pouch of the India. Groundnut is cultivated across the region on 1.63 million hectares of land with output of 1.7 million tones nut in shell. All India base, share of Saurashtra is 25 per cent by area and 27 per cent by production.

The average productivity of groundnut is very less (938 kg per ha) as compared to national average of 3540 kg per hectare in USA and potential yield 4880 kg per hectare at research station. Moreover, because of weather sensitive crop and problem of diseases and pests, groundnut yield is fluctuating in a wide range. In an extreme abnormal condition yield of groundnut decreases up to 70 per cent. Besides this, cost of production increased due to rise in price of inputs, increased cost of energy and labour as well. Nevertheless cost of production increased, due to political interference and problems of aflatoxin price of groundnut is not at compensating with it. Add to this, groundnut growers use shortcut method for getting higher production without conserving natural resources like land, water and biodiversity which ultimately cause eco-environment degradation.

In the process of agricultural development, the prime mover is considered to be the improved farming technology. The benefit of such technology is actually derived only when farmers in their local situations efficiently utilize it. The farmers are very much eager to get maximum benefits from the agricultural technology. However, many of them could not do so, because a large number of impediments are coming in that way, creating large adoption gap culminating in low yield. The constraints in adoption of recommended crop production technology of castor as intercrop with groundnut faced by respondents were to understand and to overcome them. Thus, it is very much essential to ascertain the technological gaps in groundnut production. It would be useful to develop sequential concept of groundnut production technologies with a special reference to the identification of factors responsible for the technological gaps with this consideration the problem entitled "adoption of recommended practices of *Kharif* groundnut growers in South Saurashtra zone of Gujarat state". With objective to know the profile characteristics of farmers, to seek the constraints faced by the respondents in adoption of recommended crop production technology of castor as intercrop with groundnut and suggestions to overcome the constraints faced by the respondents in adoption of recommended crop production technology of castor as intercrop with groundnut.

METHODOLOGY

Area of the study:

The study was conducted in the South Saurashtra Agro-Climatic Zone of Gujarat state for the following reasons. The area has ideal conditions for the successful cultivation of *Kharif* groundnut. The soil and climatic conditions are very favourable for the cultivation of *Kharif* groundnut. Similar research study was not conducted in the area under study.

Research design:

The study was conducted under *ex-post facto* research design. It is systemic empirical enquiry in which the scientist does not have direct control over the independent variables because their manifestations have already occurred or they are inherently not manipulated (Kerlinger, 1969).

Sampling techniques:

A multistage random sampling technique was followed for this study. The sampling technique is described as under.

Selection of the talukas

The South Saurashtra zone is consisted of 26 talukas of 5 districts of the state having common agro-climatic conditions. Out of 26 talukas, 4 talukas were randomly selected.

Selection of the villages:

From each selected taluka three villages were selected randomly. Thus, 12 villages were selected.

Selection of the respondents:

Total 120 respondents, 10 respondents from each selected village were selected by using multistage random sampling technique with a condition that the farmers have cultivated *Kharif* groundnut at least since last two years.

Table A: Taluka-wise selection of villages and respondents in south Saurashtra zone of Gujarat state

Sr. No.	Name of talukas	Name of villages	Number of selected respondents
1.	Maliya Hatina	Bhanduri	10
		Pinkhor	10
		Maliya	10
2.	Mangrol	Farangata	10
		Sheel	10
		Sarsali	10
3.	Upleta	Samadhiyala	10
		Varjangjaliya	10
		Mekhatimbi	10
4.	Kutiyana	Khunpur	10
		Mandava	10
		Thepada	10
		Total	120

Constraints faced by the respondents in adoption of recommended crop production technology of castor as intercrop with groundnut.

For ascertaining the constraints faced by the respondents in adoption of recommended practices of *Kharif* groundnut an explorative study was made. The constraints were kept open before the respondents to offer their difficulties. The practice wise constraints were collected from the respondents and percentage was worked out for each constraint. To trace the relative importance of constraints, overall ranks were assigned on the basis of percentage.

