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ASSOCIATION BETWEEN CHARACTERISTICS OF GROUNDNUT GROWERS AND THEIR LEVEL OF KNOWLEDGE ABOUT PLANT PROTECTION MEASURES

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ABSTRACT

Groundnut is an important oilseed crop in India which occupies first position in terms of area and second position in terms of production. The study was undertaken in Banaskantha district of Gujarat state during 2019-20. Three talukas viz., Deesa, Lakhani and Dantiwada were selected purposively having higher areas under groundnut cultivation in the district, (Anonymous 2019). Five villages from each selected taluka were selected randomly. Further from each selected village, ten groundnut growers were randomly selected comprising of 150 respondents. Ex-post facto research design was adopted for this study. The data were collected by personal contact method with help of structured interview schedule and data were coded, classified, tabulated and analysed in the light of objectives. Eight independent and one dependent variables were selected for study. The independent variables viz., education, land holding, annual income, extension participation, source of information and scientific orientation were positively and highly significantly associated with knowledge about plant protection measures. While, age and social participation had non-significant correlation with knowledge about plant protection measures

Key words: *knowledge, association, plant protection, groundnut*

INTRODUCTION

Groundnut is an important oilseed crop in India which occupies first position in terms of area and second position in terms of production. In Gujarat, during the year 2017-18, groundnut crop produces around 3.97 million tonnes from 1.62 million hectare of land with a productivity of 2440 kg/ha. Plant protection plays an important role in crop production. Farmers are not adopting the recommendations properly and hence, the importance of systematic use of plant protection measures to control pests and diseases cannot be neglected. Looking to the importance and urgency of the problem, a study was planned with the following objectives.

OBJECTIVES

(1) To study the personal, socio-economic, communication and psychological characteristics of the groundnut growers

(2) To ascertain the association between personal, socio-economic, communication and psychological characteristics of the groundnut growers with their level of knowledge regarding plant protection measures

METHODOLOGY

The present study was undertaken in Banaskantha district as having large areas and production under groundnut in North Gujarat. Three talukas *viz.,* Deesa, Lakhani and Dantiwada were selected purposively having higher areas under groundnut cultivation in the district. Five villages from each selected talukas were selected randomly. Further from each selected village, ten groundnut growers were randomly selected comprising of 150 respondents.

Ex-post facto research design was adopted for this study. For measurement of selected characteristics, scales developed by past researchers with due modification as well as by developing appropriate schedules were used. The data were collected by personal contact method with the help of structured interview schedule. The collected data were coded, classified, tabulated and analysed in order to make the findings meaningful in light of objectives for drawing meaningful interpretation.

RESULTS AND DISCUSSION

Personal, socio-economic, communication and psychological characteristics of groundnut growers

Keeping in view the objectives of the study, the relevant variables were selected on the basis of an extensive review of literature related to the study, in consultation with experts and members of advisory committee. Only those variables which were found most relevant to the present investigation were finally selected. The result of selected variables were presented in Table 1.

Table 1: Distribution of the groundnut growers according to their age (n=150)

Sr. No.	Selected characteristics of groundnut growers	Frequency	Per cent
	Age group		
1	Young age (up to 35 years)	38	25.34
2	Middle age (36 to 50 years)	73	48.66
3	Old age (above 50 years)	39	26.00
	Education level		
1	Illiterate	08	5.33
2	Functionally literate	19	12.67
3	Primary school	30	20.00
4	Middle school	59	39.33
5	High school	22	14.67
6	College/Post graduation	12	8.00
	Size of land holding		
1	Marginal (up to 1.00 ha)	17	11.33
2	Small (1.01 to 2.00 ha)	40	26.67
3	Medium (2.01 to 4.00 ha)	75	50.00
4	Large (above 4.00 ha)	18	12.00
	Annual income		
1	Low (up to ₹2,50,000)	28	18.66
2	Moderate (₹2,50,001 to ₹5,00,000)	45	30.00
3	High (₹5,00,001 to ₹10,00,000)	61	40.67
4	Very high (Above ₹10,00,000)	16	10.67
	Social participation		
1	No membership	53	35.33
2	Membership in one organization	77	51.33
3	Membership in more than one organization	13	8.67
4	Membership with office bearer	07	4.67
	Extension participation		
1	Low level participation (<30.23)	22	14.67
2	Medium level participation (≥30.23 <72.83)	99	66.00
3	High level participation (≥72.83)	29	19.33
	Mean = 51.53 S. D. = 21.30		
	Utilization level of information sources		
1	Low (<28.56)	28	18.67
2	Medium (≥28.56 <54.70)	85	56.66
3	High (≥54.70)	37	24.67
	Mean = 41.63 S. D. = 13.07		
	Scientific orientation		
1	Low (<12.13)	27	18.00
2	Medium (≥12.13 <23.20)	93	62.00
3	High (≥23.20)	30	20.00
	Total	**150**	**100.00**
	Mean = 17.67 S. D. = 5.53		

The data presented it Table 1 indicates that nearly half (48.66 per cent) of the groundnut farmers were from middle age group, having primary to middle school level of education (59.33 per cent), had 2.01 to 4.00 ha of land (50.00 per cent), having annual income up to ₹2,50,000.00 to ₹10,00,000.00 (70.67 per cent), had membership in one organization (51.33 per cent), had medium level of extension participation (66.00 per cent), had medium to high utilization level of information sources (81.33 per cent) and have medium scientific orientation (62.00 per cent).

Association between personal, socio-economic, communication and psychological characteristics of the groundnut growers with their level of knowledge regarding plant protection measures

Acceptance of recommended plant protection measures is not a unique act, but complex process involving sequence and thought of action. The action of an individual farmer is governed by personal, socio-economic, psychological and cultural factors involved in given situation. Some farmers adopt recommended plant protection measures more quickly than others because of the differences in personal characteristics. In order to ascertain the association between level of knowledge (dependent variable) of the groundnut farmers and their selected characteristics (independent variables), the correlation co-efficient ('r' values) were calculated. Empirical hypothesis was stated for testing the association and its significance was tested using zero order correlation. The results are given in Table 2.

Table 2 : Association between selected characteristics of groundnut growers with their level of knowledge of recommended plant protection measures

Sr. No.	Independent variables		Correlation coefficient ('r' value)
I	**Personal characteristics**		
	X_1	Age	-0.102^{NS}
	X_2	Education	0.299**
II	**Socio-economic characteristics**		
	X_3	Land holding	0.571**
	X_4	Annual income	0.507**
	X_5	Social participation	0.105^{NS}
III	**Communication characteristics**		
	X_6	Extension participation	0.449**
	X_7	Sources of information	0.387**
IV	**Psychological characteristics**		
	X_8	Scientific orientation	0.551**

* Significant at 0.05 level of significance **Significant at 0.01 level of significance
NS Not-Significant.

(1) Age and level of knowledge

It is apparent from data presented in Table 2 that the age of the groundnut farmers had negative and not-significant association ('r' = -0.102) with their level of knowledge about recommended plant protection measures. Thus, the null hypothesis was accepted. Hence, it is calculated that there is no association between the age of groundnut farmers and their level of knowledge. It is inferred, that all groundnut farmers did not have any concern with age and recommended plant protection measures. It means that knowledge level of all groundnut farmers did not relate with their age. The similar findings have been reported by Bansod (2016) and Patel (2019) Raval *et al*. (2021).

(2) Education and level of knowledge

The data presented in Table 2 reflect that the level of knowledge of the groundnut farmers regarding recommended plant protection measures had positive and highly significant ('r' = 0.299) association with their level of education at 0.01 level of significance. It indicates that the education plays an important role in influencing the level of knowledge about recommended plant protection measures among the groundnut farmers. Thus, the null hypothesis was rejected. The similar findings have been reported by Mane (2012) and Patel (2019).