To overcome the practice wise constraints, the suggestions were kept open before the respondents. The suggestions were collected from the respondents and percentage was worked out. To trace the relative importance of the suggestion, the overall ranks were assigned on the basis of percentage.

OBSERVATION AND ASSESSMENT

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

Personal characteristics :

Age:

The data presented in Table 1 indicated that 50.83 per cent of the respondents were from middle age group, whereas 28.33 and 20.83 per cent of the respondents belonged to the young and old age group, respectively.

Table 1 : Distribution of the respondents according to their personal characteristics (n=120)

Sr. No.	Characteristics	Frequency	Percentage
1.	**Age**		
	Young age group (Upto 35 years)	34	28.33
	Middle age group (36 to 50 years)	61	50.83
	Old age group (Above 50 years)	25	20.83
2.	**Education**		
	Illiterate	28	23.33
	Primary (1to7th standard)	66	55.00
	Secondary (8th to 10th standard)	19	15.83
	Higher education (Above 10th)	7	5.83

Education:

The data presented in Table 1indicated that 55.00 per cent of the respondents were educated up to primary level whereas, 23.33 per cent of the respondents were illiterate, 15.83 per cent of the respondents were educated up to secondary level and only 5.83 per cent of the respondents were educated up to higher secondary level. Thus, the most of the respondents were middle aged. This might be due to lack of proper educational facilities in area under study, they could not get higher education. So, majority of the respondents were educated up to primary level.

Socio-economic characteristics :

Size of land holding :

The data presented in Table 2 revealed that about 65.83 per cent of respondents had medium size of land holding whereas, 20.83 and 13.33 per cent respondents possessed small and large size of land holding, respectively. This might be due to the fact in rural areas yet joint family system is prevailing.

Table 2 : Distribution of the respondents according to their socio-economic characteristics (n=120)

Sr. No.	Characteristics	Frequency	Percentage
1.	**Size of land holding**		
	Small size (up to 1ha)	25	20.83
	Medium size (1to 2 ha)	79	65.83
	Large size (above 2 ha)	16	13.33
2.	**Annual income**		
	Low (Up to Rs. 40,000)	14	11.67
	Medium (Rs. 40,000 to 80,000)	74	61.67
	High (Above Rs. 80,000)	32	26.67
3.	**Social participation**		
	Low social participation (Below 1.08)	40	33.33
	Medium social participation (1.08 to3.46)	63	52.50
	High social participation (Above 3.46)	17	14.16
	Mean = 2.27	S.D. = 1.19	

Annual income :

The data presented in Table 2 indicated that 61.67 per cent of the respondents had medium income (Rs. 40,000 to 80,000). About 26.67 per cent of the respondents were from high income group. Whereas, 11.67 per cent of the respondents were from low income group (below Rs. 40,000). The probable reason for this might be that the castor is *Kharif* crop and give good performance as intercrop with groundnut even though less rainfall and that is why the farmers are getting assured average yield. Therefore, majority respondents *viz.*, 61.67 per cent and 26.67 per cent were from the categories of medium and high-income group, respectively.

Social participation :

Data presented in Table 2 revealed that 52.50 per cent of the respondents had medium level of social participation,

followed by low (33.33%) and High (14.16%) social participation.

It is known that there are many co-operative organizations in Gujarat state. Most of villages of this area having at least two co-operative societies *viz.,* service cooperative society and milk producers co-operative society. The majority of the farmers were members of both of these co-operative societies. Moreover, some farmers were also found members of other organizations. Therefore, majority of the respondents were belonged to medium level of social participation.

Communication characteristics :

Localite -cosmopolite value orientation :

It is evident from Table 3 that 56.66 per cent of the respondents had medium localite- cosmopolite value orientation, whereas 24.16 and 19.16 per cent of them had low and high localite-cosmopolite value orientation, respectively. This might be due to the fact that most of the respondents believed to have contact with outside agencies to satisfy some of their needs pertaining to the recommended crop production technology of castor as intercrop with groundnut.

Table 3 : Distribution of the respondents according to their communication characteristics (n=120)

Sr. No.	Characteristics	Frequency	Percentage
1.	**Localite-cosmopolite value orientation**		
	Low		
	Localite-cosmopolite value orientation (Below 8.04)	29	24.16
	Medium		
	Localite- cosmopolite value orientation (8.04 to 15.24)	68	56.66
	High		
	Localite- cosmopolite value orientation (Above 15.24)	23	19.16
	Mean = 11.64 S.D. = 3.60		
2.	**Extension participation**		
	Low		
	Extension participation (Below 13.57)	26	21.67
	Medium		
	Extension participation (13.57 to 30.51)	82	68.33
	High		
	Extension participation (Above 30.51)	12	10.00
	Mean = 22.04 S.D. = 8.47		
3.	**Mass media exposure**		
	Low		
	Mass media exposure (Below 7.36)	24	20.00
	Medium		
	Mass media exposure (7.36 to 14.56)	68	56.66
	High		
	Mass media exposure (Above 14.56)	28	23.33
	Mean = 10.96	S.D. = 3.60	

Extension participation :

The data regarding extension participation are presented in Table 3. On the basis of data, it is clear that 68.33 per cent of the respondents had medium extension participation, whereas 21.67 and 10.00 per cent of them had low and high extension participation, respectively. It can be inferred that the farmers of this area are always in need of information related to crop production technology and that is why they participate in different extension activities. However, they are not participating all extension programmes. Therefore, majority of the respondents belonged to medium extension participation group.

Mass media exposure :

The data presented in Table 3 revealed that 56.66 per cent of the respondents had medium level of mass media exposure, whereas 23.33 and 20.00 per cent of them had high and low level of mass media exposure, respectively. This might be due to the fact that in the rural area the modern means of communication is not still popular or the programmes related to agriculture are not regularly attended by the farmers.

Situational characteristics :

Irrigation potentiality :

The data in Table 4 reported that 39.17 per cent

Table 4 : Distribution of the respondents according to their situational characteristics (n=120)

Sr. No.	Characteristics	Frequency	Percentage
1.	**Irrigation potentiality**		
	Well	18	15.00
	Canal	20	16.67
	Well + Canal	25	20.83
	Bore well	47	39.17
	Check dam	10	8.33
2.	**Cropping intensity**		
	Low		
	Cropping intensity (Below 170.41)	20	16.67
	Medium		
	Cropping intensity (170.41 to 240.80)	73	60.83
	High		
	Cropping intensity (Above 240.80)	27	22.50
	Mean = 205.60	S.D. = 35.19	

Table 5 : Constraints faced by the respondents in adoption of recommended crop production technology of castor as intercrop with groundnut (n=120)

Sr. No.	Constraints	Frequency	Per cent	Rank
1.	High price of improved and hybrid seeds	103	85.83	III
2.	Non-availability of improved seeds in required quantity in time	79	65.83	XI
3.	Scarcity of FYM/Compost fertilizers	96	80.00	VI
4.	Non-availability of chemical fertilizers in required quantity in time	94	78.33	VII
5.	High price of chemical fertilizers	108	90.00	I
6.	High price of insecticides/ pesticides and fungicides	90	75.00	VIII
7.	Lack of knowledge about the recommended doses of fungicides/pesticides	79	65.83	XI
8.	Lack of training on improved technologies	45	37.50	XX
9.	High cost and lack of skilled labours	98	81.66	IV
10.	Irregular visit of village level workers	74	61.66	XIII
11.	Insufficient demonstration of improved technologies on farmers' fields	85	70.83	X
12.	Non-availability of finance in time	74	61.66	XIII
13.	Non-availability of irrigation water at important growth stages of castor	87	72.50	IX
14.	Less supply of electricity	105	87.50	II
15.	High cost of threshing and harvesting	98	81.66	IV
16.	Poor quality of seed	71	59.16	XV
17.	Lack of storage facility	48	40.00	XIX
18.	Lack of knowledge about critical stages	58	48.33	XVII
19.	Lack of marketing infrastructure facilities	68	56.66	XVI
20.	Fear of reduction in the yield of castor as intercrop with groundnut as compared to sole groundnut crop	58	48.33	XVII