(3) Land holding and level of knowledge

The data presented in Table 2 clearly indicate that land holding of the groundnut farmers had positive and highly significant association ('r' = 0.571) with their level of knowledge about recommended plant protection measures of groundnut at 0.01 level of significance. Thus, the null hypothesis was rejected. Thus, it is informed that the land holding had influence on level of knowledge about recommended plant protection measures in groundnut. Majority of the groundnut farmers were medium to large size farmers might be the proper reason for highly significant association with level of knowledge. The similar findings have been reported by Bansod, (2016) and Patel, (2019).

(4) Annual income and level of knowledge

It is apparent from the data presented in the Table 2 that annual income of the groundnut farmers had positive and highly significant association ('r' = 0.507) with their level of knowledge about recommended plant protection

measures of groundnut at 0.01 level of significance. Thus, the null hypothesis was rejected. The probable reason might be that sufficient income attract for purchasing mass media like T.V., Mobile, Newspapers etc., which might be useful to the farmers as sources of agricultural information. This leads them to new knowledge of technology and recommended plant protection measures. The similar findings have been reported by Mane, (2012) and Patel, (2019).

(5) Social participation and level of knowledge

The data presented in Table 2 indicate that social participation of the groundnut farmers had no association ('r' = 0.105) with their level of knowledge about recommended plant protection measures of groundnut. Thus, the null hypothesis was accepted. Therefore, it is inferred that social participation had no effect on their knowledge level. This might be because of majority farmers were members of only one organization i.e., milk cooperative society only. The similar finding has been reported by Thiyagrajan (2011) and Patel (2019).

(6) Extension participation and level of knowledge

It is apparent from the data presented in the Table 2 that extension participation of the groundnut farmers had positive and highly significant association ('r' = 0.449) with their level of knowledge about recommended plant protection measures of groundnut at 0.01 level of significance. Thus, the null hypothesis was rejected. Participation in various extension activities might have improved practical knowledge of the farmers. Hence, it had significant association with knowledge level. The similar findings have been reported by Patel (2019).

(7) Sources of information and level of knowledge

Data presented in Table 2 clearly indicate that sources of information of groundnut farmers had positive and highly significant association ('r' = 0.387) at 0.01 level with their level of knowledge about recommended plant protection measures of groundnut. Thus, the null hypothesis was rejected.The finding clearly indicates that exposure to various information source and contact with different personnel benefitted to the farmers in increasing the knowledge level of the groundnut farmers. The similar findings have been reported by Mane (2012) and Patel (2019).

(8) Scientific orientation and level of knowledge

Data presented in Table 2 clearly indicate that scientific orientation of groundnut farmers had positive and highly significant association ('r' = 0.551) at 0.01 level with their level of knowledge about recommended plant protection measures of groundnut. Thus, the null hypothesis was rejected. The finding clearly indicates that scientific orientation opens the mental horizon which increases the level of knowledge of groundnut farmers, which might have resulted in to its significant influence in level of knowledge about recommended plant protection measures of groundnut. The similar finding has been reported by Patel (2019).

CONCLUSION

The finding related to personal, socio-economic, communication and psychological characteristics of the groundnut growers indicate that nearly half of the groundnut farmers were from middle age group, having primary to middle school level of education, had 2.01 to 4.00 ha of land, having annual income up to ₹2,50,000.00 to ₹10,00,000.00, had membership in one organization, had medium level of extension participation, had medium to high utilization level of information sources and have medium scientific orientation.

While in case of association, independent variables viz., education, land holding, annual income, extension participation, sources of information and scientific orientation had positive and highly significantly association with level of knowledge about plant protection measures. Attitude had positive and significant association while age had negative and not-significant on other hand social participation had not-significant relationship with level of knowledge and with extent of adoption about plant protection measures.

CONFLICT OF INTEREST

The authors of the paper declare no conflict of interest

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