Table 6 : Suggestions from the respondents to overcome the constraints in adoption of recommended crop production technology of castor as intercrop with groundnut (n=120)

Sr. No.	Suggestions	Frequency	Per cent	Rank
1.	Chemical fertilizers should be made available at subsidized rate	97	80.83	III
2.	Cost of threshing and harvesting should be reduced by innovation of improved machinery	85	70.83	V
3.	Sufficient and timely credit facility should be made available	51	42.50	X
4.	Remunerative price of the product should be made available	110	91.66	I
5.	Market facilities should be strengthened	48	40.00	XI
6.	Effective soil moisture conservation technology should be developed	57	47.50	VIII
7.	Agriculture literature should be provided	32	26.66	XIV
8.	More number of training programme should be organized for the farmers in relation to this cropping system	38	31.66	XIII
9.	Demonstration of new farm technology should layout on farmers' field	75	62.50	VI
10.	There must be regular electric supply at the time of critical stages of crops for irrigation	90	75.00	IV
11.	Village level workers should be frequently contacting the farmers to make them aware about the new farm technology	43	35.83	XII
12.	Farmer should be protected by crop insurance, if crops fail	53	44.16	IX
13.	Improved and certified seed should be provided by government at local place	64	53.33	VII
14.	The projects for increasing availability of irrigation water should be implemented	102	85.00	II

respondents having bore well as irrigation facility. Whereas, 20.83 per cent respondents were found using well and canal for irrigating their crops. Only 16.67 per cent respondents had canal to irrigate their crops. Remaining 15.00 and 8.33 per cent respondents had well and check dams as irrigation source, respectively. Therefore, it can be concluded that majority 75.00 per cent of the farmers had well, bore well and well with canal as irrigation sources. This might be due to the fact that in the study area, the bore well is the main irrigation source of common to most of the farmers.

Cropping intensity :

The data presented in Table 4 revealed that 60.83 per cent respondents had medium cropping intensity, followed by 22.50 and 16.67 per cent respondents were high and low cropping intensity, respectively.This might be due to the fact that climatic conditions, structure and soil texture are suitable for castor as intercrop with groundnut.

The highest percentage observed in constraints (Table 5) were: high price of chemical fertilizers (90.00%), less supply of electricity (87.50), high price of improved and hybrid seeds (85.83%), high cost and lack of skilled labours as well as high cost of threshing and harvesting (81.66%), scarcity of FYM/ compost fertilizers (80.00%), non-availability of chemical fertilizers in required quantity in time (78.33), high price of insecticides/pesticides and fungicides (75.00%), non-availability of irrigation water at important growth stages of castor (72.50%) and insufficient demonstration of improved technologies on farmers' fields (70.83 %).

The probable reason for the above facts might be that the economic conditions of the farmers inhibit them to purchase high cost of farm inputs.

The moderate percentage observed in constraints were: non-availability of improved seeds in required quantity in time and lack of knowledge about the recommended doses of fungicides/pesticides (65.83 %), irregular visit of village level workers and non-availability of finance in time (61.66 %), poor quality of seed (59.16%) and lack of marketing infrastructure facilities (56.66 %).

Less important constraints faced by the farmers were: lack of knowledge about critical stages and fear of reduction in the yield of castor as intercrop with groundnut as compared to sole groundnut crop (48.33%), lack of storage facility (40.00 %) and lack of training on improved technologies (37.50%). Similar work on the given topic have also been done by Deshmukh *et al*. (2013); Makwana (2007); Rogers and Shoemaker (1971) Singh (1977) and Singh and Supe (1969).

The comparatively less important suggestions as expressed by the respondents were: demonstration of new farm technology should layout on farmers' field (62.50%), improved and certified seed should be provided by government at local place (53.33%), effective soil moisture conservation technology should be developed (47.50%), farmer should be protected by crop insurance, if crops fail (44.16 %), sufficient and timely credit facility should be made available (42.50%), market facilities should be strengthened (40.00%), village level workers should be frequently contacting the farmers to make them aware about the new farm technology (35.83%), more number of training programme should be organized for the farmers in relation to this cropping system (31.66 %) and agriculture literature should be provided (26.66 %).

It can be concluded that important suggestions offered by respondents (Table 6) were: remunerative price of the product should be made available (Rank I), the projects for increasing availability of irrigation water should be implemented (Rank II), chemical fertilizers should be made available at subsidized rate (Rank III), there must be regular electric supply at the time of critical stages of crops for irrigation (Rank IV) and cost of threshing and harvesting should be reduced by innovation of improved machinery (Rank V).

It is clear from Table 5 about the suggestions made by the majority of the farmers that these suggestions are based on the facilities have been availed but are not sufficient and satisfied up to the extent of their expectations.

Thus, it can be concluded from the facts mentioned above that the facilities to the respondents' are already being provided by the human resources or by natural resources needs to be strengthened and tailored according to the requirements of respondents. The other suggestions offered by the farmers need to be looked in to account very carefully by the appropriate agencies to improve the productivity of crop.

Conclusion :

Majority of respondents belonged to medium extension participation (68.33%), medium size of land holding (65.83%), medium annual income (61.67%) and medium cropping intensity (60.83%).

More than one half of respondents belonged to medium mass media exposure (56.66%), medium localite- cosmopolite value orientation (56.66%), primary level of education (55.00%), medium social participation (52.50%) and middle age group (50.83%). As less than one half of respondents belonged to bore well irrigation potentiality (39.17%).

The perusal of data presented in Table 5 revealed that the most important problems as expressed by most of the respondents were; high price of chemical fertilizers (Rank I), less supply of electricity (Rank II), high price of improved and hybrid seeds (Rank III), high cost and lack of skilled labour as well as high cost of threshing and harvesting (Rank IV), scarcity of FYM/compost fertilizers (Rank VI), non-availability of chemical fertilizers in required quantity in time (Rank VII), high price of insecticides/ pesticides and fungicides (Rank VIII) and non-availability of irrigated water at important growth stages of castor (Rank IX).

The most important suggestions offered by the respondents to overcome the constraints in adoption of recommended crop production technology of castor as intercrop with groundnut were: remunerative price of the product should be made available (91.66%), the projects for increasing availability of irrigation water should be implemented (85.00 %), chemical fertilizers should be made available at subsidized rate (80.83 %), there must be regular electric supply at the time of critical irrigation (75.00 %), cost of threshing and harvesting should be reduced by innovation of improved machinery (70.83%) work on the related topic was done by Bharad *et al*. (2000) and Chandravadia and Kanani (2010).

REFERENCES

Bharad, N.D., Karkan, B.R. and Kalieriya, B.N. (2000). Training needs of rural groundnut growers. *Gujarat J. Extn. Edu.*, **22** (1&2) : 40-46.

Deshmukh, Girish, Patel, H.B., Netravathi, G. and Gulkari, Krunal (2013). Impact evaluation of frontline demonstrations on Indian mustard in Anand, Gujarat. *Agric. Update,* **8** (2): 295-298.

Kerlinger, F. N. (1969). *Foundation of behavioral research*. Surjit Pub., New Delhi, pp. 198-224.

Kiran, Chandravadia and Kanani, P.R. (2010). Training needs of farm women in relation to post harvest technology in groundnut. *Agric. Update,* **5** (3&4) 412-416.

Makwana, B. A. (2007). Knowledge and adoption of improved animal husbandry practices followed by *Gir Maldharis* in *Gir* area of Gujarat State. M.Sc. (Ag.). Thesis, Gujarat Agricultural University, Junagadh, GUJARAT (INDIA).

Rogers, E.M. and Shoemaker, F.F. (1971). *Communication of innovations*. Free Press, New Delhi. pp. 26-40.

Singh, A. K (1977). Training needs of farmers. *Rural India*, **40** (4): 78-79.

Singh, S.N. and Supe, S.V. (1969). *Dynamics of rational behaviours of Indian farmers.* New Heights, NEW DELHI, INDIA.